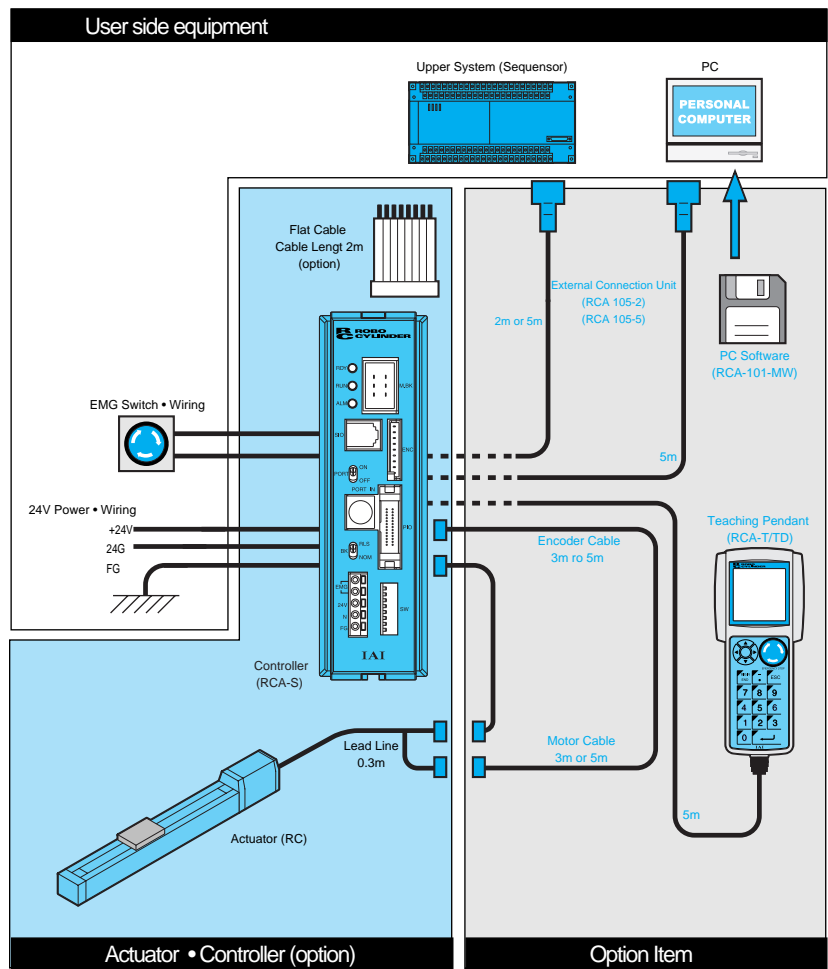
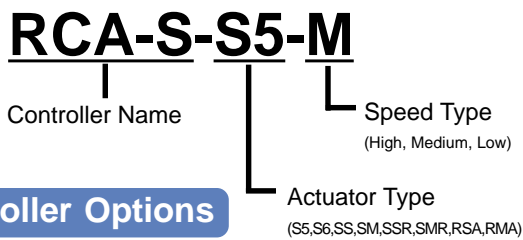


# System Components



## Controller Model Type



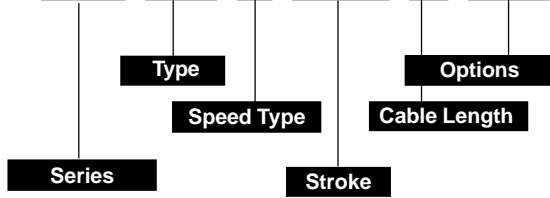
## Controller Options

Product	Model Type	Content
Teaching Pendant	RCA-T	Cable 5m
	RCA-TD	With deadman switch
PC Software (Note *1)	RCA-101-MW	Software (3 floppy disks) External Device Communication Cable Conversion Adapter
External Serial Connection Cable (Note*2)	RCA-105-2 (Cable 2m) -5 (Cable 5m)	External Device Communication Cable Conversion Adapter
Controller Serial Link Cable Length (Note *3)	C6-RCA-CTL002	Controller Connecting Cable (0.2m)
Motor Robot Cable	CB-RCA-MA000 - RB	High-Flex Motor Cable
Encoder Robot Cable	C6-RCA-PA 000 - RB	High-Flex Motor Cable

- Note 1: The RS485 conversion is attached to the PC Software Kit.
- Note 2: For the External Serial Connection Unit, cable 2m type (for PLC connection) and cable 5m type (for PC connection) are available.
- Note 3: This is for connecting serially between the Robo Cylinder controllers (0.2m).

## Actuator Model Type

# RC-S5-L-100-S-BE



## Order Example:

Series	Type	Speed Type	Stroke (mm)	Option (separate cost involved)				
				Motor • Encoder Cable (Note 1)	Brake	Flange / Foot Tool	Others	Lubricating Unit
RC	S5	L•M•H	50-400	S: 3m M: 5m X: Special (note 3)	BR • BL • BE			AQ: AQ Seal
	S6		50-600					
	SS		100-600					
	SM		100-1000					
	SSR		100-600					
	SMR		100-1000					
	RSA							
	(RSI) Note 2							
	RMA							
	(RMI) Note 2							

**Note:1**  
The motor • encoder cable length must be specified (S or M).

**Note:2**  
RSI and RMI are integrated with a controller.

**Note:3**  
Compliance up to 10m in length.  
After X, specify the length (example: for 8m cable, select X08).

**Note:4**  
For mounting details, please refer to pages 22~23.

Series	Type	Speed Type	Stroke (mm)	Option (separate cost involved)				
				Motor • Encoder Cable (Note 1)	Brake	Flange / Foot Tool	Others	Lubricating Unit
RC	S5	L • M • H	50~400	S: 3m M: 5m X: Special (note 3)	BR • BL • BE			AQ: AQ Seal
	S6		50~600					
	SS		100~600					
	SM		100~1000					
	SSR		100~600					
	SMR		100~1000					
	RSA							
	(RSI) Note 2							
	RMA							
	(RMI) Note 2							
			100~300		B: Brake	FL: Specifications with flange FT: Foot tool specifications (Note 4)	R: Motor position opposite side	

## Specifications

Specifications According to Machine Type									
Type	Slider Type (In-Line)				Slider Type ( Motor Side)		Rod Type		
	S5	S6	SS	SM	SSR	SMR	RS	RM	
Base Width	42	49	55	70	55	70	-----	-----	
Total Width (Slider) (mm)	52	56	60	80	60	80	□45	□64	
Motor Area Width (mm)	46	46	46	64	46	64	50	68	
Stroke (mm)	50 ~ 400	50 ~ 600	100 ~ 600	100 ~ 1000	100 ~ 600	100 ~ 1000	50 ~ 300	50 ~ 300	
Maximum Speed (mm/sec) (Note 1)	L	150	150	166	105	166 (150)	125 (Note 4)	133	
	M	300	300	300	333	250	300 (250)	250 (Note 4)	
	H	600	600	600	666 (600)	600	600 (500)	500 (Note 4)	
Payload (kgw) (Note 2)	Horizontal	L	8	12	30~20	55~10	30~20	55~1.5	-----
		M	8	12	30~20	50~4	20~2.5	28~4	-----
		H	4	6	30~6	40~10	20~5.5	23~1	-----
	Vertical	L	4.5	6~4	12~4	20~0.5	10~1.5	20~0.5	19~3
		M	2.5	3~2.5	8~2	12~1.5	5~0.5	9~0.5	12~1.5
		H	1	1.5~1	4~1	5~0.5	4~0.5	3~0.5	5.5~0.5
Maximum Push Power N(kgf) (Note 2)	L	-----	-----	-----	-----	-----	294 (30)	784 (80)	
	M	-----	-----	-----	-----	-----	236 (24.1)	360 (36.7)	
	H	-----	-----	-----	-----	-----	100 (10.2)	182 (18.6)	
Moment N•m (kgf•m)	Ma Mb Mc	4.9 (0.5)	8.8 (0.9)	14.7 (1.5)	36.3 (3.7)	14.7 (1.5)	36.3 (3.7)	-----	
		6.8 (0.7)	12.7 (1.3)	14.7 (1.5)	36.3 (3.7)	14.7 (1.5)	36.3 (3.7)	-----	
		11.7 (1.2)	18.6 (1.9)	33.3 (3.4)	77.4 (7.9)	33.3 (3.4)	77.4 (7.9)	-----	
Overhang Load Length (mm)	Ma Mb Mc	Under 150	Under 220	Under 300	Under 450	Under 300	Under 450	-----	
Base Material		Hardened Steel Alloy	Hardened Steel Alloy	Hardened Steel Alloy	Hardened Steel Alloy	Hardened Steel Alloy	Hardened Steel Alloy	Aluminum Extrusion	
Controller		Separate Model Type	Separate Model Type	Separate Model Type	Separate Model Type	Separate Model Type	Separate Model Type	Separate Model Type	

**Note 1:** The maximum speed may not output depending on the requirements of load and stroke. The number in the ( ) indicates the value for vertical application. The number listed in this catalog is the value when the stroke is under 600.

**Note 2:** The standard number value of payload and thrust is the value during 12.5%~100% of the maximum speed. For the rod type, the value is when the stroke is under 600.

**Note 3:** The maximum push power is the maximum sustain power during stop of the push movement.

**Note 4:** The maximum speed for the 250 stroke is H: 475mm/sec, M: 237mm/sec and L: 118mm/sec, and for the 300 stroke is H: 350mm/sec, M: 175mm/sec and L: 87mm/sec.

## Selection Method

Robo Cylinder™ Selection is based on the requirements of application, horizontal or vertical use, speed and possible payload (thrust for rod type), as indicated in the chart below, not requiring any complicated calculations.

Depending on the Application, Select Either the Slider Type or Rod Type

If Slider Type

Select Horizontal or Vertical

Select Speed Type From Cycle Time of Application

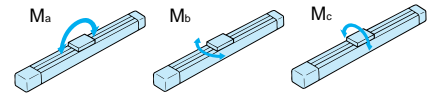
This is the Type That Satisfies Your Requirements

**Note:** (If Using the Slider Type):

When overhanging the slider mounting piece from the center, please consider the load moment and overhang load length.

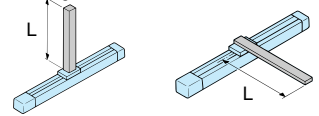
**Load Moment:**

Please Use Within Load Values of  $M_a$ ,  $M_b$  and  $M_c$ .



**Overhang load length:**

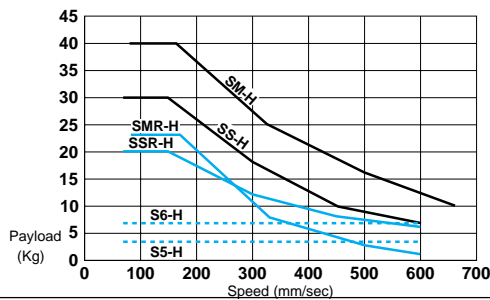
This is when the center of the gravity for the attached object is 1/2 of the overhang length. When the attached object overhangs in the direction of either  $M_a$ ,  $M_b$  and  $M_c$ , please use within this value range.



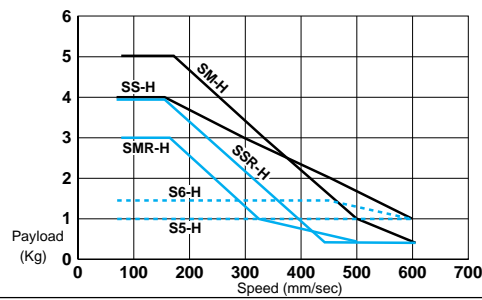
Max speed  
600 mm/sec

High Speed

Horizontal

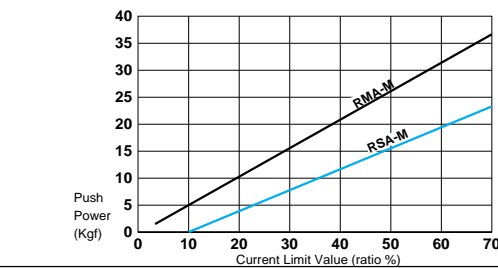
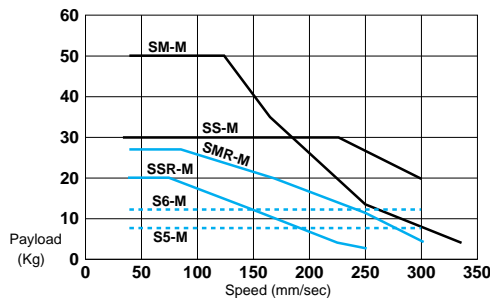


Vertical



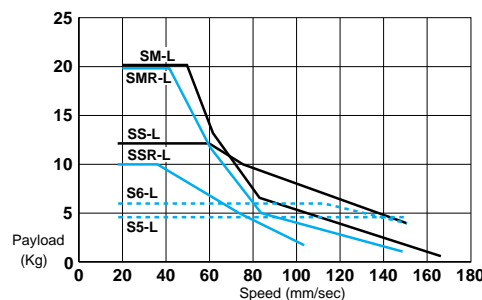
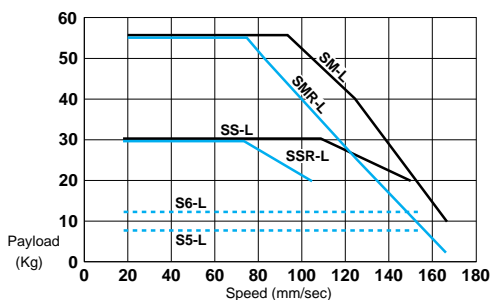
300 mm/sec

