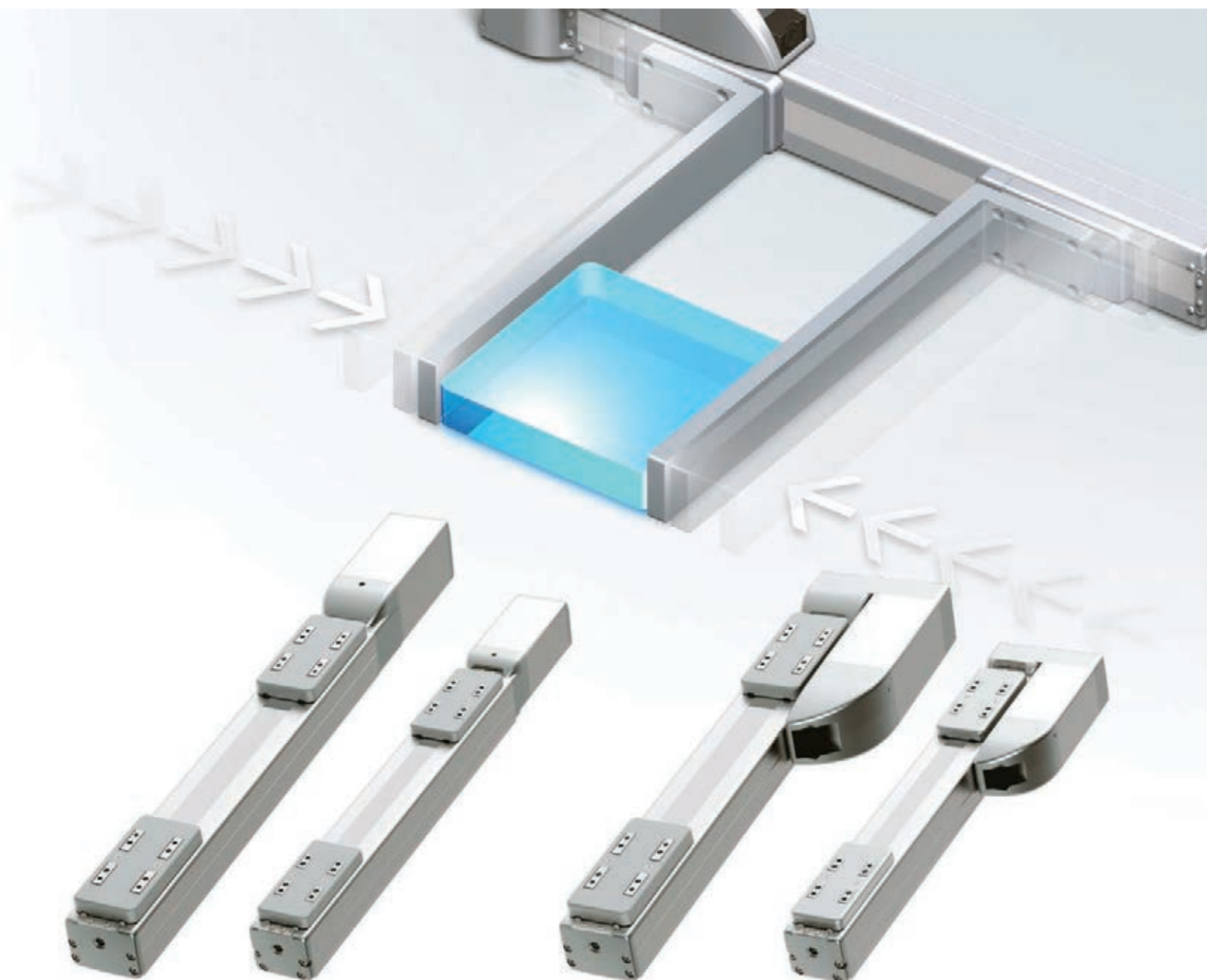


Long Stroke Gripper **RCP6(S)-GRST**

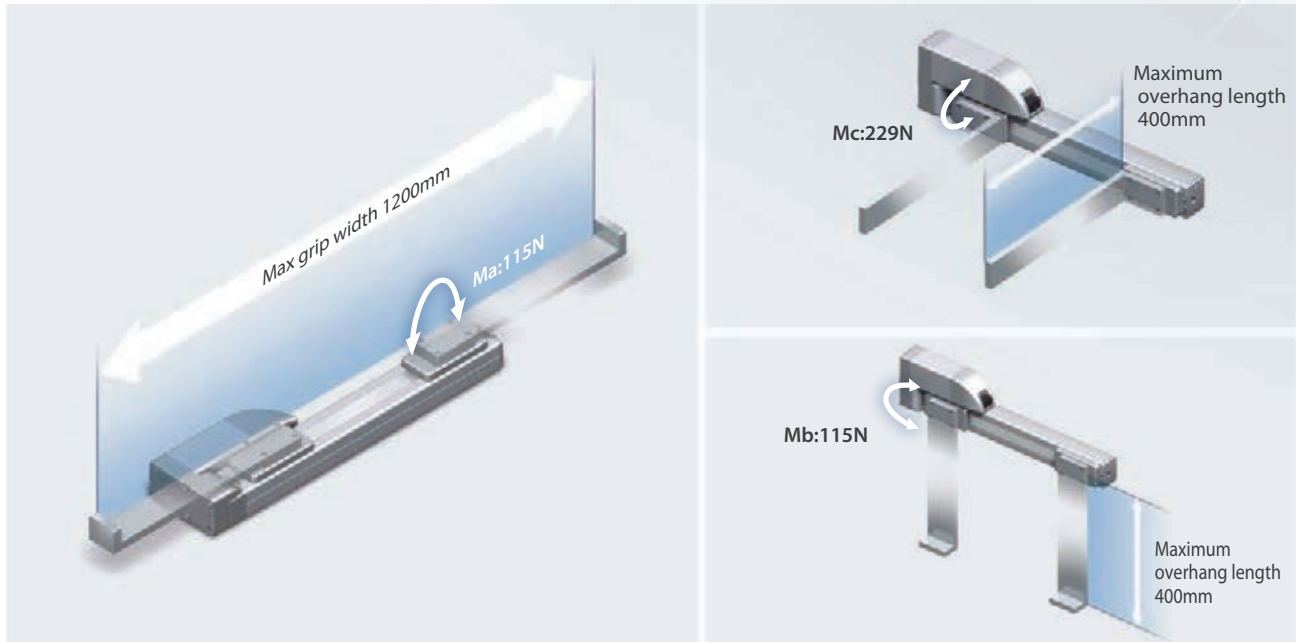


Long stroke and high grip force

Long stroke gripper is ideal for grasping large workpieces.

1. Long stroke provides high rigidity

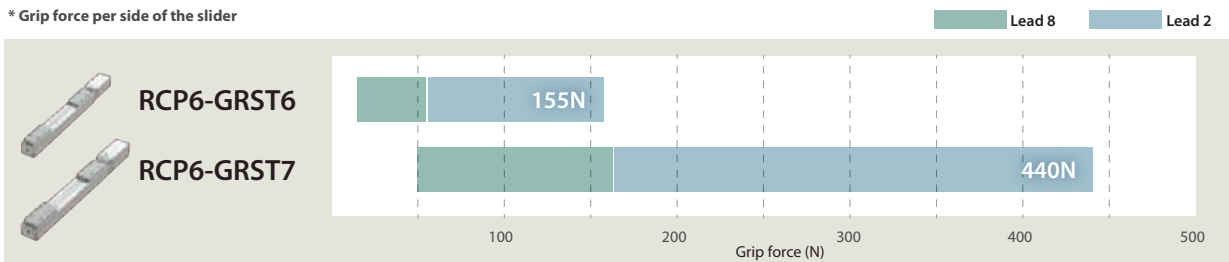
- A long stroke type with maximum opening/closing stroke of 260mm (130mm per side).



2. High grip force of up to 440N

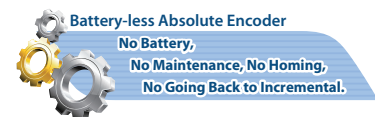
The grip force can be adjusted according to the workpiece.

* Grip force per side of the slider



3. Equipped with a Battery-less Absolute Encoder as standard

Since the home position is stored even when the power is turned off and on again, home return is not required. You can move to the next operation while gripping the workpiece.







4. Built-in controller type available

Types without controller (RCP6) and with built-in controller (RCP6S) are available.

Advantages of built-in controller type

- Smaller control panel.
- Simple wiring.

Product Lineup

Motor	Coupled motor				Side-mounted motor			
Model	RCP6(S)-GRST6C		RCP6(S)-GRST7C		RCP6(S)-GRST6R		RCP6(S)-GRST7R	
External view								
Opening/closing stroke [mm]	180/230		210/260		180/230		210/260	
Ball screw lead [mm]	8	2	8	2	8	2	8	2
Maximum opening/closing speed [mm/s]	180 (per side)	45 (per side)	180 (per side) (Note)	45 (per side)	180 (per side)	45 (per side)	180 (per side) (Note)	45 (per side)
Max grip force [N]	55 (per side)	155 (per side)	170 (per side)	440 (per side)	55 (per side)	155 (per side)	170 (per side)	440 (per side)
Positioning repeatability [mm]	±0.01							
Reference page	P3		P6		P9		P11	

(Note) 140 per side when operating ambient temperature is 5°C or below

Model Specification Items

RCP6
RCP6S

Series

Type

Encoder Type

Motor Type

Ball screw lead

Stroke

Applicable Controllers (RCP6)

I/O Type (RCP6S)

Cable Length

Options

RCP6	Separate controller
RCP6S	Built-in controller

WA	Battery-less Absolute
----	-----------------------

42P	42□ Pulse motor
56P	56□ Pulse motor

2	Lead 2mm
8	Lead 8mm

180	180mm (90mm per side)
210	210mm (105mm per side)
230	230mm (115mm per side)
260	260mm (130mm per side)

P3	PCON-CB/CGB PCON-CYB/PLB/POB* MCON-C/CG MCON-LC/LCG* MSEL-PC/PG
P5	RCM-P6PC* RCON*

*Coming soon

N	None
P	1m
S	3m
M	5m
X□□	Specified length
R□□	Robot cable

GRST6C	Body width 58mm Coupled motor type
GRST7C	Body width 70mm Coupled motor type
GRST6R	Body width 58mm Side-mounted motor type
GRST7R	Body width 70mm Side-mounted motor type

B	Brake
CJT	Cable exit direction (Top)
CJR	Cable exit direction (Right)
CJL	Cable exit direction (Left)
CJB	Cable exit direction (Bottom)
CJO	Cable exit direction (Outside)
MJF	Finger attachment mounting jig
ML	Motor side-mounted to left spec.
MR	Motor side-mounted to right spec.
NM	Non-motor end specification
SR	Slider roller specification
SS	Slider spacer

(Notes)

- When RCP6 (separate controller type) is selected, pick a code for the applicable controller, and when RCP6S (built-in controller type) is selected, pick a code for the I/O type.
- The type of motor, ball screw lead, stroke, and selection options vary depending on the actuator type. Please refer to the pages of each type for details.