Medium Speed



150 mm/sec

Low Speed



If Rod Type

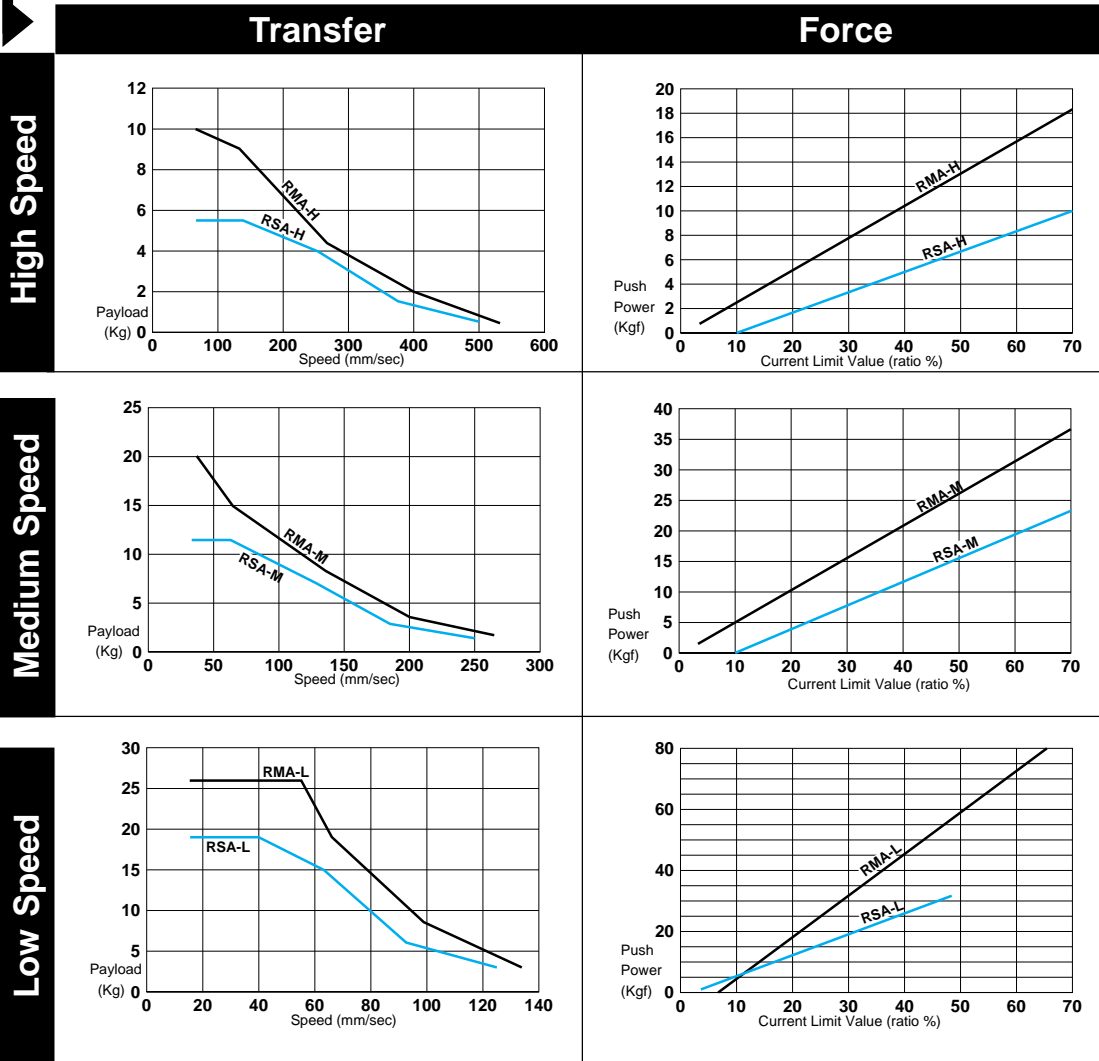
Select Either Transfer or Force

Select Speed Type From Cycle Time of Application

This is the Type That Satisfies Your Requirements

Note: As for the Rod Type, there is no consideration for external power other than the load put on from the Rod forward direction. Therefore, when an external power of vertical or rotational direction is placed against the rod, please use guide.

Max Speed  
500mm/sec



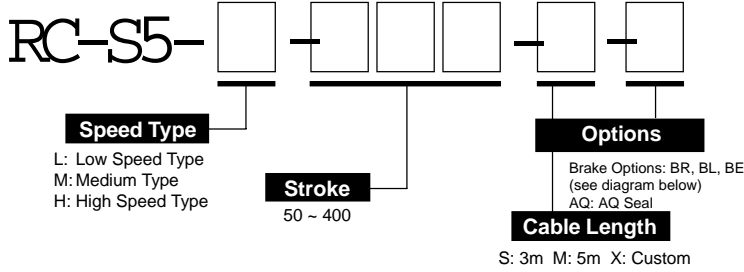
250 mm/sec

125 mm/sec

Note 1: (When using the Rod Type):  
When using other than vertically, always make sure that the thrust is under the vertical payload specifications.

# S5 TYPE

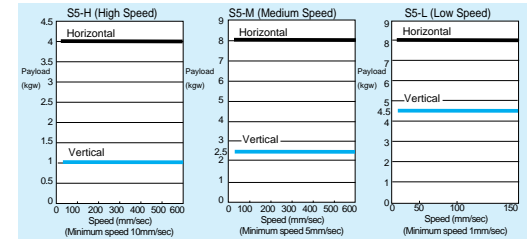
## Model Type



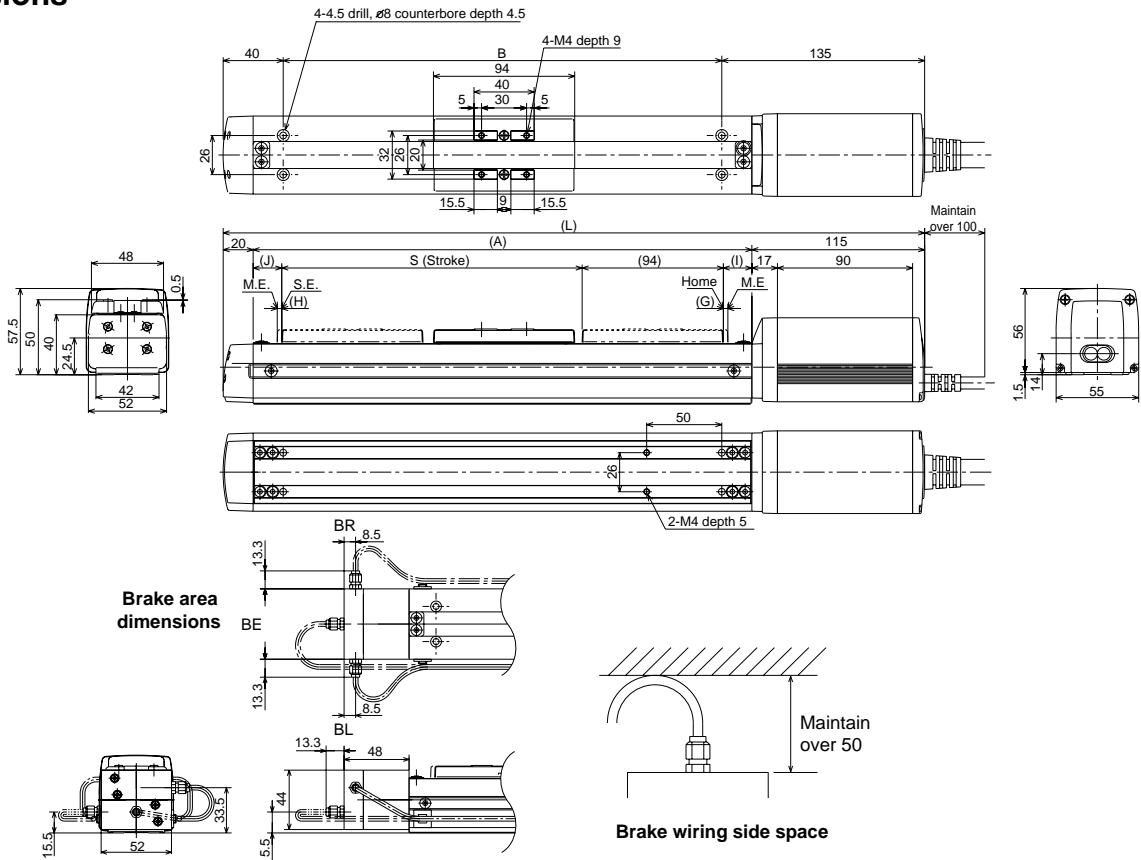
## Specifications

Stroke	50 ~ 400mm (50mm Increments)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	φ 10mm		
Guide	S5 Exclusive Single Unit		
Base	Hardened Steel Alloy		
Load Moment	Ma: 4.9N·m (0.5kgf·m)	Mb: 6.8N·m (0.7kgf·m)	Mc: 11.7N·m (1.2kgf·m)
Overhang Load Length	Ma, Mb, Mc: 150mm or less		
Weight	See Diagram		

Speed vs. Payload Diagram (when acc./dec. speed is 0.3G)



## Dimensions



	50	100	150	200	250	300	350	400
L	317	367	417	467	517	567	617	667
A	182	232	282	332	382	432	482	532
B	142	192	242	292	342	392	442	492

Dimensions according to speed type

Speed Type	G	H	I	J
L	0.75	5.25	16.75	21.25
M	1.5	4.5	17.5	20.5
H	3	3	19	19

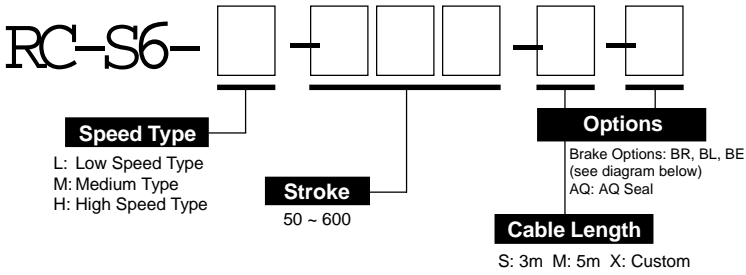
ME: Mechanical End

SE: Stroke End

( ) Indicates the Referenced Dimensions

# S6 TYPE

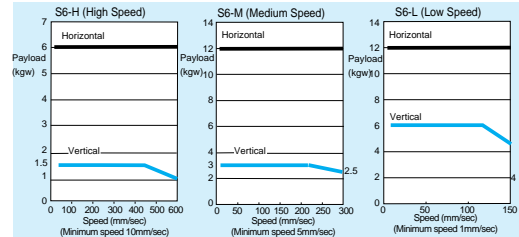
## Model Type



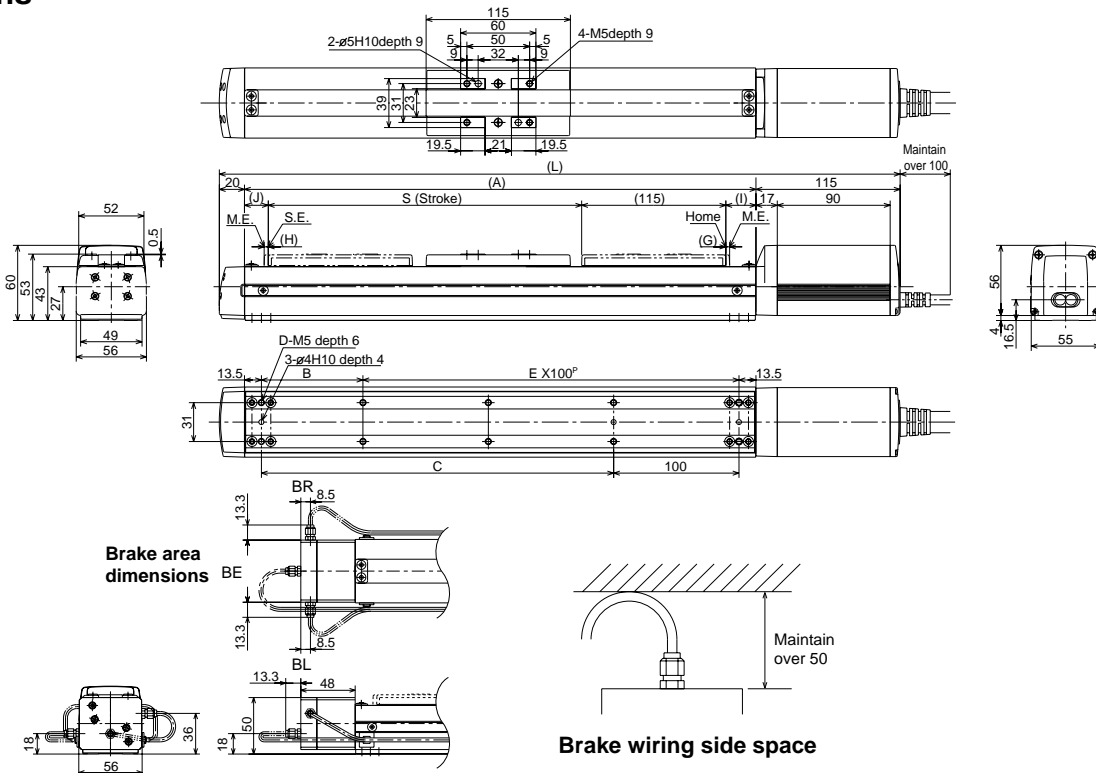
## Specifications

Stroke	50 ~ 600mm (50mm Increments)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	φ 10mm		
Guide	S6 Exclusive Single Unit		
Base	Hardened Steel Alloy		
Load Moment	Ma: 8.9N•m (0.9kgf•m)	Mb: 12.7N•m (1.3kgf•m)	Mc: 18.6N•m (1.9kgf•m)
Overhang Load Length	Ma, Mb, Mc: 220mm or less		
Weight	See Diagram		

Speed vs. Payload Diagram (when acc./dec. speed is 0.3G)



## Dimensions



Stroke	50	100	150	200	250	300	350	400	450	500	550	600
Unit Weight (kg)	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7
L	343	393	443	493	543	593	643	693	743	793	843	893
A	208	258	308	358	408	458	508	558	608	658	708	758
B	81	131	81	131	81	131	81	131	81	131	81	131
C	81	131	181	231	281	331	381	431	481	531	581	631
D	6	6	8	8	10	10	12	12	14	14	16	16
E	1	1	2	2	3	3	4	4	5	5	6	6

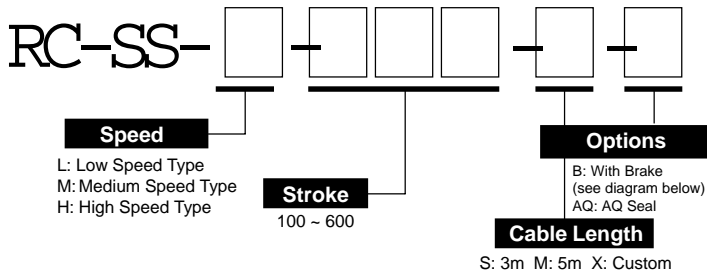
Dimensions according to speed type

Speed Type	G	H	I	J
L	0.75	5.55	21.75	21.25
M	1.5	4.8	22.5	20.5
H	3	3.3	24	19

ME: Mechanical End  
 SE: Stroke End  
 ( ) Indicates the Referenced Dimensions

# SS TYPE

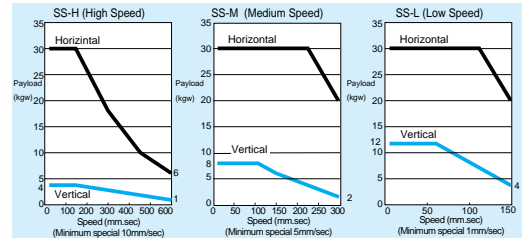
## Model Type



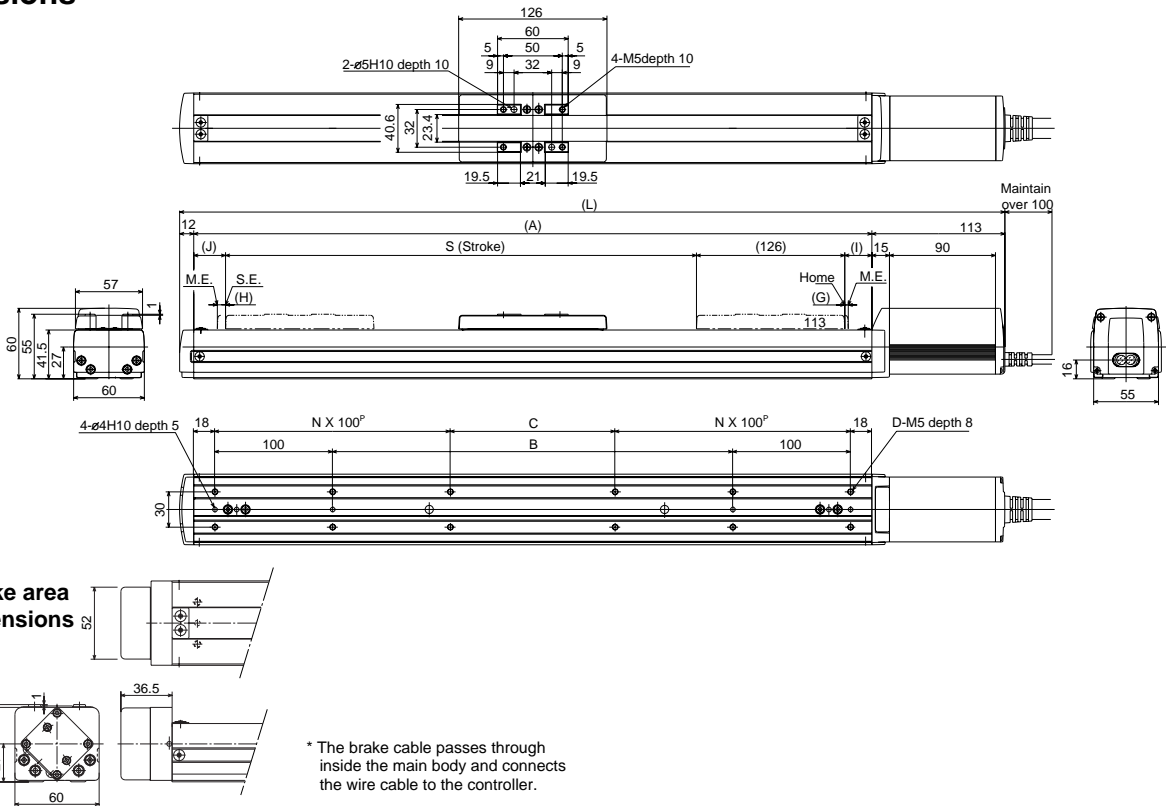
## Specifications

Stroke	100 ~ 600mm (100mm Increments)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	ϕ 10mm		
Guide	SS Exclusive Single Unit		
Base	Hardened Steel Alloy		
Moment Load	Ma: 14.7N•m (1.5kgf•m)	Mb: 14.7N•m (1.5kgf•m)	Mc: 33.3N•m (3.4kgf•m)
Overhang Load Length	Ma, Mb, Mc Direction: 300mm or less		
Weight	See diagram		

Speed vs. Payload Diagram (when the acc./dec. speed is 0.3G horizontal and 0.2G vertical)



## Dimensions



Stroke	100	200	300	400	500	600
Unit Weight (kg)	3.4	4.0	4.7	5.4	6.1	6.7
L	401	501	601	701	801	901
A	276	376	476	576	676	776
B	40	140	240	340	440	540
C	40	140	40	140	40	140
D	8	8	12	12	16	16
N	1	1	2	2	3	3

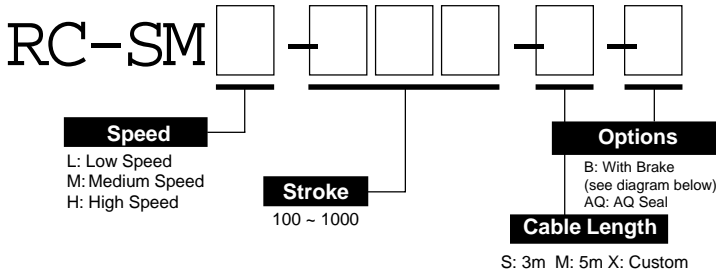
Dimensions according to speed type

Speed Type	G	H	I	J
L	0.75	9.25	20.75	29.25
M	1.5	8.5	21.5	28.5
H	3	7	23	27

ME: Mechanical End  
 SE: Stroke End  
 ( ) Indicates the Referenced Dimensions

# SM TYPE

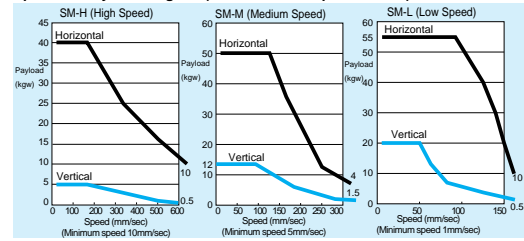
## Model Type



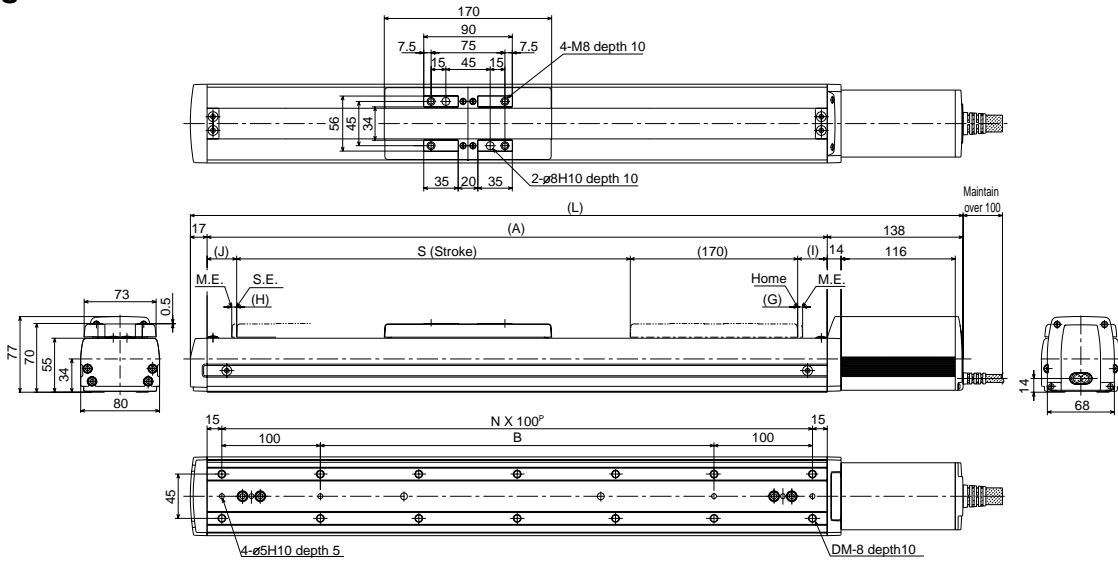
## Specifications

Stroke	100 ~ 1000mm (100mm Increments)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	ϕ 16mm		
Guide	SM Exclusive Single Unit		
Base	Hardened Steel Alloy		
Moment Load	Ma: 36.3N•m (3.7kgf•m)	Mb: 36.3N•m (3.7kgf•m)	Mc: 77.4N•m (7.9kgf•m)
Overhang Load Length	Ma, Mb, Mc Direction: 450mm or less		
Weight	See diagram		

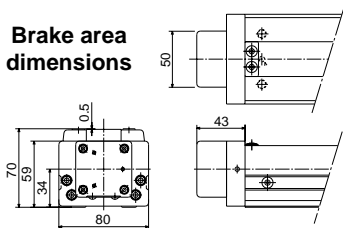
Speed vs. Payload Diagram (when acc./dec. speed is 0.2G)



## Dimensions



### Brake area dimensions



\* The brake cable passes through inside the main body and connects the wire cable to the controller.

Stroke	100	200	300	400	500	600	700	800	900	1000
Unit Weight (kg)	7.1	8.1	9.2	10.2	11.3	12.3	13.4	14.5	15.5	16.6
L	485	585	685	785	885	985	1085	1185	1285	1385
A	330	430	530	630	730	830	930	1030	1130	1230
B	100	200	300	400	500	600	700	800	900	1000
D	8	10	12	14	16	18	20	22	24	26
N	3	4	5	6	7	8	9	10	11	12

Dimensions according to speed type

Speed Type	G	H	I	J
L	1.25	8.75	26.25	33.75
M	1.5	7.5	27.5	32.5
H	5	5	30	30

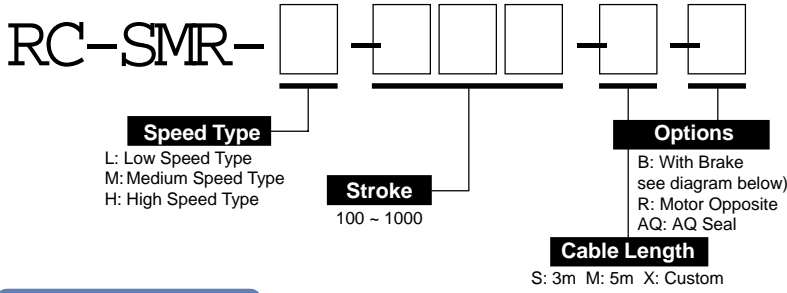
ME: Mechanical End

SE: Stroke End

( ) Indicates the Referenced Dimensions

# SMR TYPE

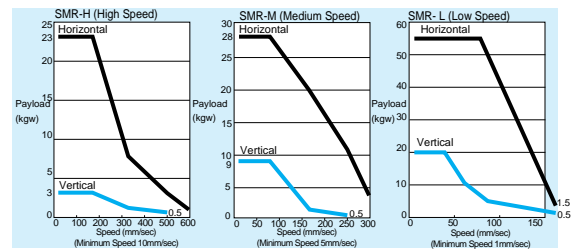
## Model Type



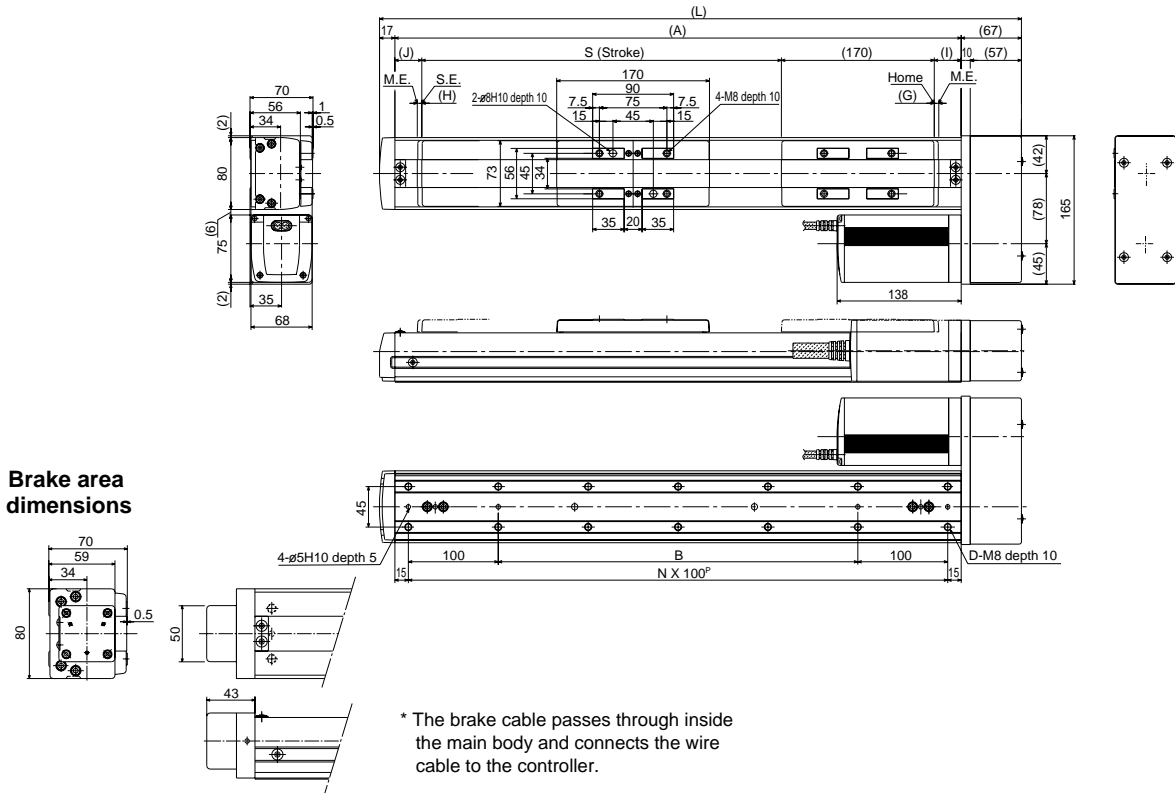
## Specifications

Stroke	100 ~ 1000mm (100mm Pitch)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	φ 16mm		
Guide	SM Exclusive Single Unit		
Base	Hardened Steel Alloy		
Moment Load	Ma: 36.3N•m (3.7kgf•m)	Mb: 36.3N•m (3.7kgf•m)	Mc: 77.4N•m (7.9kgf•m)
Overhang Load Length	Ma, Mb, Mc: 450mm or less		
Weight	See Diagram Below		

Speed and Payload Diagram (when acc./dec. is 0.3G horizontal and 0.2G Vertical)



## Dimensions



Stroke	100	200	300	400	500	600	700	800	900	1000
Unit Weight (kg)	7.9	9.0	10	11.1	12.1	13.2	14.3	15.3	16.4	17.4
L	414	514	614	714	814	914	1014	1114	1214	1314
A	330	430	530	630	730	830	930	1030	1130	1230
B	100	200	300	400	500	600	700	800	900	1000
D	8	10	12	14	16	18	20	22	24	26
N	3	4	5	6	7	8	9	10	11	12