RCP6(S)-GRST6C

±10µm
Standard

Simple
Dustproof

Battery-less
Absolute

2-Finger
Gripper

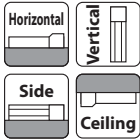
Slide
Type

Straight
Motor

Body Width
58mm

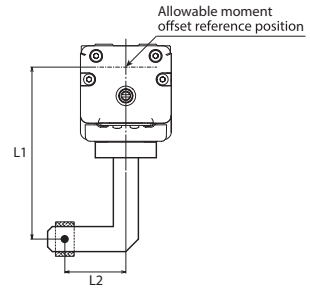
24v
Pulse
Motor

Model Specification Items	Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controllers	Cable Length	Options
	GRST6C	WA	42P						
	RCP6: Separate Controller RCP6S: Built-in Controller		WA: Battery-less Absolute	42P: Pulse Motor 42□ Size	8: 8mm 2: 2mm	180: 180mm (90mm per side) 230: 230mm (115mm per side)	P3: PCON (RCP6) MCON MSEL P5: RCM-P6PC (RCP6) (Coming soon) SE: SIO Type (RCP6S)	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable	Please refer to the options table below.

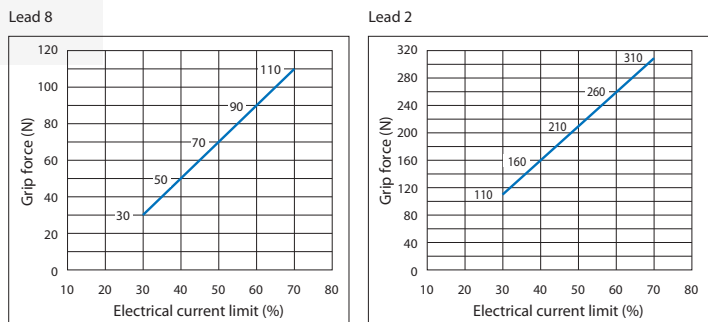


Gripping Force vs. Electric Current Limit

The gripping (pushing) force can be adjusted freely within the range of electric current limits of 30% to 70%.
* For L1 and L2, refer to the "Gripper selection method" on P.15.



The grip force in the graph below assumes that L1 and L2 in the figure above are zero.
Grip force is the sum of both fingers.



- POINT Selection Notes**
- The maximum opening/closing speed indicates the operating speed per side. The relative operating speed is twice this value.
 - The maximum grip force is the total value of both slider grip forces for the slider top surface (gripping position: 0mm, overhang amount: 0mm).
 - The maximum acceleration/deceleration while moving is 0.3G.
 - The fluctuation in grip force is ±25% (F.S.) (guideline).
 - The guideline for the overhang load length is 300mm or less in the Ma, Mb and Mc directions.
 - The self-locking function allows Lead 2 to maintain workpiece grip force even when the servo is turned off or the controller power supply is cut off. Lead 8 does not have a self-locking function.

Actuator Specifications

Item	Description	
Lead	Ball screw lead (mm)	8 2
	Max grip force (N)	110 (55 per side) 310 (155 per side)
Grip	Max speed while gripping (mm/s)	10 5
	Max speed (mm/s)	180 (per side) 45 (per side)
Speed / acceleration/ deceleration	Min speed (mm/s)	10 (per side) 5 (per side)
	Max. acceleration/deceleration (G)	0.3 0.3
	Brake (option)	Brake specifications: Non-excitation actuated electromagnetic brake
Opening/closing stroke	Brake retention force (kgf)	5.5 -
	Min. stroke (mm)	180 (90 per side) 180 (90 per side)
	Max. stroke (mm)	230 (115 per side) 230 (115 per side)

Cable Length

Type	Cable code	
Standard type	P(1m)	
	S(3m)	
	M(5m)	
Specified length	X06 (6m) ~ X10 (10m)	
	X11 (11m) ~ X15 (15m)	
	X16 (16m) ~ X20 (20m)	
	R01 (1m) ~ R03 (3m)	
Robot cable	R04 (4m) ~ R05 (5m)	
	R06 (6m) ~ R10 (10m)	
	R11 (11m) ~ R15 (15m)	
	R16 (16m) ~ R20 (20m)	

* Please contact IAI for more information regarding the maintenance cables.

Options

Name	Option code	Reference page
Brake	B	See P.17
Cable exit direction (Top)	CJT	See P.17
Cable exit direction (Right)	CJR	See P.17
Cable exit direction (Left)	CJL	See P.17

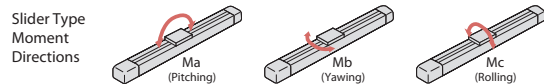
Stroke and Max. Opening/Closing Speed (Unit: mm/s)

Lead (mm)	Stroke	180 (mm)	230 (mm)
	8		180
2			45

Actuator Specifications

Item	Description
Drive system	Left/right trapezoidal screw
Positioning repeatability	±0.01mm
Backlash	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Lost motion	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Linear guide	Direct-acting infinite circulation type
Allowable static moment	Ma: 48N·m Mb: 69N·m Mc: 103N·m
Allowable dynamic moment (Note)	Ma: 11N·m Mb: 16N·m Mc: 24N·m
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration resistance / shock resistance	4.9m/s ² 100Hz or less
Compliant international standards	CE marking, RoHS Directive
Encoder type	Battery-less Absolute Encoder
Encoder pulse count	8192 pulse/rev

(Note) Assumes a standard rated life of 5000km. The running life will vary depending on operation and installation conditions. Please contact IAI for the running life.



Name	Option code	Reference page
Cable exit direction (Bottom)	CJB	See P.17
Finger attachment mounting jig	MJF	See P.17
Non-motor end specification	NM	See P.18
Slider roller specification	SR	See P.18

Dimensions

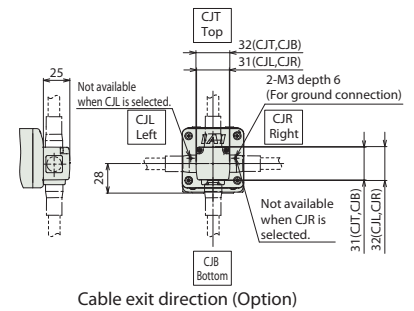
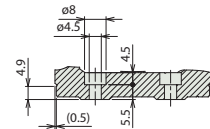
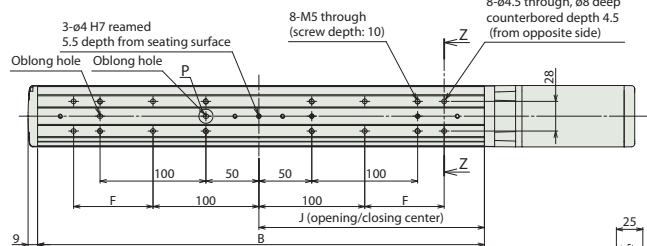
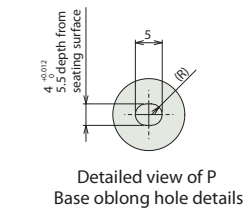
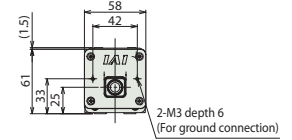
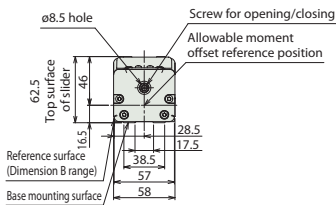
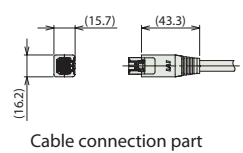
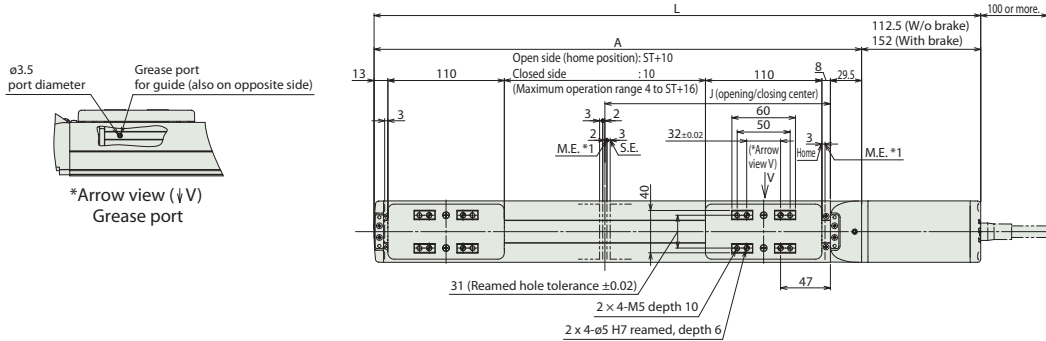
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RCP6-GRST6C

*1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
* Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



Dimensions by Stroke

Stroke		180	230
L	W/o Brake	573	623
	With Brake	612.5	662.5
A		460.5	510.5
B		422	472
F		75	100
J		213	238