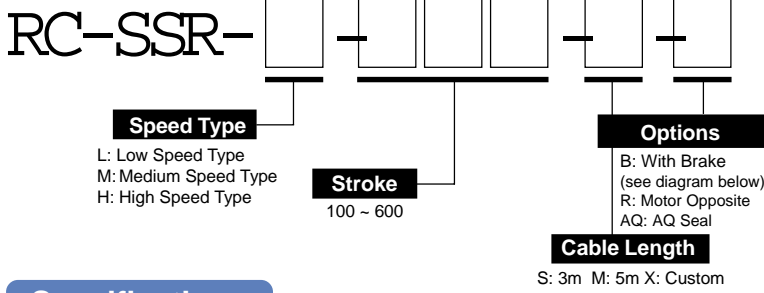
Dimensions may change depending on speed type

Speed Type	G	H	I	J
L	1.25	8.75	26.25	33.75
M	2.5	7.5	27.5	32.5
H	5	5	30	30

ME: Mechanical End  
SE: Stroke End  
( ) Indicates the Referenced Dimensions

# SSR TYPE

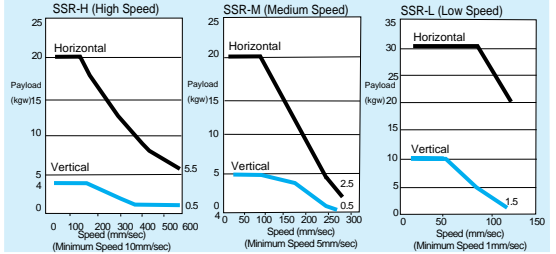
## Model Type



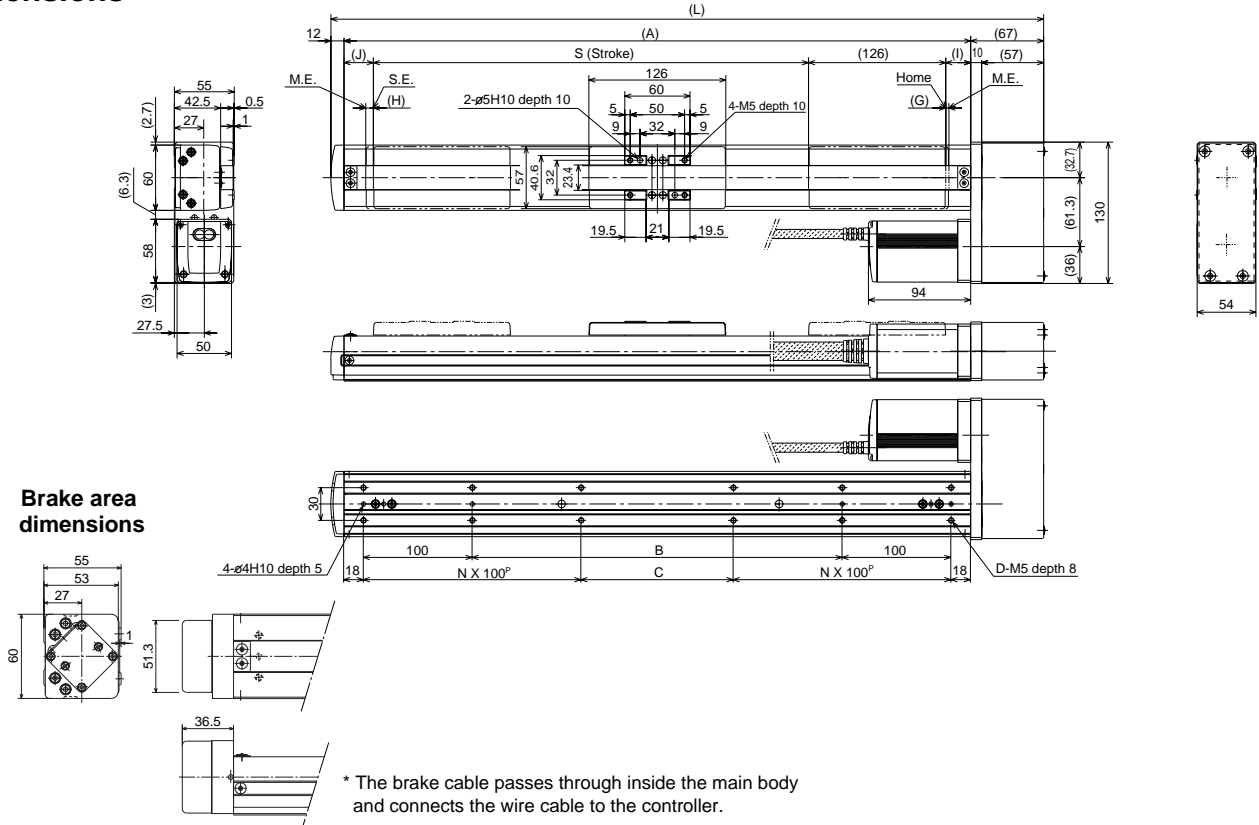
## Specifications

Stroke	100 ~ 600mm (100mm Pitch)		
Motor	AC Servo Motor (Encoder Single Unit)		
Ballscrew	φ 10mm		
Guide	SS Exclusive Single Unit		
Base	Hardened Steel Alloy		
Moment Load	Ma: 14.7N•m (1.5kgf•m)	Mb: 14.7N•m (1.5kgf•m)	Mc: 33.3N•m (3.4kgf•m)
Overhang Load Length	Ma, Mb, Mc: 300mm or less		
Weight	See Diagram Below		

Speed vs. Payload Diagram (when acc./dec. is 0.3G horizontal and 0.2G vertical)



## Dimensions



Stroke	100	200	300	400	500	600
Unit Weight (kg)	4.1	4.7	5.4	6.1	6.7	7.4
L	355	455	555	655	755	855
A	276	376	476	576	676	776
B	40	140	240	340	440	540
C	40	140	40	140	40	140
D	8	8	12	12	16	16
N	1	1	2	2	3	3

Dimensions may change depending on speed type

Speed Type	G	H	I	J
L	0.75	9.25	20.75	29.25
M	1.5	8.5	21.5	28.5
H	3	7	23	27

ME: Mechanical End  
 SE: Stroke End  
 ( ) Indicates the Referenced Dimensions

# RSA<sup>TYPE</sup>

## RC-RSA-

**Model Type**

**Speed Type**

L: Low Speed Type  
M: Medium Speed Type  
H: High Speed Type

**Stroke**  
50 ~ 300

**Options**

B: With Brake (see diagram below)  
FL: With Flange (see Page 23)  
FT: With Foot Tool (see Page 23)  
AQ: AQ Seal

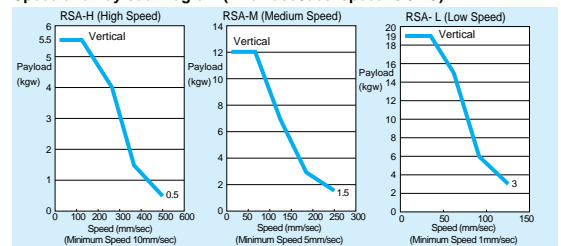
## Specifications

**Cable Length**

S: 3m M: 5m X: Special

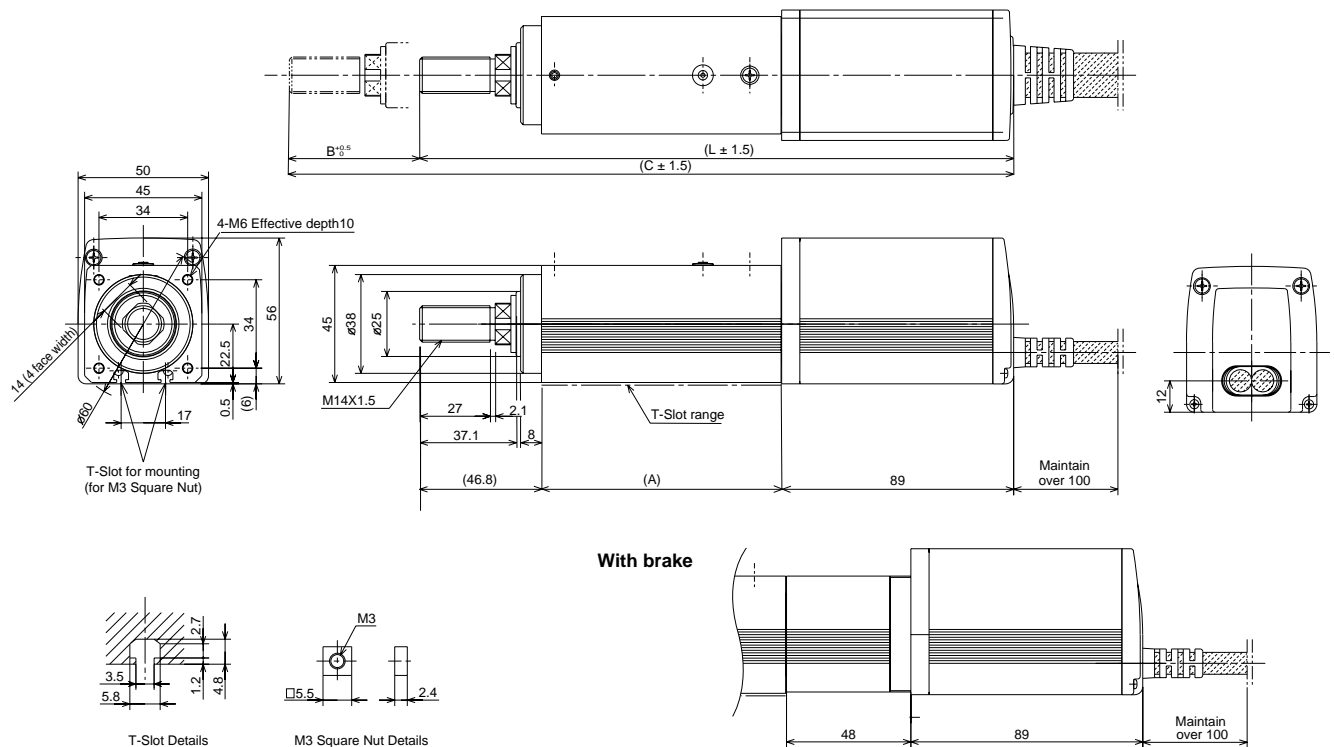
Stroke	50 ~ 300mm (50mm Increments)
Motor	AC Servo Motor (Encoder Single Unit)
Ballscrew	φ 8mm
Base	Aluminum Extruded Material White Color Alumite Treatment
Rod Diameter	φ 25mm
Rod Tip Screw Diameter	M14 Pitch 1.5
Weight	See Diagram
Attachment	M3 Square Head Nut (4 pieces) +M18 Hexagonal Nut (1 piece)

**Speed and Payload Diagram (when acc./dec. speed is 0.2G)**



Note: As for the Rod Type, there is no consideration for external power other than the load put on from the Rod forward direction. Therefore, when an external power of vertical or rotational direction is placed against the rod, please use guide.

## Dimensions



Stroke	50	100	150	200	250	300
Unit Weight (kg)	1.6	1.9	2.2	2.5	2.7	3.0
L	246	296	346	396	446	496
A	110.2	160.2	210.2	260.2	310.2	360.2
B	50	100	150	200	250	300
C	296	379	479	576	696	796

\*Includes Brake

Stroke	50	100	150	200	250	300
Unit Weight (kg)	2.1	2.4	2.7	3.0	3.2	3.5
L	294	344	394	444	494	544
A	110.2	160.2	210.2	260.2	310.2	360.2
B	50	100	150	200	250	300
C	327	444	527	644	744	844

# RMA<sup>TYPE</sup>

## Model Type

RC-RMA- [ ] - [ ] [ ] [ ] - [ ] - [ ]

**Speed Type**  
 L: Low Speed Type  
 M: Medium Speed Type  
 H: High Speed Type

**Stroke**  
 50 ~ 300

**Options**  
 B: With Brake (see diagram below)  
 R: With Flange (see Page 23)  
 FT: With Foot Tool (see Page 23)  
 AQ: AQ Seal

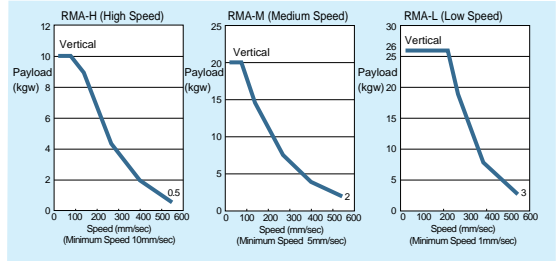
## Specifications

**Cable Length**  
 S: 3m M: 5m X: Custom

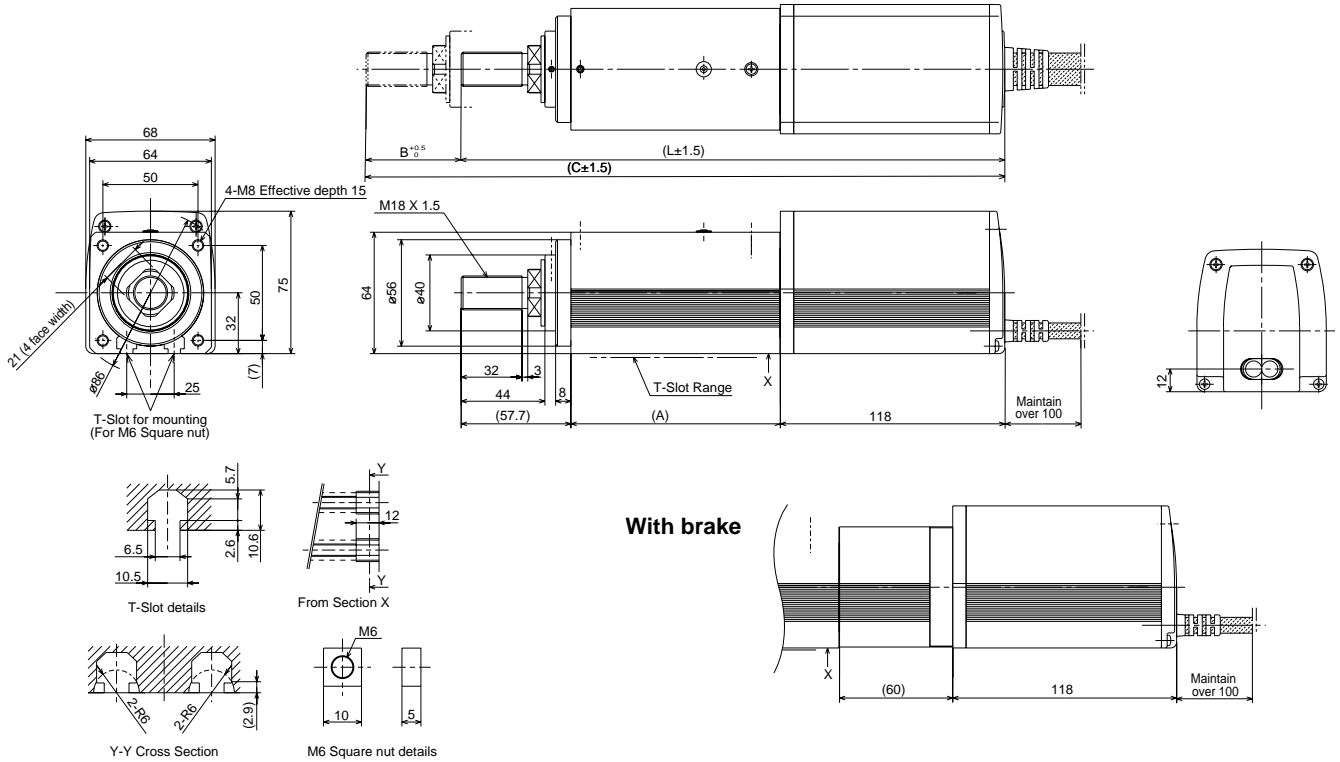
Stroke	50 ~ 300mm (50mm Incremnets)
Motor	AC Servo Motor (Encoder Single Unit)
Ballscrew	φ 12mm
Base	Aluminum Extruded Material White Color Alumite Treatment
Rod Diameter	φ 40mm
Rod Tip Screw Diameter	M18 Pitch 1.5
Weight	See Diagram
Attachment	M6 Square Head Nut (4 pieces) + M18 Hegagonal Nut (1 piece)

Note: As for the Rod Type, there is no consideration for external power other than the load put on from the Rod forward direction. Therefore, when an external power of vertical or rotational direction is placed against the rod, please use guide.

Speed vs. Payload Diagram (when acc./dec. speed is 0.2G)



## Dimensions



Stroke	50	100	150	200	250	300
Unit Weight (kg)	3.5	4.2	5.0	5.7	6.4	7.1
L	308	358	408	458	508	558
A	132.3	182.3	232.3	282.3	332.3	382.3
B	50	100	150	200	250	300
C	358	458	558	658	758	858

\*Includes Brake

Stroke	50	100	150	200	250	300
Unit Weight (kg)	4.3	5.0	5.8	6.5	7.2	7.9
L	368	418	468	518	568	618
A	132.3	182.3	232.3	282.3	332.3	382.3
B	50	100	150	200	250	300
C	418	518	618	718	818	918

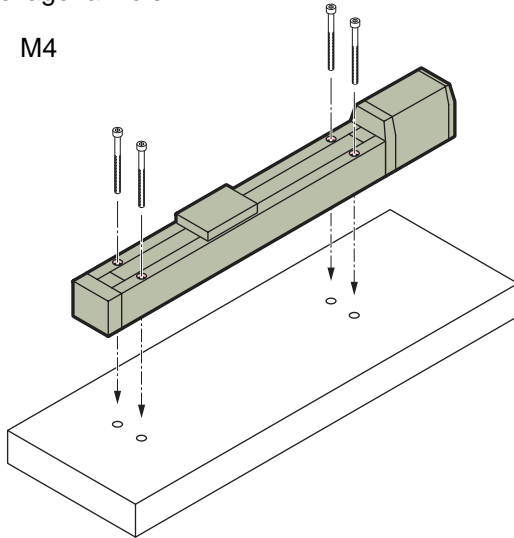
# Mounting Method

## Slider Type

### S5

Attached from the front side using bolts with hexagonal hole.

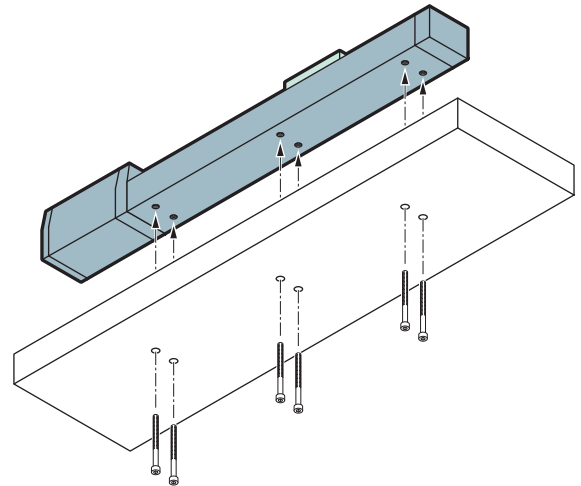
- RC-S5: M4



### S6, SS, SM

Attached from the back side using bolts.

- RC-S6 Screw hole specifications: M5 Depth 6
- RC-SS Screw hole specifications: M5 Depth 8
- RC-SM Screw hole specifications: M8 Depth 10

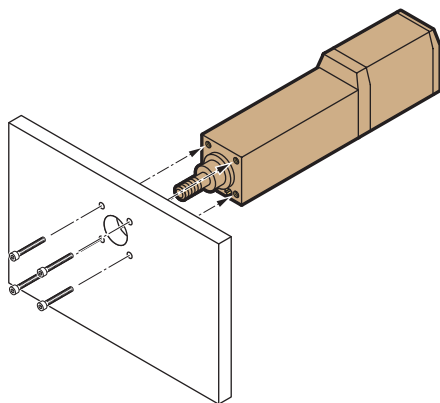


## Rod Type

### Standard Type

Attached from the Rod side using screw holes.

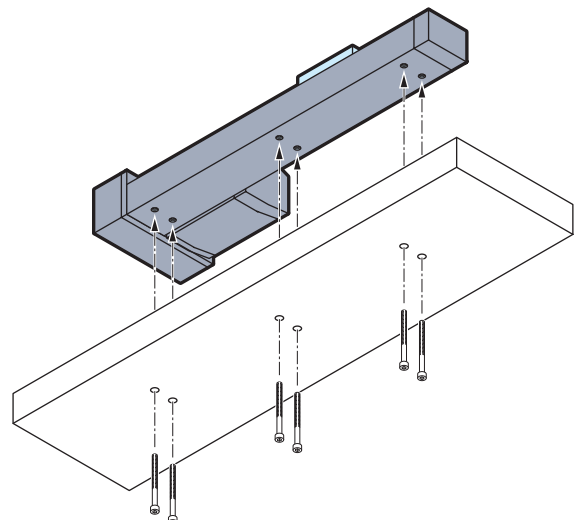
- RC-RS Screw hole specifications: M6 depth 10
- RC-RM Screw hole specifications: M8 depth 12



### SSR, SMR

Attached from the back side using bolts.

- RC-SSR Screw hole specifications: M5 Depth 8
- RC-SMR Screw hole specifications: M8 Depth 10

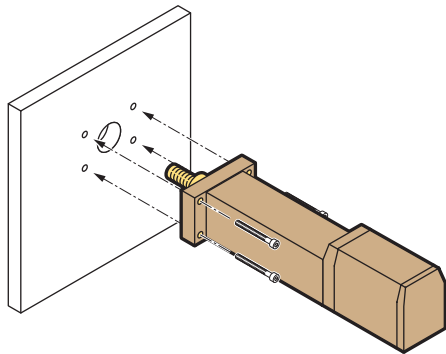


## Flange Specifications

(FL Option)

Attached from the Main body side using bolts.

- RC-RS: M5
- RC-RM: M6

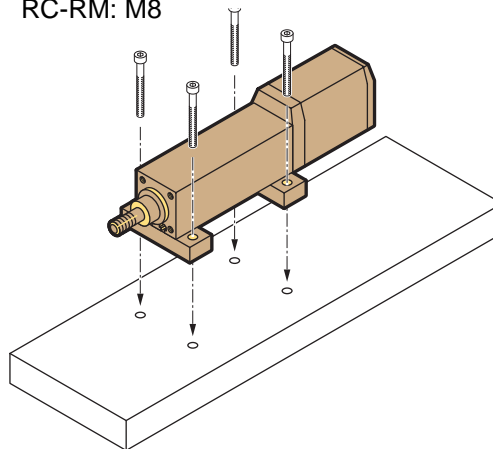


## Foot Tool Specifications

(FT Option)

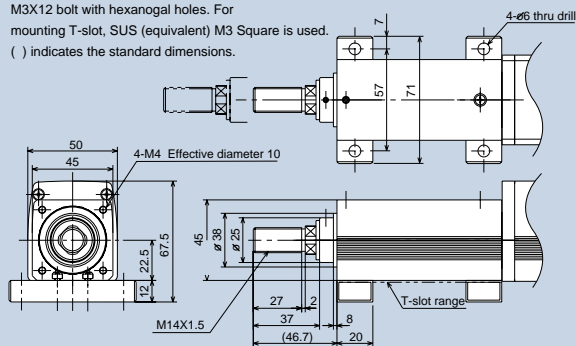
Attached from the Upper side using bolts.

- RC-RS: M6
- RC-RM: M8



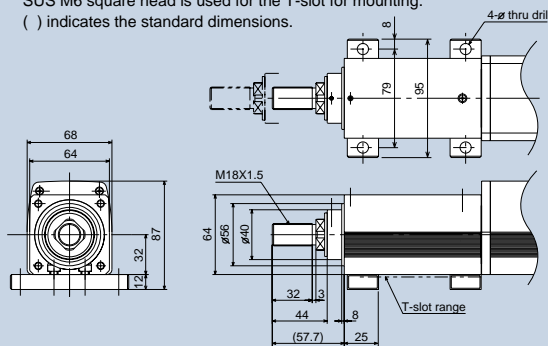
### With RS Foot Tool

The bolt used for mounting the foot tool is M3X12 bolt with hexagonal holes. For mounting T-slot, SUS (equivalent) M3 Square is used. ( ) indicates the standard dimensions.



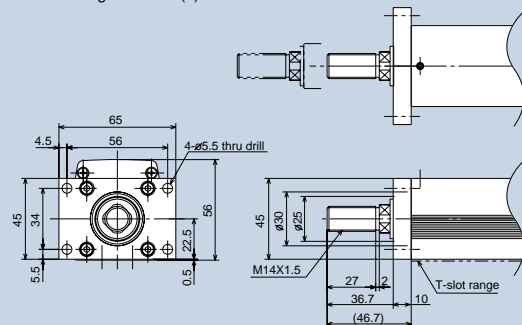
### With RM Foot Tool

The bolt used for mounting the foot tool is M6X15 bolt with hexagonal hole. SUS M6 square head is used for the T-slot for mounting. ( ) indicates the standard dimensions.



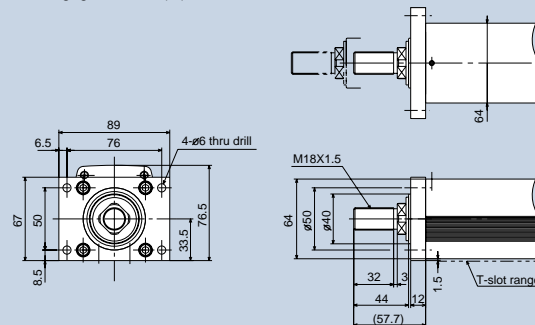
### With RS Flange

The bolt used to mount the flange on to the main body is M4X12 bolt with hexagonal hole. ( ) indicates the standard dimensions.



### With RM Flange

The bolt used to mount the flange on to the main body is M6X15 bolt with hexagonal hole. ( ) indicates the standard dimensions.



# Controller

## Model Type

RCA-S-S5

### Robo Cylinder Body Type

S5, S6, SS, SM,  
SSR, SMR, RSA, RMA,  
RSA, RMA

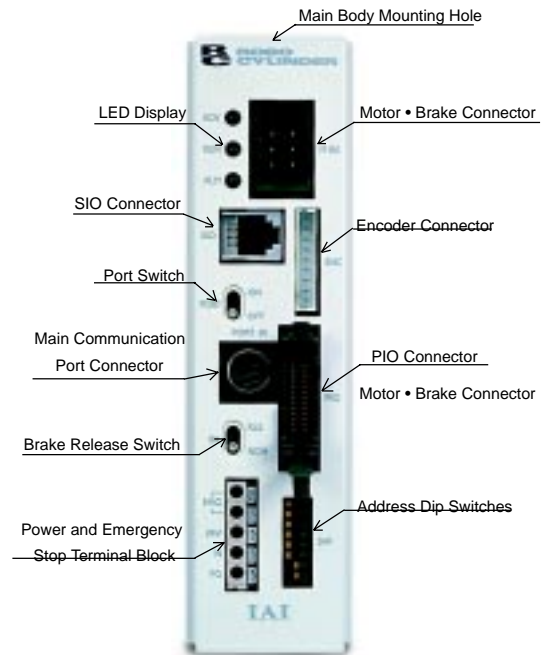
## Features

- Easy operation by simply assigning a position number from a PLC, then move.
- Up to 16 different positions may be assigned.
- Parallel I/O and Serial I/O are standard equipment.
- Link up to 16 units serially.
- Power supply is simply 24VDC.