Mass by Stroke

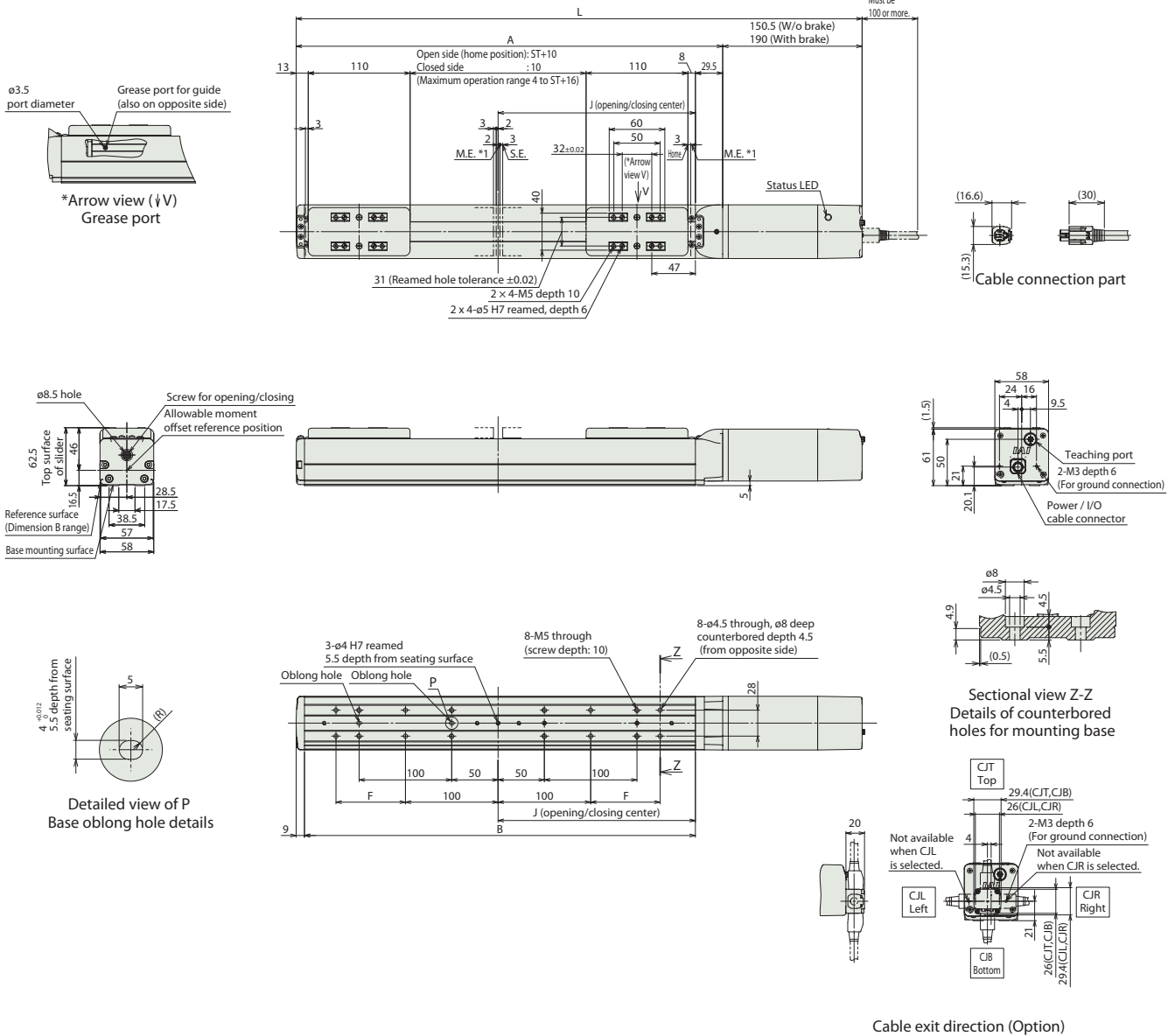
		Stroke		180	230
Mass (kg)	RCP6	W/o Brake		3.2	3.4
		With Brake		3.4	3.6

RCP6S-GRST6C

*1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.

* Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



Dimensions by Stroke

Stroke		180	230
L	W/o Brake	611	661
	With Brake	650.5	700.5
A		460.5	510.5
B		422	472
F		75	100
J		213	238

Mass by Stroke

Stroke		180	230
Mass (kg)	W/o Brake	3.3	3.5
	With Brake	3.5	3.7

Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

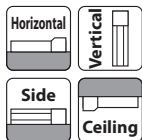
Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page
				Positioner	Pulse-train	Program	Network option *											
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM			
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	●	●	○	○	256	Please see the dedicated catalog or manual.
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	-	-	-		
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	-	-	●	●	●	-	-	30000		
PCON-CB/CGB		1	24VDC	●	●	-	●	●	○	○	●	●	●	-	-	512 (768 for network spec.)		
PCON-CYB/PLB/POB (Coming soon)		1		Option **	Option **	-	-	-	-	-	-	-	-	-	-	64		
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.	
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	●	-	●	●	●	-	128	Please see the RCON brochure or manual.	

* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion
** For the RCP6S Series with built-in controller, please contact IAI. *** Not yet available in Europe. For additional information, please ask IAI.

RCP6(S)-GRST7C

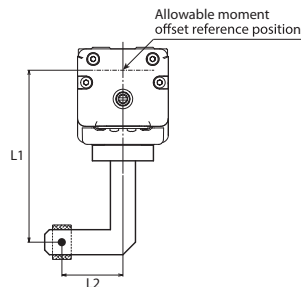
- ±10µm Standard
- Simple Dustproof
- Battery-less Absolute
- 2-Finger Gripper
- Slide Type
- Straight Motor
- Body Width 70mm
- 24v Pulse Motor

Model Specification Items	Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controllers	Cable Length	Options
	GRST7C	WA	56P						
	RCP6: Separate Controller RCP6S: Built-in Controller		WA: Battery-less Absolute	56P: Pulse Motor 56□ Size	8: 8mm 2: 2mm	210: 210mm (105mm per side) 260: 260mm (130mm per side)	P3: PCON (RCP6) MCON MSEL P5: RCM-P6PC (Coming soon) SE: SIO Type (RCP6S)	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable	Please refer to the options table below.



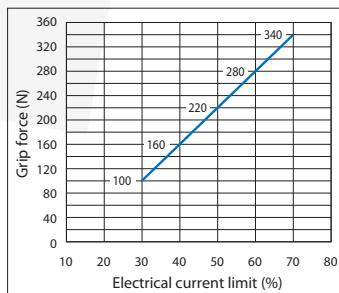
Gripping Force vs. Electric Current Limit

The gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.
* For L1 and L2, refer to the "Gripper selection method" on P.15.

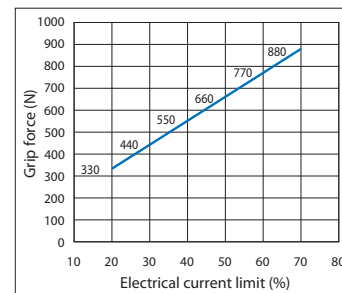


The grip force in the graph below assumes that L1 and L2 in the figure above are zero.
Grip force is the sum of both fingers.

Lead 8



Lead 2



- POINT Selection Notes**
- (1) The maximum opening/closing speed indicates the operating speed per side. The relative operating speed is twice this value.
 - (2) The maximum grip force is the total value of both slider grip forces for the slider top surface (gripping position: 0mm, overhang amount: 0mm).
 - (3) The maximum acceleration/deceleration while moving is 0.3G.
 - (4) The fluctuation in grip force is ±25% (F.S.) (guideline).
 - (5) The guideline for the overhang load length is 300mm or less in the Ma, Mb and Mc directions.
 - (6) The self-locking function allows Lead 2 to maintain workpiece grip force even when the servo is turned off or the controller power supply is cut off. Lead 8 does not have a self-locking function.

Actuator Specifications

Item	Description
Lead	Ball screw lead (mm) 8 2
Grip	Max grip force (N) 340 (170 per side) 880 (440 per side)
	Max speed while gripping (mm/s) 10 5
Speed / acceleration / deceleration	Max speed (mm/s) (Note) 180 <140> (per side) 45 (per side)
	Min speed (mm/s) 10 (per side) 5 (per side)
	Max. acceleration/deceleration (G) 0.3 0.3
Brake (option)	Brake specifications Non-excitation actuated electromagnetic brake
	Brake retention force (kgf) 17 -
Opening/closing stroke	Min. stroke (mm) 210 (105 per side) 210 (105 per side)
	Max. stroke (mm) 260 (130 per side) 260 (130 per side)

(Note) Value in brackets <> is when the operating ambient temperature is 5°C or below.

Cable Length

Type	Cable code
Standard type	P(1m)
	S(3m)
	M(5m)
Specified length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot cable	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Please contact IAI for more information regarding the maintenance cables.

Options

Name	Option code	Reference page
Brake	B	See P.17
Cable exit direction (Top)	CJT	See P.17
Cable exit direction (Right)	CJR	See P.17
Cable exit direction (Left)	CJL	See P.17

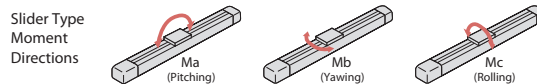
Stroke and Max. Opening/Closing Speed (Unit: mm/s)

Lead (mm)	Stroke	210 (mm)	260 (mm)
	8	180 <140>	<> When the operating ambient temperature is 5°C or below.
2	45		

Actuator Specifications

Item	Description
Drive system	Left/right trapezoidal screw
Positioning repeatability	±0.01mm
Backlash	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Lost motion	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Linear guide	Direct-acting infinite circulation type
Allowable static moment	Ma: 115N·m Mb: 115N·m Mc: 229N·m
Allowable dynamic moment (Note)	Ma: 44N·m Mb: 44N·m Mc: 89N·m
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration resistance / shock resistance	4.9m/s ² 100Hz or less
Compliant international standards	CE marking, RoHS Directive
Encoder type	Battery-less Absolute Encoder
Encoder pulse count	8192 pulse/rev

(Note) Assumes a standard rated life of 5000km. The running life will vary depending on operation and installation conditions. Please contact IAI for the running life.



Name	Option code	Reference page
Cable exit direction (Bottom)	CJB	See P.17
Finger attachment mounting jig	MJF	See P.17
Non-motor end specification	NM	See P.18
Slider roller specification	SR	See P.18