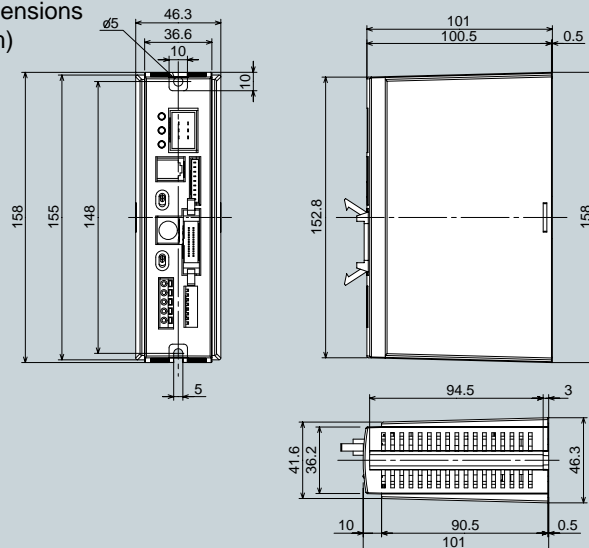
## Specifications

Item	Description
Power Voltage	DC 24V +10%, -15% (Maximum 2.5A)
Ambient Temperature & Humidity	Temperature: 0~40° C, Humidity: 85% RH or less
Operating Environment	Free of corrosive Gas, No Excessive Dust
Isolation Resistance	500V 10MΩ or more
Unit Weight	360g
Safety Features	E2PROM Error Check, Memory Error, Deviation Counter Abnormality, Encoder Stoppage Determination Error, Encoder Counter Correction Abnormality, Encoder Breakage, Speed Abnormality, Overcurrent, Main Power • Voltage Abnormality, Circuit Power Abnormality, Overcurrent
Motor	AC Servo Motor 80W, 130W Equivalent
LED Display	RDY (ready) / RUN / ALM (Alarm)
Memory Capacity	16 Positions
Memory Device	CMOS
Input/Output Signal	DC 24V Type D/VDO Interface (Input): Start Input, Assigned Position (4 bit binary), Hold Input (Output): Complete Position Number Output (4 bit binary), Positioning Complete Signal Output, Homing Complete Signal Output, Zone Signal Output, Alarm Output, Emergency Stop Output
Outer dimensions	46.3 (W) X 158 (H) X 101 (D) (mm)
Attachments	I/O Flat Cable

## Part Names



## Dimensions (mm)



## External I/O

PIO (Parallel I/O):

Pin No.	Section	Signal Name	Cable Color	Content
1	P24	+24V	Brown-1	Connect power 24V.
2	N	OV	Red-1	Connect power OV.
3	Input	Start	Orange-1	Input Transfer Start Signal.
4		Assigned Position 1	Yellow-1	
5		Assigned Position 2	Green-1	
6		Assigned Position 3	Blue-1	
7		Assigned Position 4	Purple-1	Input Selected Position No.
8	System Reservation		Gray-1	Never connect.
9			White-1	
10	Input	Quick-Stop	Black-1	Immediately stops a moving actuator.
11	Unusable		Brown-2	Never connect.
12			Red-2	
13			Orange-2	
14			Yellow-2	
15		Green-2		
16	Output	Complete Position 1	Blue-2	Outputs transfer complete position No.
17		Complete Position 2	Purple-2	
18		Complete Position 4	Gray-2	
19		Complete Position 8	White-2	
20		Positioning Complete	Black-2	Outputs upon transfer complete.
21		Homing Complete	Brown-3	Outputs upon homing complete.
22		Zone	Red-3	Outputs within the setting range.
23		Alarm	Orange-3	Outputs during controller abnormality.
24	Emergency Stop	Yellow-3	Outputs during emergency stop.	
25	Unusable		Green-3	Never connect.
26			Blue-3	

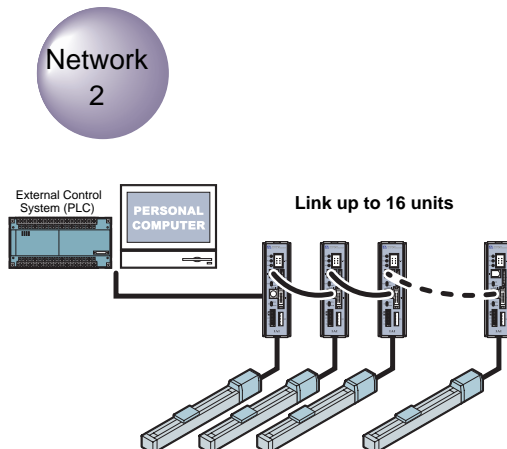
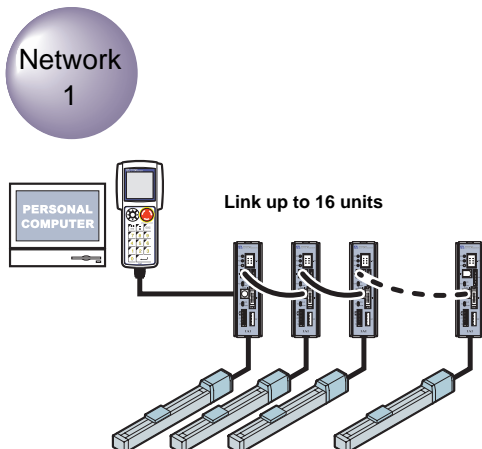
SIO (Serial I/O): The Robo Cylinder™ is equipped with a Serial I/O Port (RS-485) as a standard feature. With this Serial I/O circuit, you can link up to 16 units, making network formations possible.

### Network 1:

By simply connecting the teaching pendant or PC to a controller, it is easy to edit data on several controllers without having to change wiring.

### Network 2:

It is possible to control up to 16 controllers via serial communications from a single port on a PC or other serial device (i.e., operator interface panel, vision systems, etc.).



# Options

## Teaching Pendant

**Model Type** RCA-T (standard)  
RCA-TD (With deadman switch)

### Features

- Easy to use operation. Simply enter the numbers in the appropriate spot. Slide-out help panel is allow for a quick, on the spot instruction.
- Lock-Type Emergency Stop Switch.
- Emergency Stop Switch (optional).

### Specifications

Item	Specifications
Operating Temperature • Humidity	Temperature 0~40°C Humidity: 85% RH or less
Operating Environment	Free of corrosive gas, no excessive dust
Weight	Approximately 550G (includes cable)
Cable Length	5m
Display	21 Characters X 16 rows LCD Display

# Maintenance

Model Type	Length	Reference
CB-RCA-MA030	3m	
CB-RCA-MA050	5m	
CB-RCA-MA□□□	Custom	□□□ is specified by 1m unit length.

**Motor Cable**

\*The cable length is specified as □□□ = 6m. Maximum length of compliance is 10m.

CN3	M Cable	CN1
Blue(3) B 1		1 A Blue(1)
Blue(2) A 2		2 A Blue(2)
Blue(1) A 3		3 B Blue(3)
Blue(6) BK2 4		4 B Blue(4)
Blue(5) BK1 5		5 BK1 Blue(5)
Blue(4) B 6		6 BK2 Blue(6)

178289-3 SLR-06V

Model Type	Length	Reference
CB-RCA-PA030	3m	
CB-RCA-PA050	5m	
CB-RCA-PA□□□	Custom	□□□ is specified by 1m unit length.

**Encoder Cable**

\*The cable length is specified as □□□ = 6m. Maximum length of compliance is 10m.

CN4	PG Cable	CN2
Black ENA 1		1 ENA Black
White (Black) ENA 2		2 ENA White(Black)
Red ENB 3		3 ENB Red
White (Red) ENB 4		4 ENB White(Red)
Green ENC 5		5 ENC Green
White (Green) ENC 6		6 ENC White(Green)
Yellow 5V 7		7 - - DF1B-
White (Yellow) GND 8		8 - - 16DES-
Shield F.G 9		9 5V Yellow 2.5RC
		10 GND White(Yellow)
		11 F.G -
		12 - -
		13 - -
		14 - -
		15 - -
		16 - Shield

5480-09

**I/O Flat Cable**

Model Type: CB-RCA-P10020 Length: 2m

No.	Signal	Color	Cable	No.	Signal	Color	Cable
1	+24V	Brown-1	Flat Cable (A)	14	-	Yellow-2	Flat Cable (B)
2	24G	Red-1		15	-	Green-2	
3	CSTR	Orange-1		16	PM1	Blue-2	
4	PC1	Yellow-1		17	PM2	Purple-2	
5	PC2	Green-1		18	PM4	Gray-2	
6	PC4	Blue-1		19	PM8	White-2	
7	PC8	Purple-1		20	PFIN	Black-2	
8	-	Gray-1		21	ZFIN	Brown-3	
9	-	White-1		22	ZONE	Red-3	
10	ILK	Black-1		23	ALM	Orange-3	
11	-	Brown-2		24	EMG	Yellow-3	
12	-	Red-2		25	-	Green-3	
13	-	Orange-2		26	-	Blue-3	

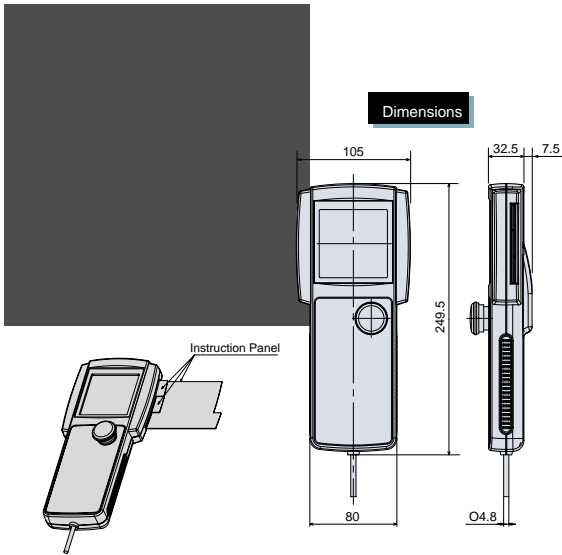
Model Type	Length	Reference
CB-RCA-SIO020	2m	For RCA-105-2
CB-RCA-SIO050	5m	For RCA-105-5/RCA-101-MW

**External Device Communication Serial Cable**

No.	Signal	Color	No.	Signal	Color
1	5V	Brown	1	SGA	Yellow
2	SGA	Yellow	2	SGB	Orange
3	GND	Red	3	5V	Brown • Green
4	SGB	Orange	4	EMGS	
5	GND	Blue	5	EMGA	Black
6	5V	Green	6	24V	
			7	GND	Red • Blue
			8	EMGB	Black
				FG	Shield

Short circuit electric conduit UL-1007AWG28 (Black)

Shield Non-connect



## PC Software

### Model Type

RCA-101-MW

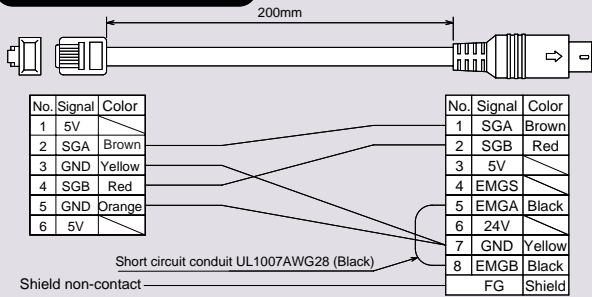
### Content

- 3 Floppy disks
- 1 PC connection cable (5m)
- 1 RS485 Conversion Adapter

### Features

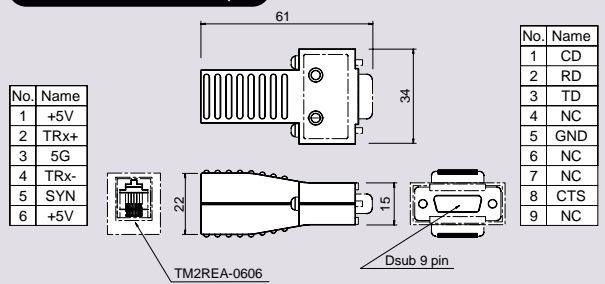
- By linking the controller it is possible to access and control up to 16-axis.
- Such useful functions such as Jog function, incremental movement and step operation improve debugging capabilities.

### Controller Serial Link Cable



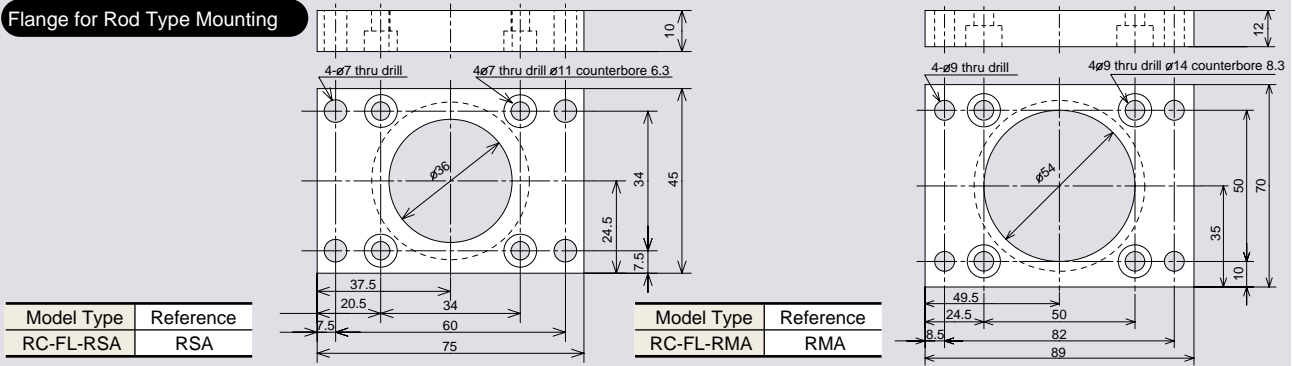
Model Type	Length	Reference
CB-RCA-CTL002	0.2m	Connection for C/T-C/T

### RS485 Conversion Adapter

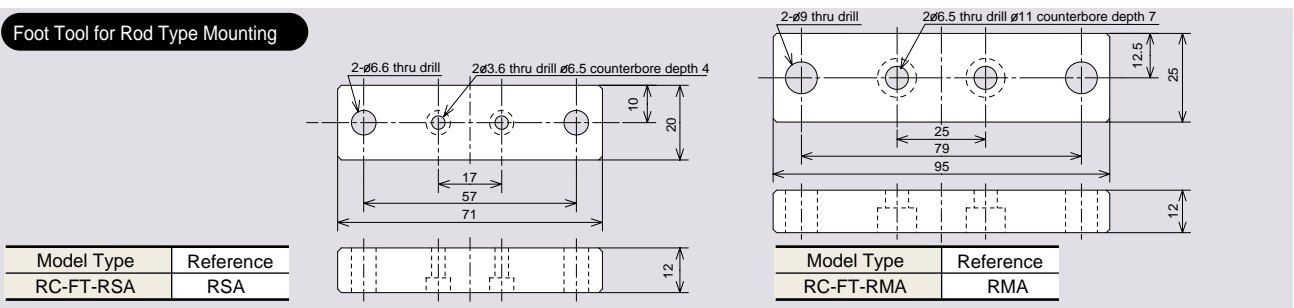


Model Type	Length	Reference
RC-ADP-MW	—	External Device connection side 9 pin

### Flange for Rod Type Mounting



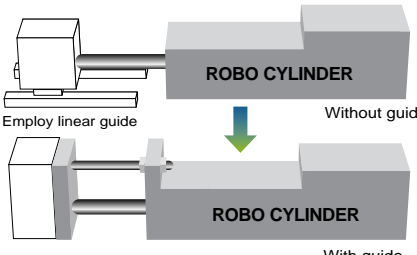
### Foot Tool for Rod Type Mounting



# RC High Rigidity Model

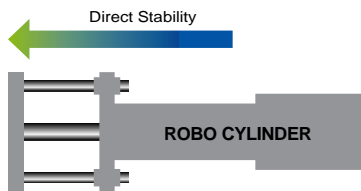
Available in single guide, double guide and ball bushing specifications.

- Horizontal Application is possible without guide.