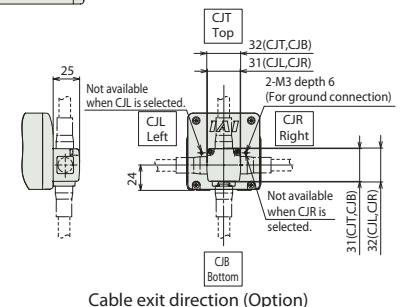
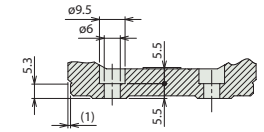
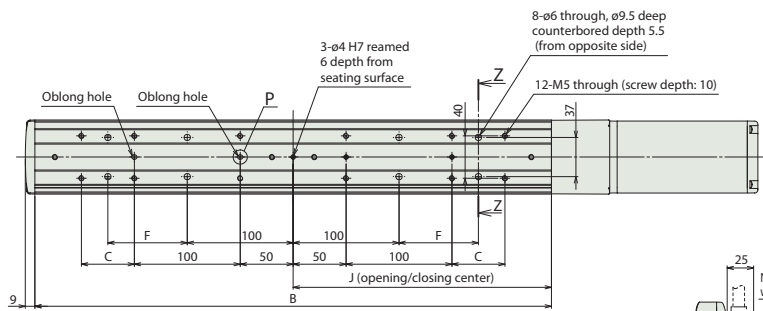
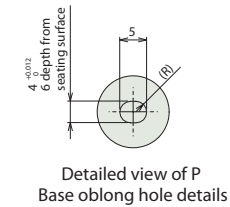
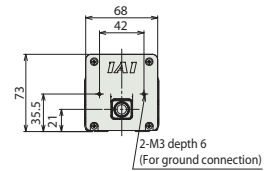
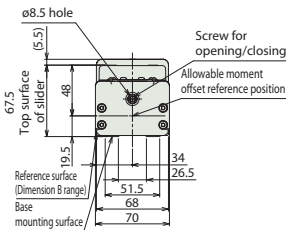
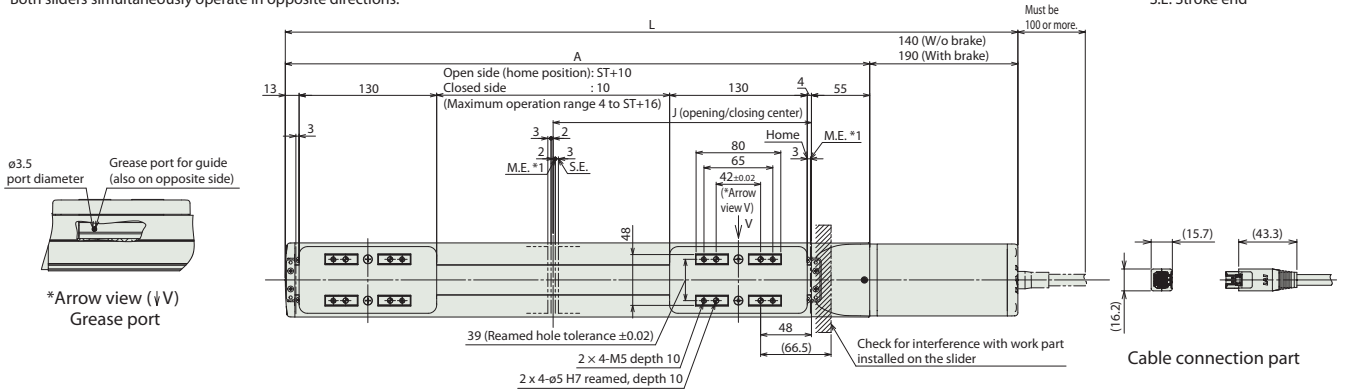
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■ RCP6-GRST7C

- *1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
- * Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



■ Dimensions by Stroke

Stroke	210	260	
L	W/o Brake	692	742
	With Brake	742	792
A	552	602	
B	488	538	
C	50	100	
F	75	100	
J	244	269	

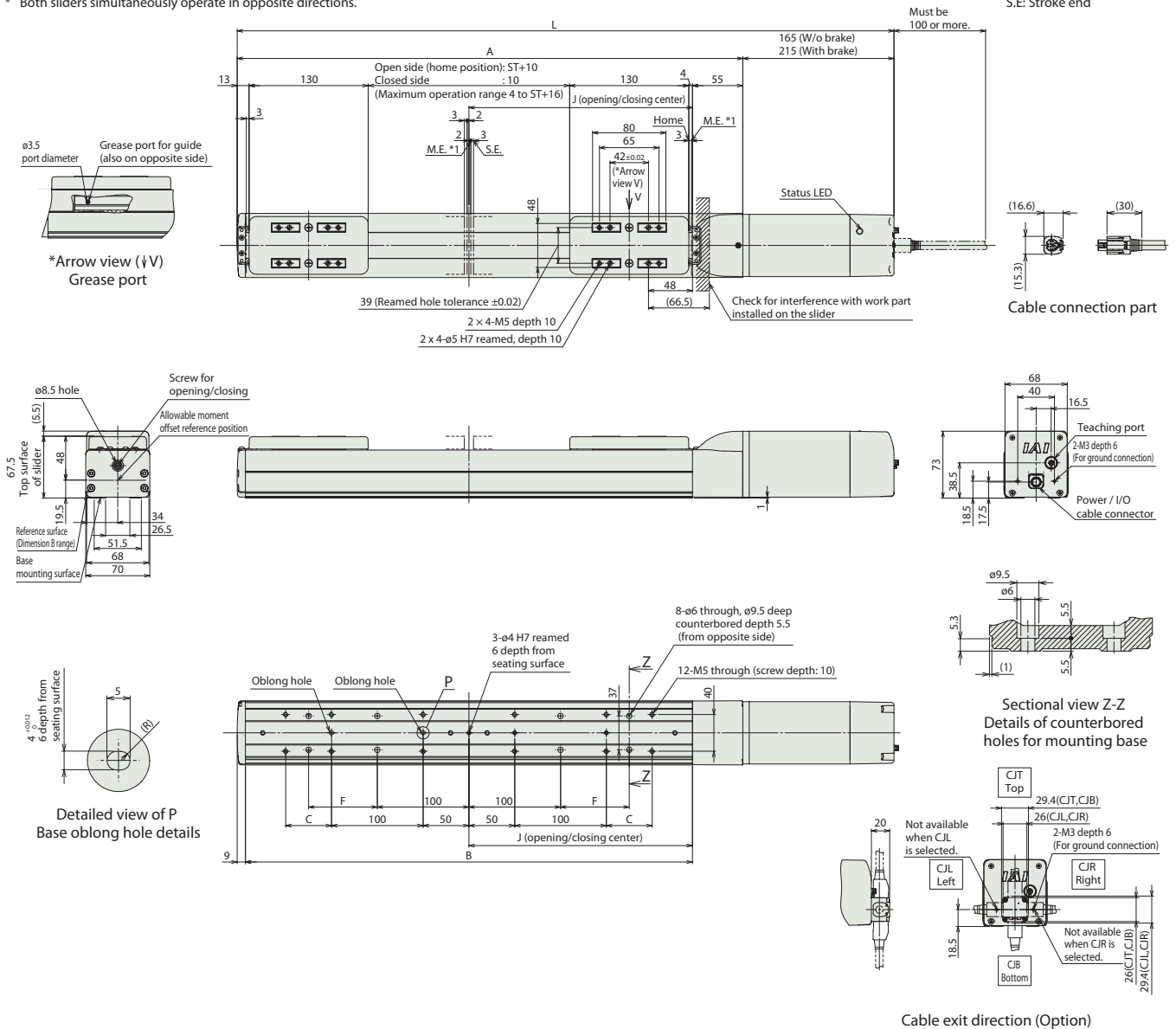
■ Mass by Stroke

Mass (kg)	RCP6	Stroke	210	260
		W/o Brake	5.4	5.6
		With Brake	5.8	6.0

■ RCP6S-GRST7C

*1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
 * Both sliders simultaneously operate in opposite directions.

ST: Stroke
 M.E: Mechanical end
 S.E: Stroke end



■ Dimensions by Stroke

Stroke		210	260
L	W/o Brake	717	767
	With Brake	767	817
A		552	602
B		488	538
C		50	100
F		75	100
J		244	269

■ Mass by Stroke

Mass (kg)	RCP6S	Stroke		
		210	260	
		W/o Brake	5.5	5.8
		With Brake	6.0	6.2

■ Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page
				Positioner	Pulse-train	Program	Network option *											
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM			
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	●	●	○	○	256	Please see the dedicated catalog or manual.
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	-	-	-		
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	-	-	●	●	●	-	-	30000		
PCON-CB/CGB		1	24VDC	●	●	-	●	●	-	○	○	●	●	-	-	512 (768 for network spec.)		
PCON-CYB/PLB/POB (Coming soon)		1		●	●	-	-	-	-	-	-	-	-	-	-	64		
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.	
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	●	-	-	●	●	-	128	Please see the RCON brochure or manual.	

* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion
 ** For the RCP6S Series with built-in controller, please contact IAI. *** Not yet available in Europe. For additional information, please ask IAI.

RCP6(S)-GRST6R

±10μm
Standard

Simple
Dustproof

Battery-
less
Absolute

2-Finger
Gripper

Slide
Type

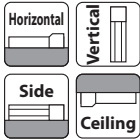
Side-mounted
Motor

Body width
58*
mm

24v
Pulse
Motor

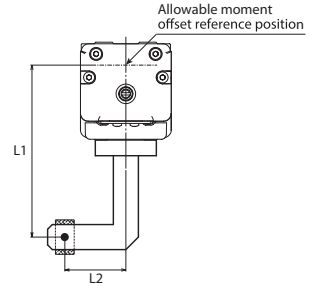
Model Specification Items	Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controllers	Cable Length	Options
	GRST6R	WA	42P						
	RCP6: Separate Controller RCP6S: Built-in Controller		WA: Battery-less Absolute	42P: Pulse Motor 42□ Size	8: 8mm 2: 2mm	180: 180mm (90mm per side) 230: 230mm (115mm per side)	P3: PCON (RCP6) MCON MSEL P5: RCM-P6PC (RCP6) (Coming soon) SE: SIO Type (RCP6S)	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable	Please refer to the options table below.

* Body width does not include the width of the side-mounted motor.



Gripping Force vs. Electric Current Limit

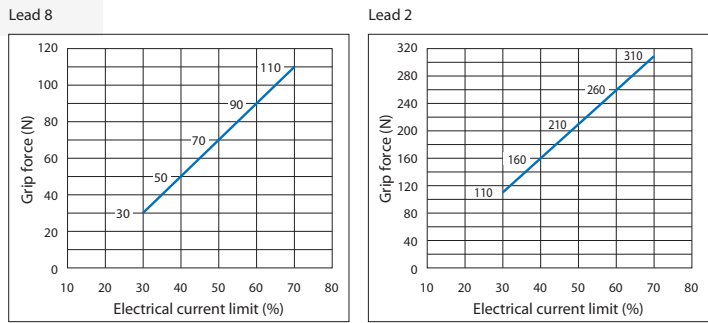
The gripping (pushing) force can be adjusted freely within the range of electric current limits of 30% to 70%.
* For L1 and L2, refer to the "Gripper selection method" on P.15.



The grip force in the graph below assumes that L1 and L2 in the figure above are zero.
Grip force is the sum of both fingers.

- POINT Selection Notes

 - (1) The maximum opening/closing speed indicates the operating speed per side. The relative operating speed is twice this value.
 - (2) The maximum grip force is the total value of both slider grip forces for the slider top surface (gripping position: 0mm, overhang amount: 0mm).
 - (3) The maximum acceleration/deceleration while moving is 0.3G.
 - (4) The fluctuation in grip force is ±25% (F.S.) (guideline).
 - (5) The guideline for the overhang load length is 300mm or less in the Ma, Mb and Mc directions.
 - (6) The self-locking function allows Lead 2 to maintain workpiece grip force even when the servo is turned off or the controller power supply is cut off. Lead 8 does not have a self-locking function.



Actuator Specifications

Item	Description	
Lead	Ball screw lead (mm)	8 2
	Max grip force (N)	110 (55 per side) 310 (155 per side)
Grip	Max speed while gripping (mm/s)	10 5
	Max speed (mm/s)	180 (per side) 45 (per side)
Speed / acceleration / deceleration	Min speed (mm/s)	10 (per side) 5 (per side)
	Max. acceleration/deceleration (G)	0.3 0.3
	Brake (option)	Brake specifications
Brake (option)	Brake retention force (kgf)	5.5 -
	Min. stroke (mm)	180 (90 per side) 180 (90 per side)
Opening/closing stroke	Max. stroke (mm)	230 (115 per side) 230 (115 per side)

Cable Length

Type	Cable code
Standard type	P(1m)
	S(3m)
	M(5m)
Specified length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
Robot cable	R01 (1m) ~ R03 (3m)
	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Please contact IAI for more information regarding the maintenance cables.

Options

Name	Option code	Reference page
Brake	B	See P.17
Cable exit direction (Outside)	CJO	See P.17
Finger attachment mounting jig	MJF	See P.17
Motor side-mounted to left (Note)	ML	See P.18

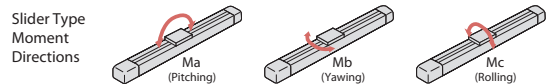
Stroke and Max. Opening/Closing Speed (Unit: mm/s)

Lead (mm)	Stroke	180 (mm)	230 (mm)
	8		180
2		45	

Actuator Specifications

Item	Description
Drive system	Left/right trapezoidal screw
Positioning repeatability	±0.01mm
Backlash	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Lost motion	Lead 8mm: 0.3mm or less per side, Lead 2mm: 0.25mm or less per side
Linear guide	Direct-acting infinite circulation type
Allowable static moment	Ma: 48N-m Mb: 69N-m Mc: 103N-m
Allowable dynamic moment (Note)	Ma: 11N-m Mb: 16N-m Mc: 24N-m
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration resistance / shock resistance	4.9m/s ² 100Hz or less
Compliant international standards	CE marking, RoHS Directive
Encoder type	Battery-less Absolute Encoder
Encoder pulse count	8192 pulse/rev

(Note) Assumes a standard rated life of 5000km. The running life will vary depending on operation and installation conditions. Please contact IAI for the running life.



Name	Option code	Reference page
Motor side-mounted to right (Note)	MR	See P.18
Non-motor end specification	NM	See P.18
Slider roller specification	SR	See P.18

(Note) Be sure to fill in one of the codes in the Model Specification Items option column.

Dimensions

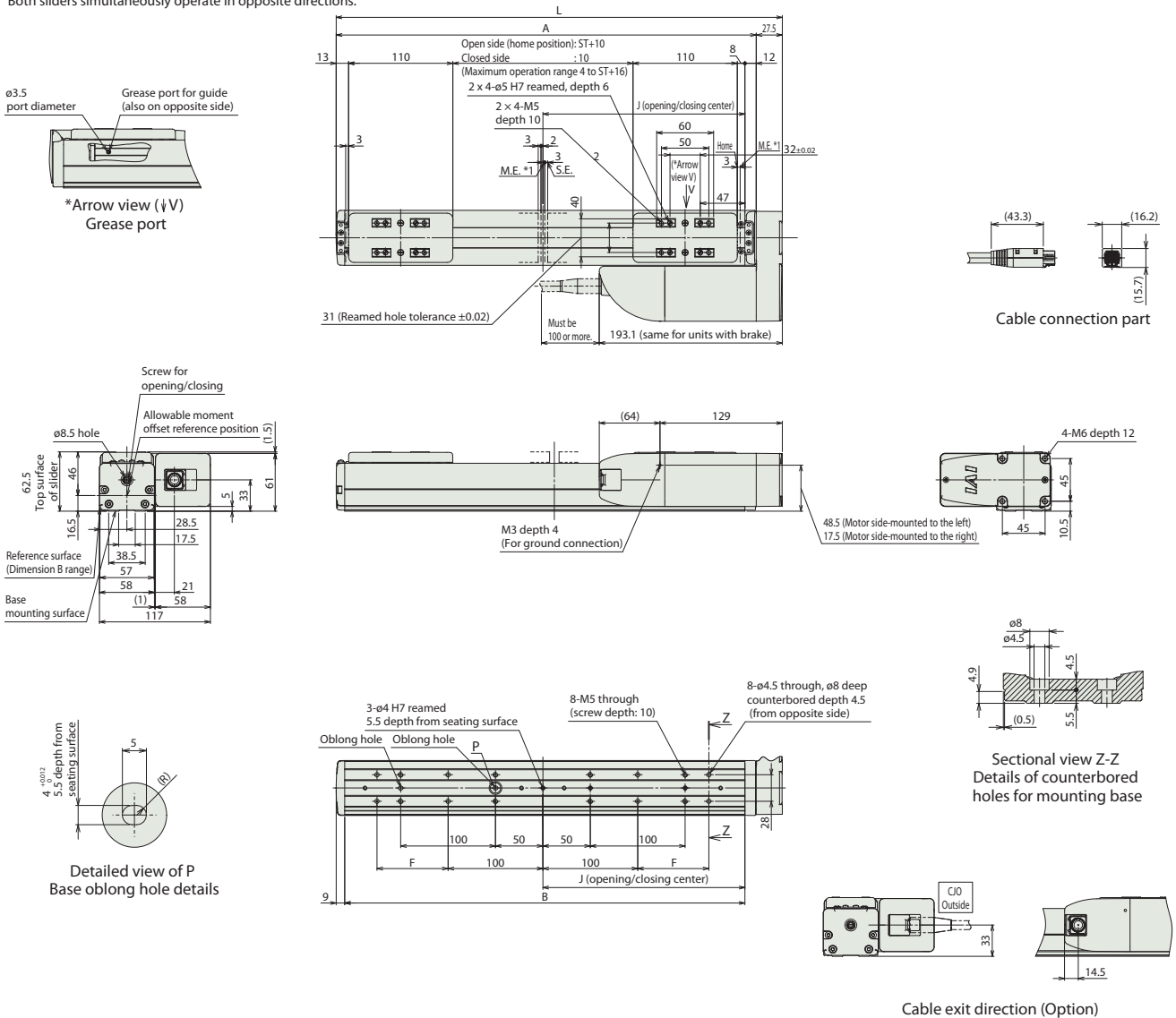
CAD drawings can be downloaded from our website.
www.robocylinder.de



■ RCP6-GRST6R

- *1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
- * When fixing the actuator using counterbored holes, first remove the motor cover and then the side cover.
- * The figure below is the motor side-mounted to left (ML).
- * Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



■ Dimensions by Stroke

Stroke		180	230
L	W/o Brake	470.5	520.5
	With Brake		
A		443	493
B		422	472
F		75	100
J		213	238

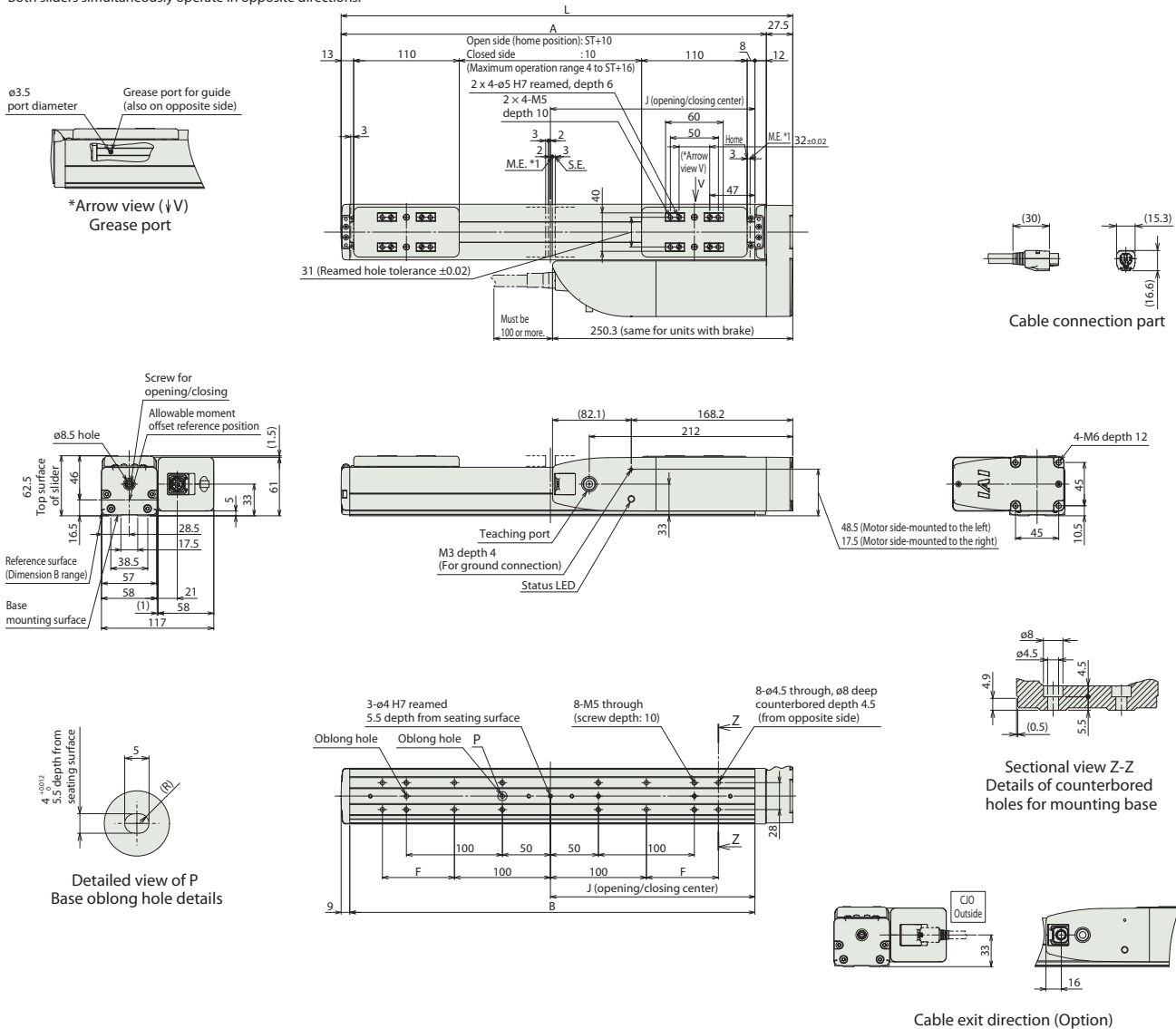
■ Mass by Stroke

		Stroke		180	230
Mass (kg)	RCP6	W/o Brake		3.5	3.6
		With Brake		3.5	3.7

RCP6S-GRST6R

- *1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
- * When fixing the actuator using counterbored holes, first remove the motor cover and then the side cover.
- * The figure below is the motor side-mounted to left (ML).
- * Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



Dimensions by Stroke

Stroke		180	230
L	W/o Brake	470.5	520.5
	With Brake		
A		443	493
B		422	472
F		75	100
J		213	238

Mass by Stroke

Stroke		180	230
Mass (kg)	W/o Brake	3.6	3.8
	With Brake	3.7	3.8

Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Max. number of connectable axes	Power supply voltage	Control method													Maximum number of positioning points	Reference page	
				Positioner	Pulse-train	Program	Network option *												
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM				
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	-	○	●	●	●	○	○	256	Please see the dedicated catalog or manual.
MCON-LC/LCG (Coming soon)		6		-	-	●	●	-	●	-	-	●	●	●	-	-	-		
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	●	-	-	●	●	●	-	-	30000		
PCON-CB/CGB		1	24VDC	●	●	-	●	●	○	○	●	●	●	-	-	-	512 (768 for network spec.)		
PCON-CYB/PLB/POB (Coming soon)		1		Option **	Option **	-	-	-	-	-	-	-	-	-	-	-	64		
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.		
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	●	-	-	●	●	●	-	-	128	Please see the RCON brochure or manual.

* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion
** For the RCP6S Series with built-in controller, please contact IAI. *** Not yet available in Europe. For additional information, please ask IAI.

RCP6(S)-GRST7R

±10μm
Standard

Simple
Dustproof

Battery-
less
Absolute

2-Finger
Gripper

Slide
Type

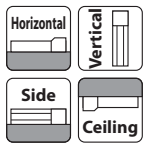
Side-mounted
Motor

Body width
70mm*

24V
Pulse
Motor

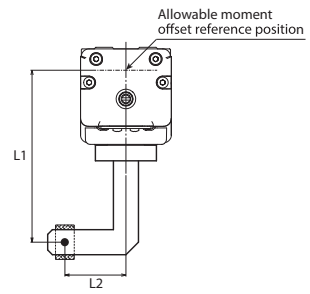
Model Specification Items	Series	Type	Encoder Type	Motor Type	Lead	Stroke	Applicable Controllers	Cable Length	Options
	GRST7R	WA	56P						
RCP6: Separate Controller RCP6S: Built-in Controller			WA: Battery-less Absolute	56P: Pulse Motor 56□ Size	8: 8mm 2: 2mm	210: 210mm (105mm per side) 260: 260mm (130mm per side)	P3: PCON (RCP6) MCON MSEL P5: RCM-P6PC (Coming soon) SE: SIO Type (RCP6S)	N: None P: 1m S: 3m M: 5m X□: Specified Length R□: Robot Cable	Please refer to the options table below.

* Body width does not include the width of the side-mounted motor.



Gripping Force vs. Electric Current Limit

The gripping (pushing) force can be adjusted freely within the range of electric current limits of 20% to 70%.
* For L1 and L2, refer to the "Gripper selection method" on P.15.

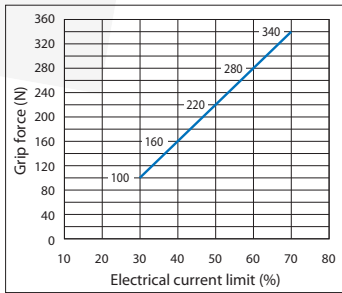


The grip force in the graph below assumes that L1 and L2 in the figure above are zero.
Grip force is the sum of both fingers.

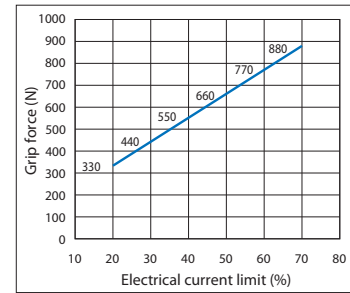
- POINT Selection Notes

 - (1) The maximum opening/closing speed indicates the operating speed per side. The relative operating speed is twice this value.
 - (2) The maximum grip force is the total value of both slider grip forces for the slider top surface (gripping position: 0mm, overhang amount: 0mm).
 - (3) The maximum acceleration/deceleration while moving is 0.3G.
 - (4) The fluctuation in grip force is ±25% (F.S.) (guideline).
 - (5) The guideline for the overhang load length is 300mm or less in the Ma, Mb and Mc directions.
 - (6) The self-locking function allows Lead 2 to maintain workpiece grip force even when the servo is turned off or the controller power supply is cut off. Lead 8 does not have a self-locking function.

Lead 8



Lead 2



Actuator Specifications

Item	Description
Lead	Ball screw lead (mm) 8 2
Grip	Max grip force (N) 340 (170 per side) 880 (440 per side)
	Max speed while gripping (mm/s) 10 5
Speed / acceleration / deceleration	Max speed (mm/s) (Note) 180 <140> (per side) 45 (per side)
	Min speed (mm/s) 10 (per side) 5 (per side)
	Max. acceleration/deceleration (G) 0.3 0.3
Brake (option)	Brake specifications Non-excitation actuated electromagnetic brake
	Brake retention force (kgf) 17 -
Opening/closing stroke	Min. stroke (mm) 210 (105 per side) 210 (105 per side)
	Max. stroke (mm) 260 (130 per side) 260 (130 per side)

(Note) Value in brackets <> is when the operating ambient temperature is 5°C or below.

Cable Length

Type	Cable code
Standard type	P(1m)
	S(3m)
	M(5m)
Specified length	X06 (6m) ~ X10 (10m)
	X11 (11m) ~ X15 (15m)
	X16 (16m) ~ X20 (20m)
	R01 (1m) ~ R03 (3m)
Robot cable	R04 (4m) ~ R05 (5m)
	R06 (6m) ~ R10 (10m)
	R11 (11m) ~ R15 (15m)
	R16 (16m) ~ R20 (20m)

* Please contact IAI for more information regarding the maintenance cables.

Options

Name	Option code	Reference page
Brake	B	See P.17
Cable exit direction (Outside)	CJO	See P.17
Finger attachment mounting jig	MJF	See P.17
Motor side-mounted to left (Note)	ML	See P.18

(Note) Be sure to fill in one of the codes in the Model Specification Items option column.

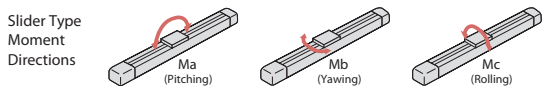
Stroke and Max. Opening/Closing Speed (Unit: mm/s)

Lead (mm)	Stroke	210 (mm)		260 (mm)
		180 <140> << When the operating ambient temperature is 5°C or below.		
8				
2		45		

Actuator Specifications

Item	Description
Drive system	Left/right trapezoidal screw
Positioning repeatability	±0.01mm
Backlash	Lead 8mm: 0.3mm or less per side
	Lead 2mm: 0.25mm or less per side
Lost motion	Lead 8mm: 0.3mm or less per side
	Lead 2mm: 0.25mm or less per side
Linear guide	Direct-acting infinite circulation type
Allowable static moment	Ma: 115N-m Mb: 115N-m Mc: 229N-m
Allowable dynamic moment (Note)	Ma: 44N-m Mb: 44N-m Mc: 89N-m
Ambient operating temp. & humidity	0 to 40°C, 85% RH or less (Non-condensing)
Degree of protection	IP20
Vibration resistance / shock resistance	4.9m/s ² 100Hz or less
Compliant international standards	CE marking, RoHS Directive
Encoder type	Battery-less Absolute Encoder
Encoder pulse count	8192 pulse/rev

(Note) Assumes a standard rated life of 5000km. The running life will vary depending on operation and installation conditions. Please contact IAI for the running life.



Name	Option code	Reference page
Motor side-mounted to right (Note)	MR	See P.18
Non-motor end specification	NM	See P.18
Slider roller specification	SR	See P.18
Slider spacer	SS	See P.18

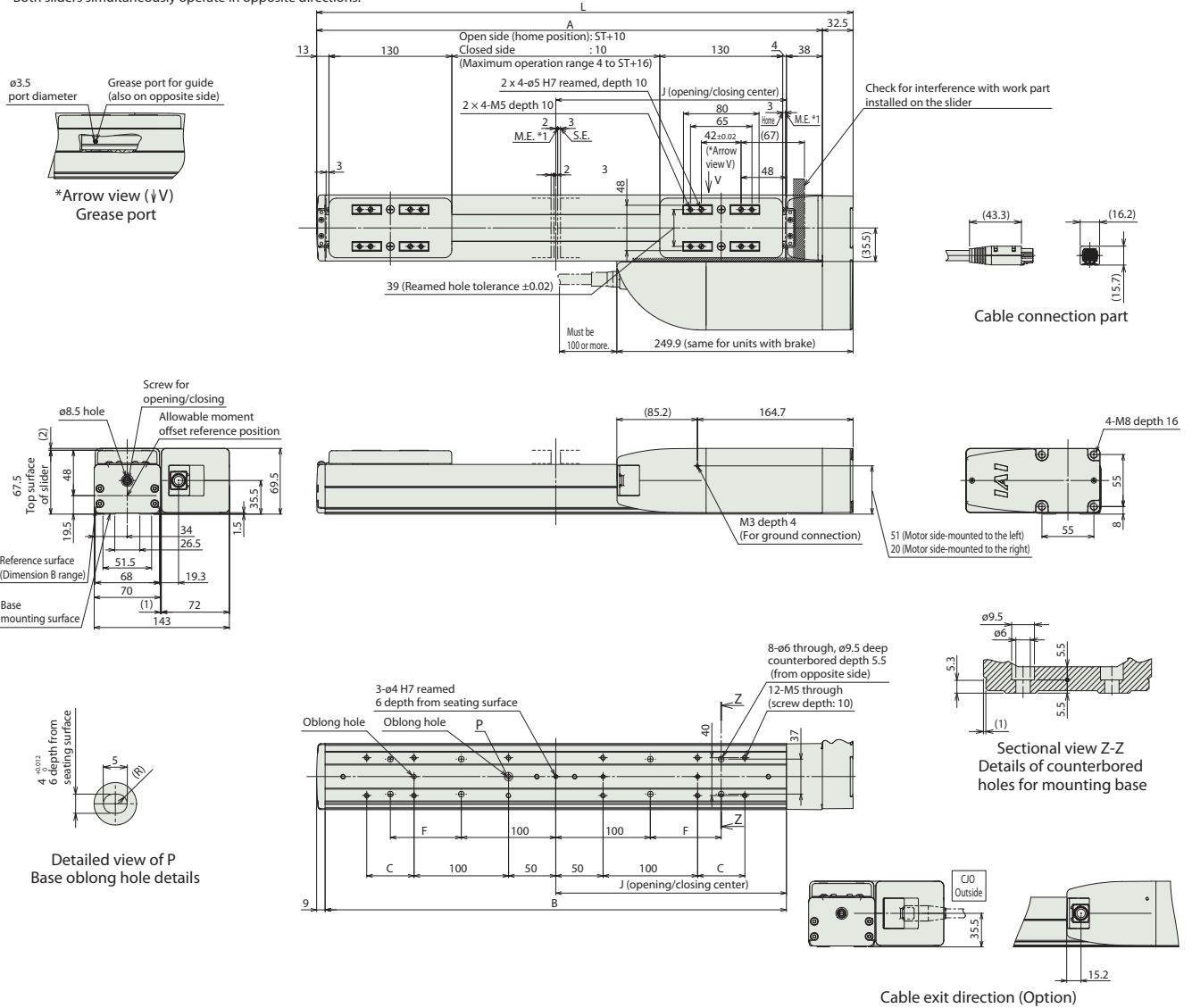
CAD drawings can be downloaded from our website.
www.robocylinder.de