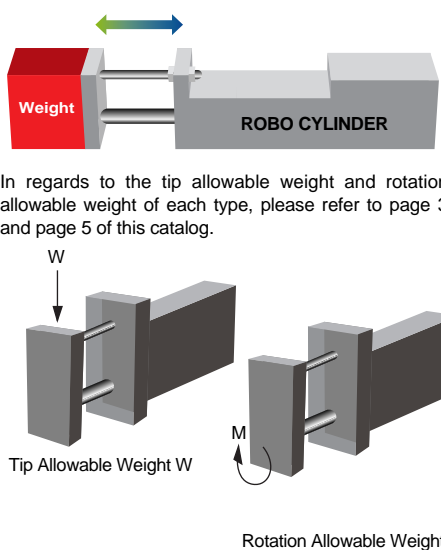
Since the addition of guide is not needed, space and cost are minimized

- Improved Direct Stability



By adding the guide, oscillation on the rod disappears, thus achieving precise application requirements.

- Weight may be placed on the rod tip.



In regards to the tip allowable weight and rotation allowable weight of each type, please refer to page 3 and page 5 of this catalog.

# RSG Series

## Specifications

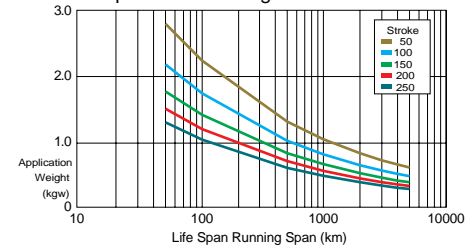
Type	RSGB	RSGS	RSGD
Stroke (mm)	50-250		
Motor	AC Servo Motor (Encoder Integrated Type)		
Base	Extruded Aluminum		
Main Body Rod Diameter (mm)	φ25		
Guide	Internal Ball Bushing	Single Guide Guide Rod Diameter φ16 Slider Bushing Type	Double Guide Guide Rod Diameter φ10 Ball Bushing Type
Tip Allowable Weight W (kgw)	Please see right diagram		
Rotation Allowable Weight M (kg · cm)*		M=5xW	M=4xW
Vertical Payload (kgw) **	Please see below diagram		
...	L	294 (30)	
Maximum Push Power	M	236 (24.1)	
	H	100 (10.2)	
Weight	Please see below diagram		
Attachments	M3 Square Head Nut	4 pieces	M3 Square Head Nut 4 pieces
	M14 Hexagonal Head Nut	1 piece	M3 Square Head Nut 4 pieces

Note\*) As for the rotation allowable weight, using the graph, attain W and tip allowable weight and calculate them in a numeric format. As for the ball bushing type, there is no consideration for external power placed on the rotational direction.

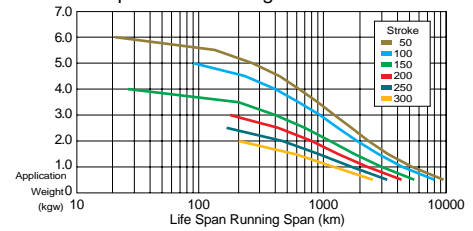
Note \*\*) As for horizontal application, please use within the tip allowable weight W range.

Note \*\*\*) As for the Maximum push power, it is the maximum hold power during stoppage of push movement.

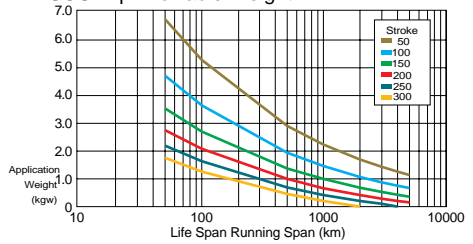
### • RSGB Tip Allowable Weight W

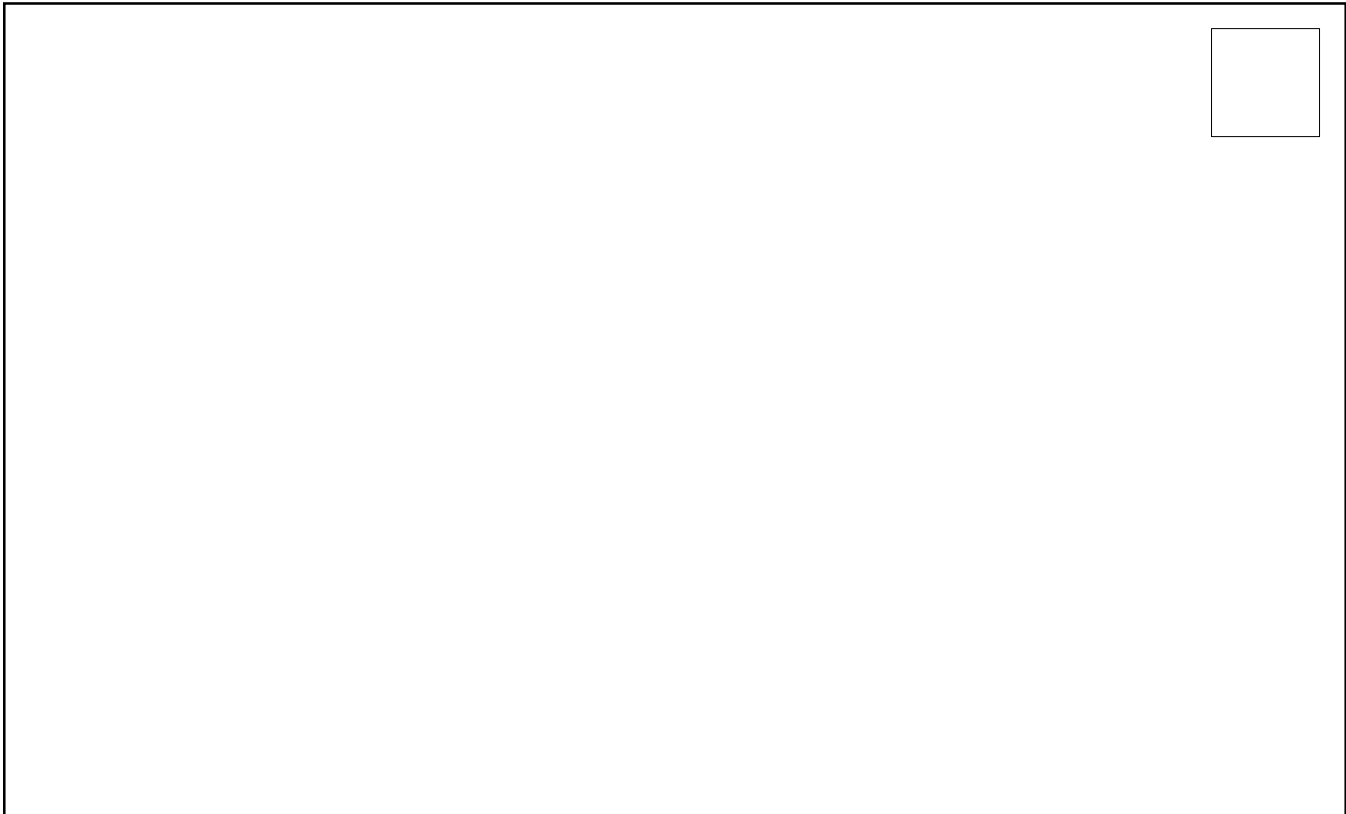
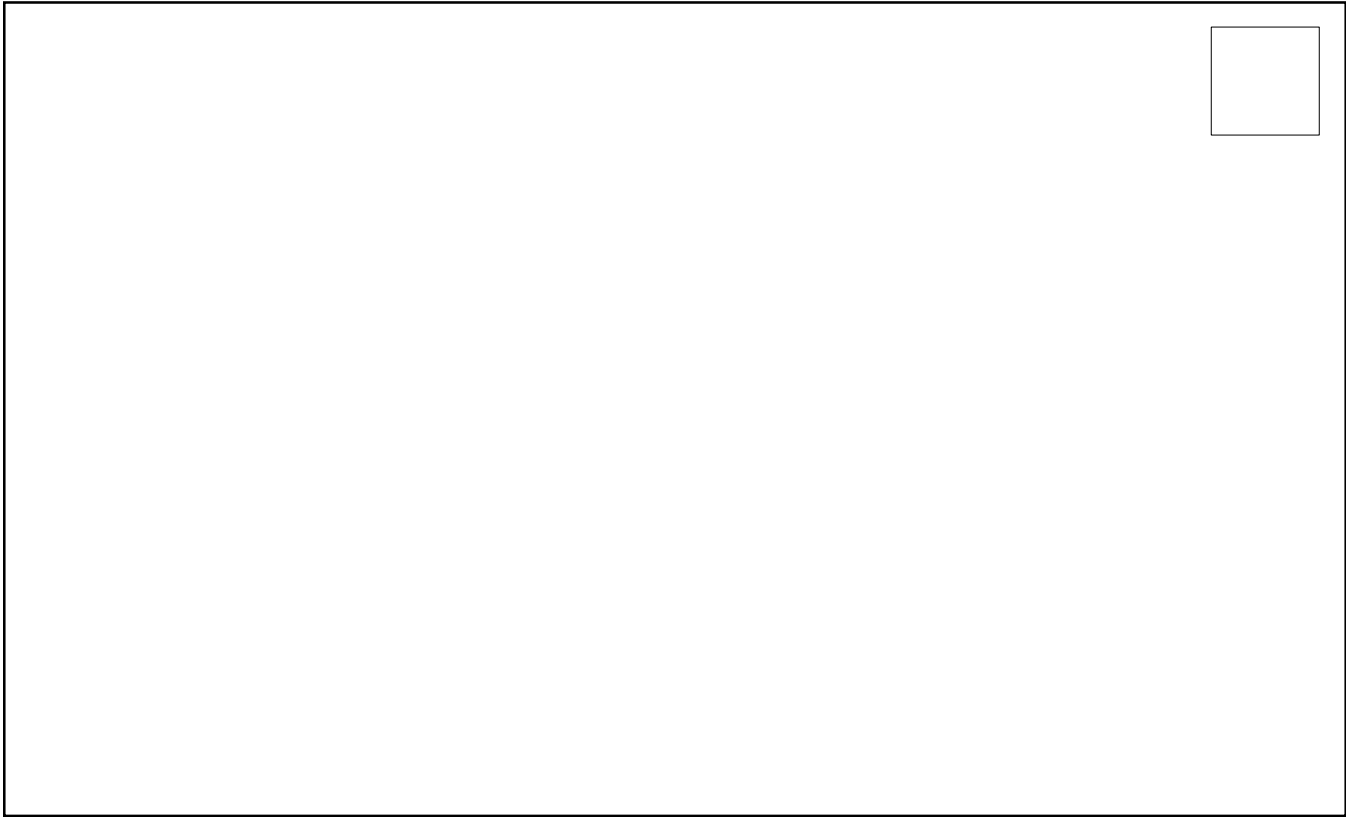


### • RSGS Tip Allowable Weight W



### • RSGD Tip Allowable Weight W





# RMG Series

## Specifications

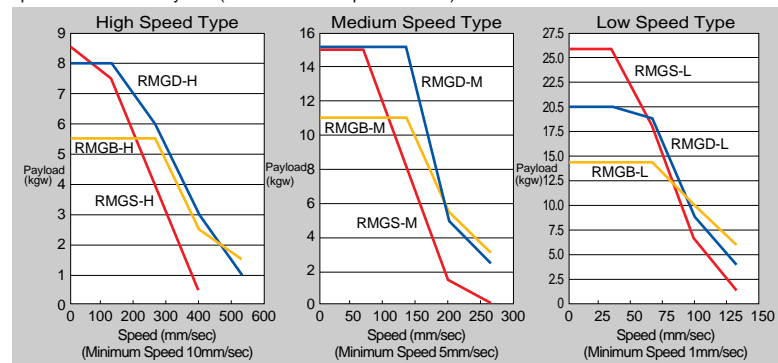
Type	RMGB	RMGS	RMGD
Stroke (mm)	50~250	50~300	
Motor	AC Servo Motor (Encoder Integrated Type)		
Base	Extruded Aluminum		
Main Body Rod Diameter (mm)	φ40		
Guide	Internal Ball Bushing	Single Guide Guide Rod Diameter φ16 Slider Bushing Type	Double Guide Guide Rod Diameter φ12 Ball Bushing Type
Tip Allowable Weight W (kgw)	Please see right diagram		
Rotation Allowable Weight M (kg·cm)*		M=5xW	M=4xW
Vertical Payload (kgw) **	Please see below diagram		
Maximum Push Power	L	784 (80)	
	M	360 (36.7)	
	H	182 (18.6)	
Weight	Please see below diagram		
Attachments	M3 Square Head Nut 4 pieces M18 Hexagonal Head Nut 1 piece	M3 Square Head Nut 4 pieces	M3 Square Head Nut 4 pieces

Note\*) As for the rotation allowable weight, using the graph, attain W and tip allowable weight and calculate them in a numeric format. As for the ball bushing type, there is no consideration for external power placed on the rotational direction.

Note \*\*) As for horizontal application, please use within the tip allowable weight W range.

Note \*\*\*) As for the Maximum push power, it is the maximum hold power during stoppage of push movement.

Speed vs. Vertical Payload (when acc./dec. speed is 0.2G)

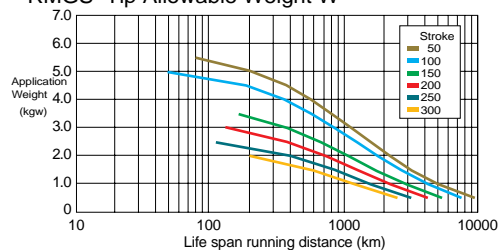


(Note) The maximum speed for 250 stroke is H:475mm/sec. M:237mm/sec. L:118mm/sec. and for 300 stroke is H:350mm/sec. M:175mm/sec. L:87mm/sec.