RCP6-GRST7R

- *1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
- * When fixing the actuator using counterbored holes, first remove the motor cover and then the side cover.
- * The figure below is the motor side-mounted to left (ML).
- * Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



Dimensions by Stroke

Stroke		210	260
L	W/o Brake	567.5	617.5
	With Brake		
A		535	585
B		488	538
C		50	100
F		75	100
J		244	269

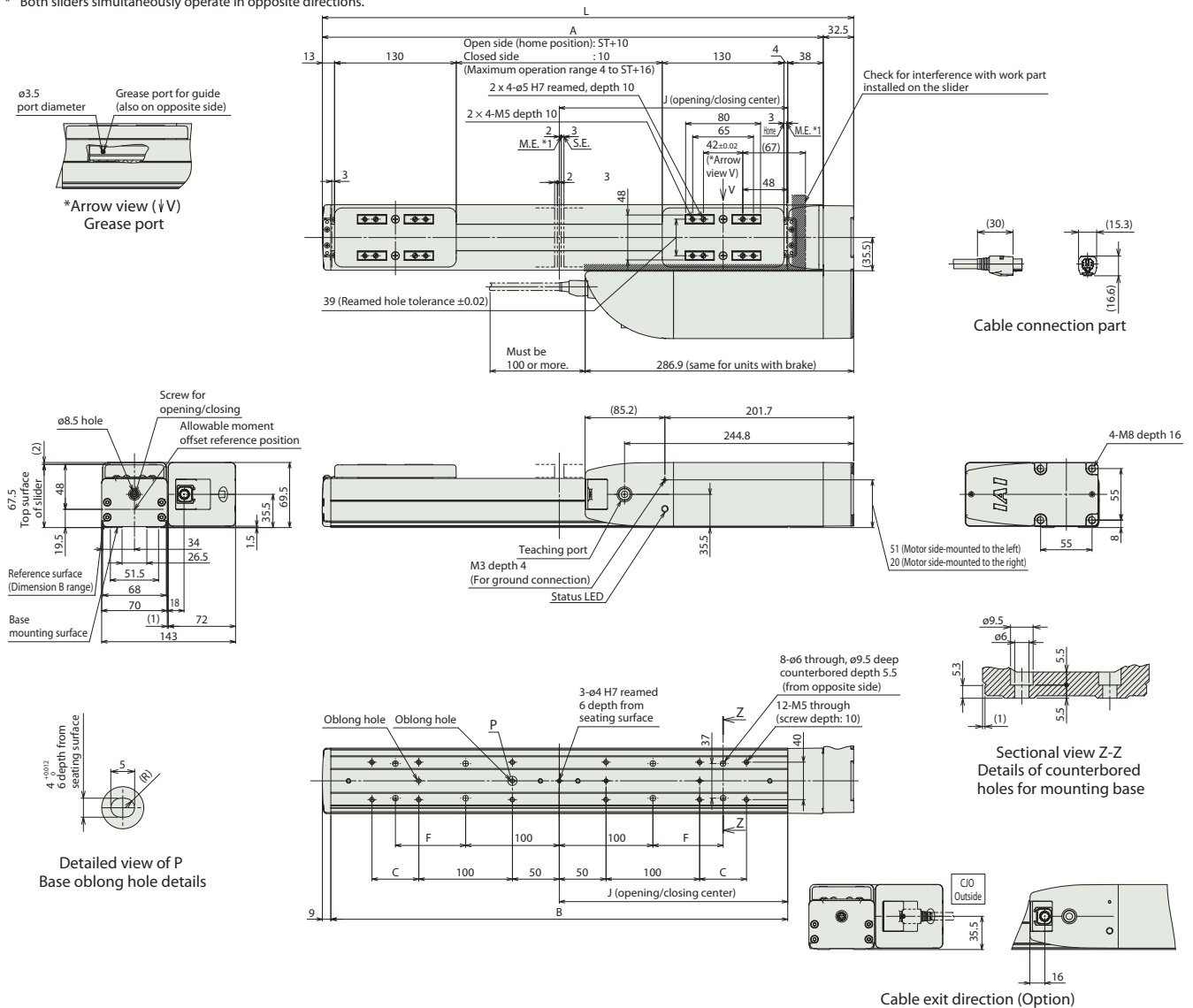
Mass by Stroke

		Stroke		210	260
Mass (kg)	RCP6	W/o Brake		6.0	6.2
		With Brake		6.1	6.3

■ RCP6S-GRST7R

- *1 When the sliders are returning to their home position, please be careful of interference from surrounding objects, as both the sliders will travel until they reach the M.E.
- * When fixing the actuator using counterbored holes, first remove the motor cover and then the side cover.
- * The figure below is the motor side-mounted to left (ML).
- * Both sliders simultaneously operate in opposite directions.

ST: Stroke
M.E: Mechanical end
S.E: Stroke end



■ Dimensions by Stroke

Stroke		210	260
L	W/o Brake	567.5	617.5
	With Brake		
A		535	585
B		488	538
C		50	100
F		75	100
J		244	269

■ Mass by Stroke

		Stroke	210	260
Mass (kg)	RCP6S	W/o Brake	6.1	6.3
		With Brake	6.2	6.4

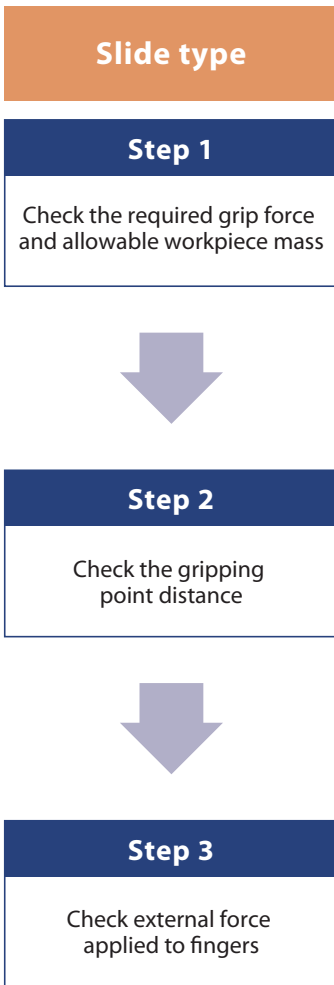
■ Applicable Controllers

The actuators on this page can be operated by the controllers indicated below. Please select the type depending on your intended use.

Name	External view	Max. number of connectable axes	Power supply voltage	Control method																Maximum number of positioning points	Reference page
				Positioner	Pulse-train	Program	Network option *														
				DV	CC	CIE	PR	CN	ML	ML3	EC	EP	PRT	SSN	ECM						
MCON-C/CG		8	24VDC	-	-	-	●	●	-	●	○	●	●	●	○	○	256	Please see the dedicated catalog or manual.			
MCON-LC/LCG (Coming soon)		6		●	●	-	●	-	-	●	●	●	-	-	-	-	256				
MSEL-PC/PG		4	Single phase 100~230VAC	-	-	●	●	-	●	-	●	●	●	-	-	30000					
PCON-CB/CGB		1	24VDC	●	●	-	●	●	○	○	●	●	-	-	-	512 (768 for network spec.)					
PCON-CYB/PLB/POB (Coming soon)		1		●	●	-	-	-	-	-	-	-	-	-	-	64					
RCM-P6PC (Coming soon)		1	Can be used within the RCP6S Gateway system.													768	Refer to the RCP6S fieldnetwork manual.				
RCON (Coming soon)		16	24VDC	-	-	-	●	●	○	●	-	-	●	●	-	128	Please see the RCON brochure or manual.				

* Network abbreviations: DV - DeviceNet | CC - CC-Link | CIE - CC-Link IE | PR - Profibus-DP | CN - CompoNet | ML - Mechatrolink | ML3 - Mechatrolink-III | EC - EtherCAT | EP - Ethernet/IP | PRT - Profinet-IO | SSN - SSCNET III/H | ECM - EtherCAT Motion
** For the RCP6S Series with built-in controller, please contact IAI. *** Not yet available in Europe. For additional information, please ask IAI.

Gripper Selection Method

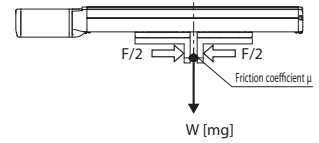


Step 1 Check the required grip force and allowable workpiece mass

When gripping the workpiece with frictional grip force, calculate the required grip force as follows.

(1) For normal transfer

F: Grip force (N) ... Total sum of push forces of both fingers.
μ: Static friction coefficient between the finger attachment and the workpiece
m: Workpiece mass (kg)
g: Gravitational acceleration (=9.8m/s²)



The conditions under which the workpiece remains statically gripped without dropping are as follows:

$$F\mu > W \quad F > \frac{mg}{\mu}$$

Assuming a recommended safety factor of 2 for normal transfer, the required gripping force is calculated as follows:

$$F > \frac{mg}{\mu} \times 2 \text{ (safety factor)}$$

When the friction coefficient is $\mu 0.1 \sim 0.2$

$$F > \frac{mg}{0.1 \sim 0.2} \times 2 = (10 \sim 20) \times mg$$

* The greater the coefficient of static friction, the greater the maximum allowable workpiece mass. However, select a model that can generate a gripping force of at least 10 to 20 times this workpiece mass to ensure safety.