### • RMGB Tip Allowable Weight W



### • RMGS Tip Allowable Weight W

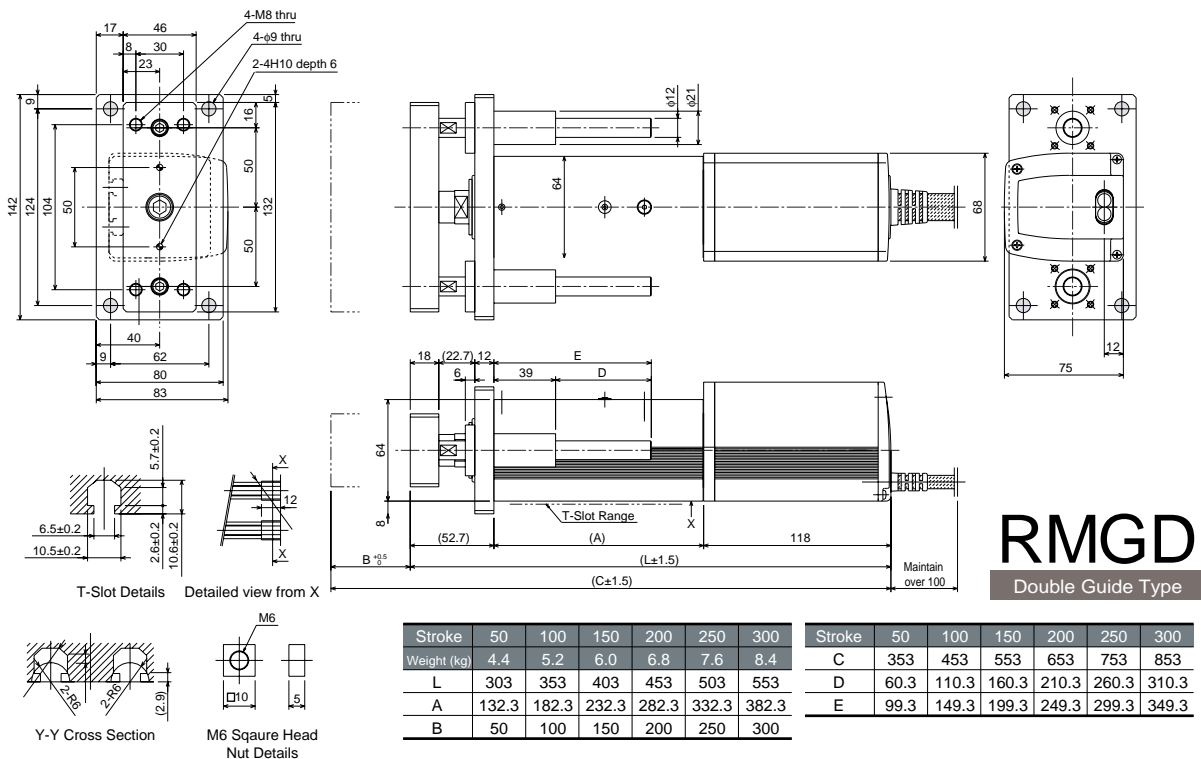
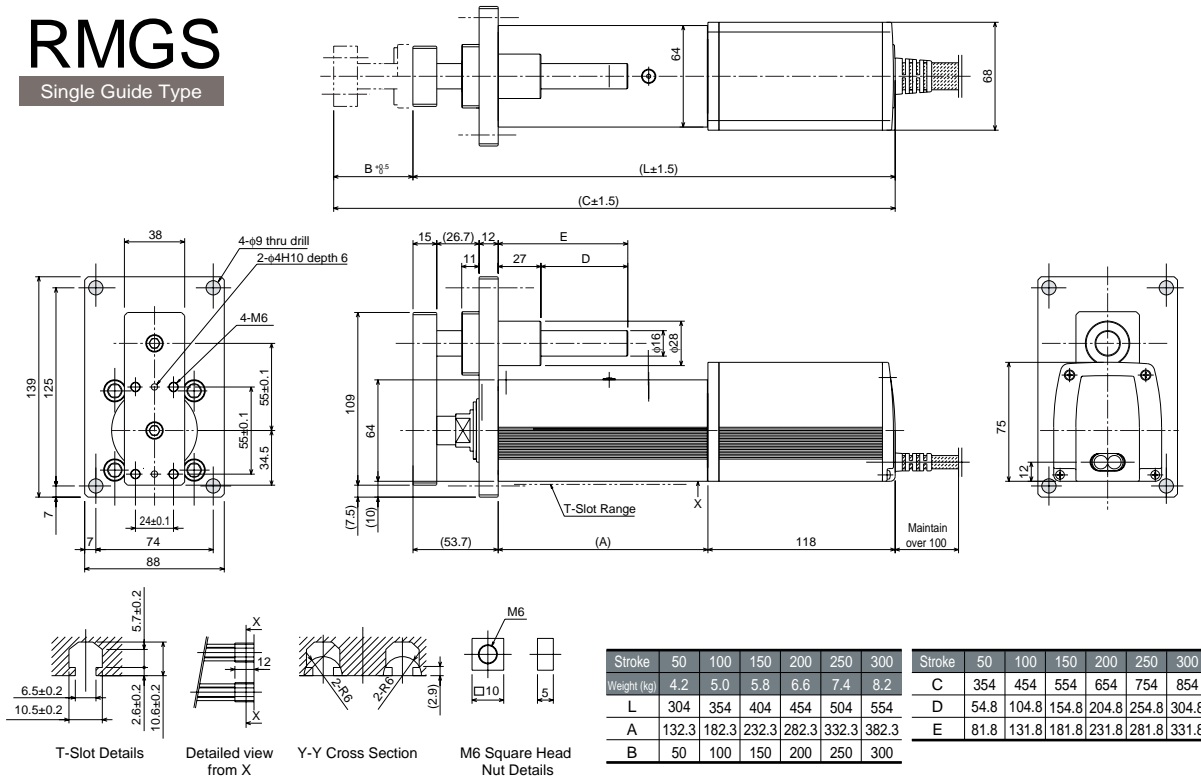


### • RMGD Tip Allowable Weight W



# RMGS

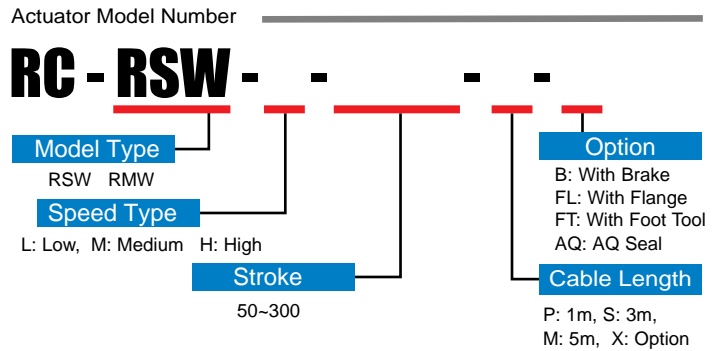
Single Guide Type



# RC Splash Proof Model

## INGRESS PROTECTION (IP) CODES

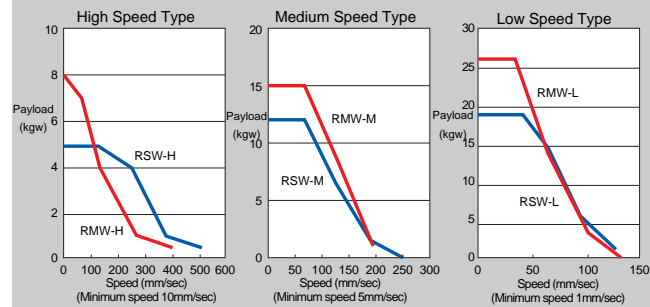
1st Digit	Protection Against Foreign Objects	2nd Digit	Protection Against Moisture
0	Not protected	0	Not protected
1	Protected against objects greater than 50mm	1	Protected against dripping water
2	Protected against objects greater than 12mm	2	Protected against dripping water when tilted up to 15N
3	Protected against objects greater than 2.5mm	3	Protected against spraying water
4	Protected against objects greater than 1.0mm	4	Protected against splashing water
5	Dust protected	5	Protected against water jets
6	Dust tight	6	Protected against heavy seas
		7	Protection against the effects of immersion
		8	Protection against submersion



## Specifications

Type	RSW	RMW
Stroke (mm)	50-300	
Motor	AC Servo Motor (Encoder integrated type)	
Base	Extruded Aluminum	
Rod Diameter (mm)	φ 25	φ 40
Rod Tip Screw Diameter (mm)	M14 Pitch 1.5	M18 Pitch 1.5
Vertical Payload (Note1)	See diagram below	
(Note 2)	L	784 (80)
Maximum Push Power N (kgf)	M	360 (36.7)
	F	182 (18.6)
Weight	See diagram below	
Mounting Hardware	M3 Square Head Nut 4 pieces + M14 Hexagonal Head Nut 1 piece	M6 Square Head Nut 4 pieces + M18 Hexagonal Head Nut 1 piece

Speed vs. Vertical Payload Diagram (when acc./dec. speed is 0.2G)

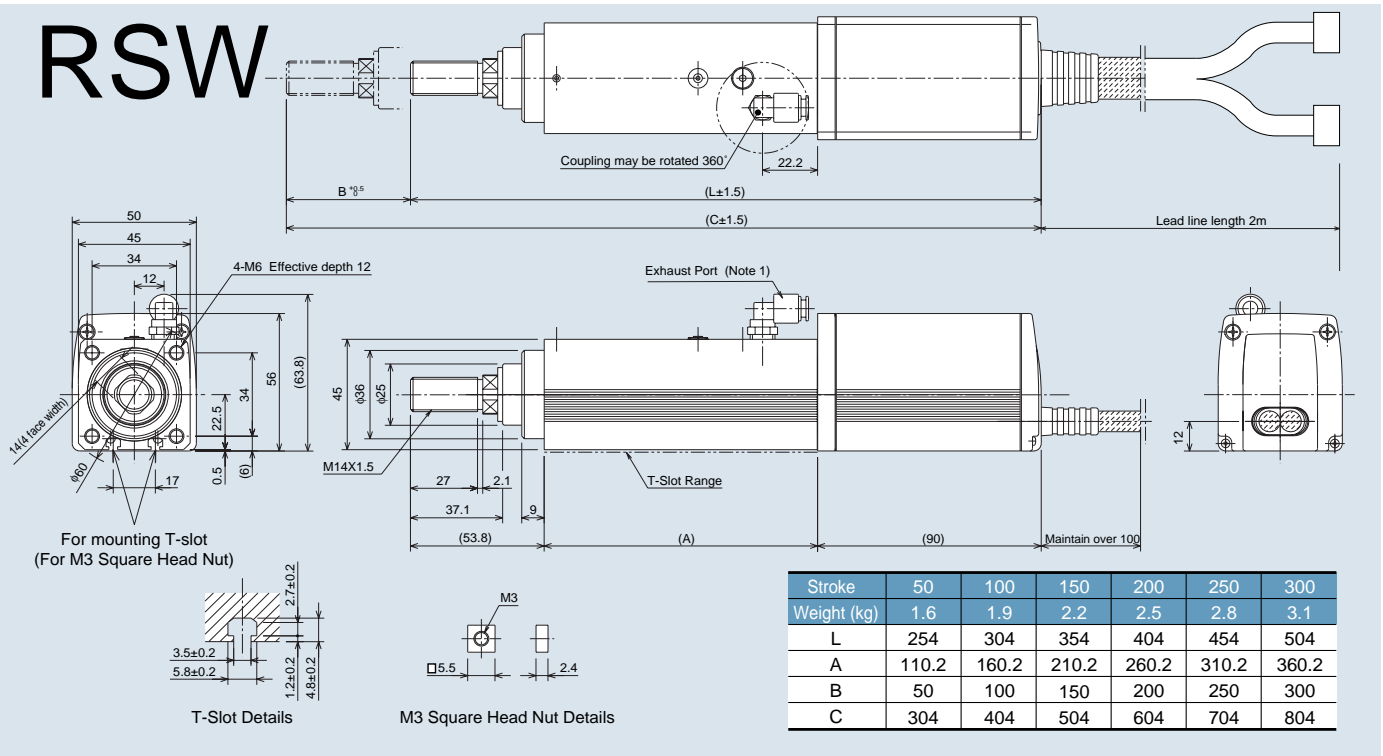


Note 1\* There is no consideration for side loading. Therefore, when a side load is present, please use guide.  
Note 2\*: The maximum push power is the maximum hold power during the push movement.

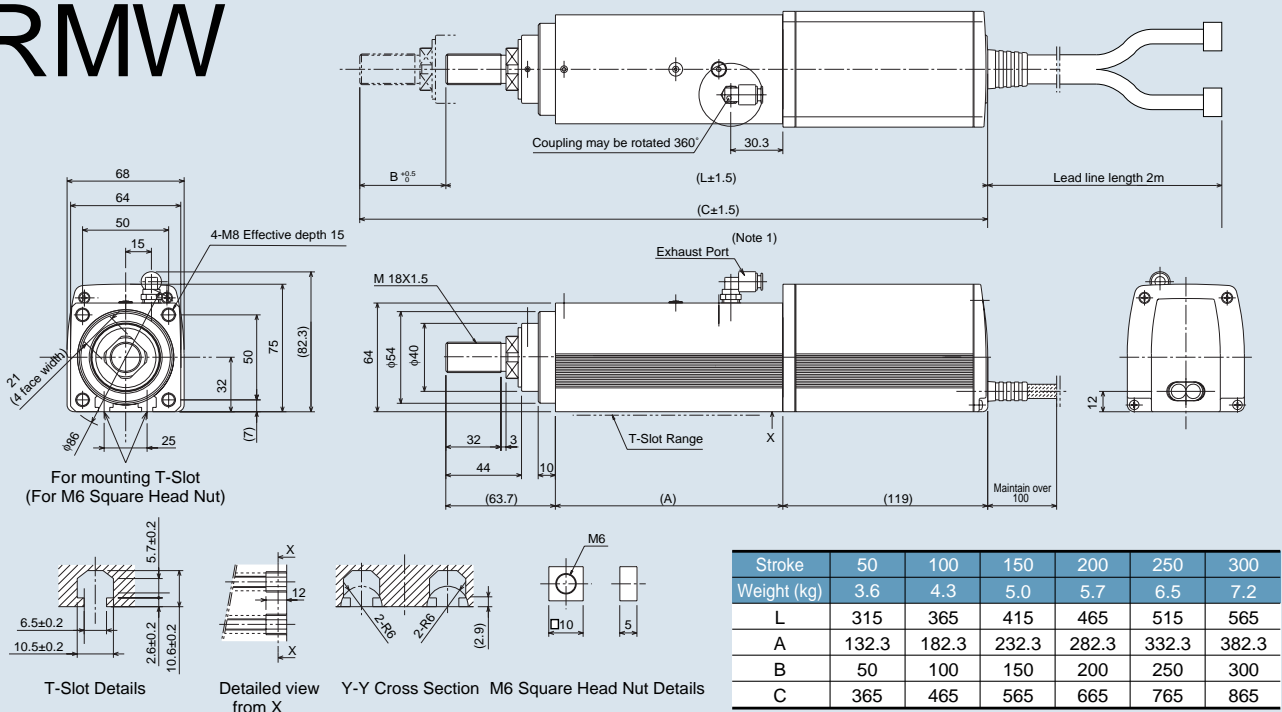
Note: The maximum speed for 250 stroke is (H: 475mm/sec. M:237mm/sec.L:118mm/sec.) and for 300 stroke is (H:350mm/sec. M:237mm/sec. L:118mm/sec).



# RSW



# RMW



(Note 1) As for the exhaust port, insert a tube with an outer diameter of  $\phi 6$  and extend it to a place where water will not reach.  
 \* Please be aware that the dimensions will differ when using the brake option.