For ordinary workpiece transferring

Required grip force: ▶ **10~20 times or more the workpiece mass**
 Max. allowable mass: ▶ **Not more than 1/10th to 1/20th the gripping force**

(2) When considerable acceleration, deceleration, or impact force is applied during transfer of the workpiece

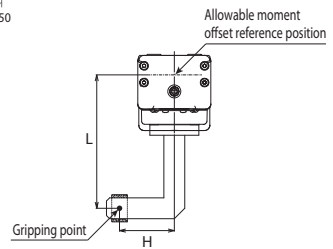
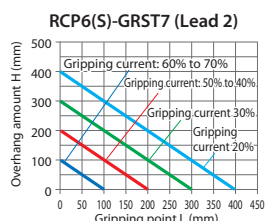
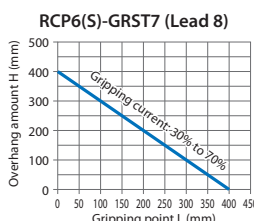
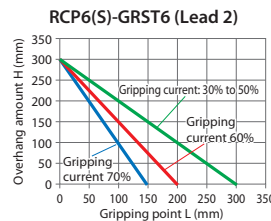
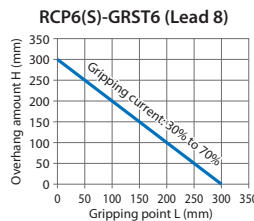
In addition to gravity, a stronger inertial force is applied to the workpiece. In this case, select a model with an even higher safety factor.

When large acceleration, deceleration, or shock is applied

Required grip force: ▶ **30~50 times or more the workpiece mass**
 Max. allowable mass: ▶ **Not more than 1/30th to 1/50th the gripping force**

Step 2 Check the distance to the gripping point

The distances (L, H) from the finger mounting surface to the gripping point have to fall in the ranges specified below. If the limits are exceeded, excessive moments may act upon the sliding part of the finger and internal mechanism and it could shorten the service life.



Even if the gripping point distance is within the limit range, keep it as small and lightweight as possible. If the fingers are long and large, or if the mass is large, inertial force and bending moment during opening and closing may worsen the performance and adversely affect the guide section.

Gripper Selection Method

Step 3 Check external force applied to fingers

(1) Allowable vertical load

Make sure that the vertical load applied to each finger is less than the allowable load.

(2) Allowable load moment

Calculate M_a and M_c using value of L_1 and L_2 . Make sure the moment applied to each finger is less than the maximum allowable load moment.

- The allowable external force when applying moment load to each claw is

$$\text{Allowable load } F(N) > \frac{M \text{ (Maximum allowable moment (N}\cdot\text{m))}}{L(\text{mm}) \times 10^{-3}}$$

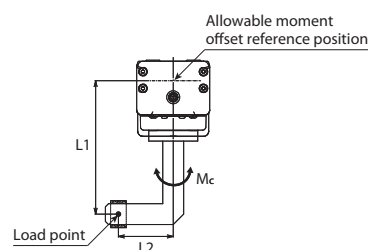
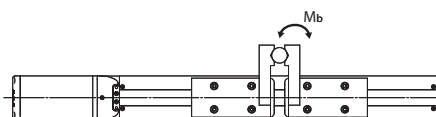
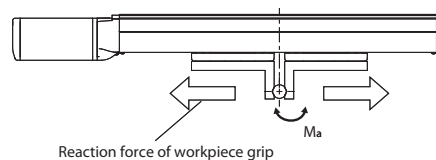
Calculate $F(N)$ using L_1 and L_2 .

Check that the external force applied to the finger is less than the calculated allowable load $F(N)$ (the smaller value of L_1 and L_2).

Model	Allowable vertical load F (N)	Maximum allowable load moment (N·m)		
		M_a	M_b	M_c
RCP6(S)-GRST6	1080	48.5	69.3	103
RCP6(S)-GRST7	1400	115	115	229

1. The allowable value above indicates a static value. 2. Indicates the allowable value per finger.

* The weight of the finger and the workpiece weight are also part of the external force. Other external forces applied to the fingers are the centrifugal force when swiveling the gripper with the workpiece gripped and the inertia force due to acceleration/deceleration during travel.



* The load point above indicates the load position on the fingers. The position varies depending on the type of load.
 · Load due to grip force: Gripping point
 · Load due to gravity: Center mass location
 · Inertial force during travel, centrifugal force during swivel: Center mass location
 The load moment is the total value calculated for each type of load.

Duty Cycle

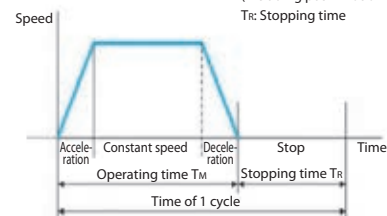
Duty cycle is the percentage of the actuator's active operation time in each cycle. Operation is possible at 100% of the duty cycle.

[Duty Cycle]

Duty cycle is the percentage of the actuator's active operation time in each cycle.

$$D = \frac{T_M}{T_M + T_R} \times 100(\%)$$

D: Duty
 T_M : Operating time
 (including push-motion operation)
 T_R : Stopping time



RCP6 Series Options

Brake

Model **B** **Applicable models** **All Models**

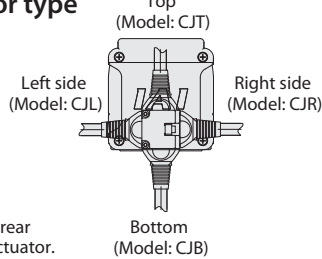
Description It prevents the slider from falling when the actuator is positioned vertically and the power or servo is turned off. However, it cannot maintain workpiece grip force equivalent to the self-locking function.
 * The Lead 2 self-locking function may cease to function due to vibration or impact.
 Select the brake option when using the unit in an environment where vibration or impact may be transmitted.

Cable exit direction

Model **CJT / CJR / CJL / CJB / CJO** **Applicable models** **All Models**

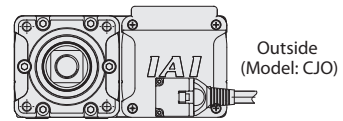
Description This option allows you to change the exit direction of the motor-encoder cable to top, bottom, left, or right.

Coupled motor type



* When seen from the rear (motor side) of the actuator.

Side-mounted motor type



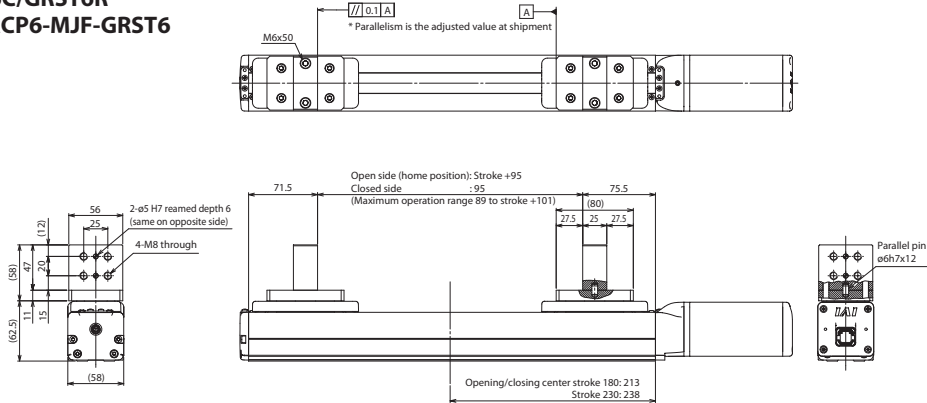
* When seen from the front of the actuator.

Finger attachment mounting jig

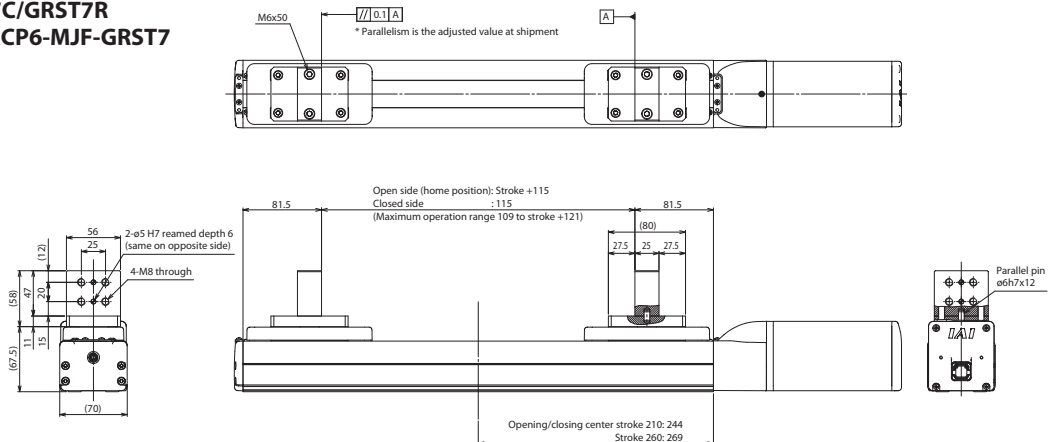
Model **MJF** **Applicable models** **All Models**

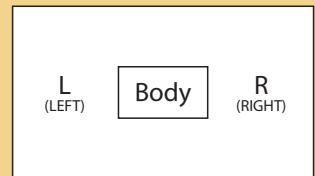
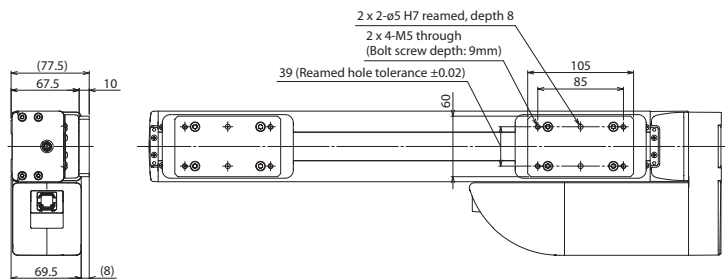
Description This is a jig for mounting the finger attachment to the slider.

RCP6(S)-GRST6C/GRST6R Model Name: RCP6-MJF-GRST6



RCP6(S)-GRST7C/GRST7R Model Name: RCP6-MJF-GRST7



Side-mounted Motor Direction**Model** ML / MR**Applicable models** RCP6(S)-GRST□R**Description** This allows you to specify the direction of the side-mounted motor type.
As viewed from the motor side of the actuator, side-mounting to left is ML and right is MR.**Non-motor end specification****Model** NM **Applicable models** All Models**Description** The standard home position is set to the open side, but this is the option to set the home position on the closed side in order to accommodate variations in equipment layout, etc. (Please note that changing the home position after the actuators are shipped may require the products to be sent back to IAI for re-setting.)**Slider roller specification****Model** SR **Applicable models** All Models**Description** Changes the slider structure of the standard specification to the same roller structure as the cleanroom specification.**Slider spacer****Model** SS **Applicable models** RCP6(S)-GRST7R**Description** This option changes the top of the slider position to be higher than the motor height.**RCP6(S)-GRST7R**
Model Name: RCP6-SS-GRST7

**RCP6 Series
Long Stroke Gripper Type
Catalogue No. 1018-E**

The information contained in this catalog
is subject to change without notice for the
purpose of product improvement



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