

# MR12/MR12D



## Ordering method

### Single carriage model

**MR12**

Model	Cable carrier entry location	Optional cable carrier for users	Origin position change	Grease type	Stroke	Cable length
MR12: Incremental MR12A: Semi-absolute <sup>Note 1</sup>	RH: Horizontal, right LH: Horizontal, left RW: Wall mounted, right LW: Wall mounted, left	No entry: None S: S type M: M type	Horizontal: None, L side (Standard) Z: R side Wall: None, R side (Standard) Z: L side	None: Standard GC: Clean	50 to 1050 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K <sup>Note 2</sup>

**TSP**

Positioner	Driver: Power supply voltage / Power capacity	LCD monitor	I/O selection
TS-P	105: 100V/100W or less 205: 200V/100W or less	No entry: None L: With LCD	N: NPN PN: PNP CC: CC-Link DN: DeviceNet

**SR1-P**

Controller	Driver: Power capacity	Usable for CE	I/O selection
05	05: 100W or less	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet PB: Profibus

**RDP**

Driver	Driver: Power capacity
05	05: 100W or less

### Double carriage model

**MR12D**

Model	Installing direction	Optional cable carrier for users	Option	Stroke	Cable length	Controller	Usable for CE	I/O selection 1	I/O selection 2
MR12D: Incremental MR12AD: Semi-absolute <sup>Note 1</sup>	H: Horizontal installation W: Wall mounted installation	No entry: None S: S type M: M type	Grease type: None: Standard GC: Clean	50 to 1050 (100mm pitch)	3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K <sup>Note 3</sup>	RCX221 SR1-P (2 units) TS-P (2 units) RDP (2 units)	No entry: Standard E: CE marking	N: NPN P: PNP CC: CC-Link DN: DeviceNet PB: Profibus EN: Ethernet	No entry: None N: OPDIO24/16 (NPN) P: OPDIO24/17 (PNP) EN: Ethernet

**RCX221**

Note 1. Semi-absolute models are supported by the SR1-P, TS-P and RCX221. For the details of the semi-absolute model, please refer to P.19. RDP has an incremental model only.  
 Note 2. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.432 for details on robot cable.  
 Note 3. If a flexible cable is needed for the SR1-P, TS-P, or RDP, then select 3K/5K/10K. On the RCX221, the standard cable is a flexible cable, so enter 3L/5L/10L when ordering.  
 Note. It is possible to provide the model without a cable carrier. To find information on wiring (cable terminals) within the cable carrier see P.440.

## Specifications <sup>Note</sup>

Model	MR12	MR12D
Driving method / Shaft diameter	Shaft motor / $\phi 12$	
Repeatability ( $\mu\text{m}$ )	+/-5 or less	
Scale ( $\mu\text{m}$ )	Magnetic type: resolution of 1	
Maximum speed <sup>Note 1</sup> (mm/sec)	2500	
Rated thrust (N)	18	
Maximum payload <sup>Note 2</sup> (kg)	5	
Stroke (mm)	50 to 1050 (50mm pitch)	
Linear guide	4 rows of circular arc grooves $\times$ 2 rail	
Maximum cross-section outside dimensions (mm)	W60 $\times$ H90 (except the cable carrier section)	
Total length (mm)	Stroke+288	Stroke+488
Cable length (m)	Standard: 3.5 / Option: 5,10	

Note. A vertical model (with brake) is not available with the PHASER series.  
 Note. The basic specifications of semi-absolute model are the same as those of the incremental model.

Note 1. Maximum speed may not be obtained depending on operating conditions.

Note 2. Maximum payload per carriage.

## Allowable overhang <sup>Note</sup>

Horizontal installation (Unit: mm)

	A	B	C
1kg	600	600	600
2kg	1200	1200	598
3kg	1800	1800	406
5kg	3000	1561	241

Wall installation (Unit: mm)

	A	B	C
1kg	600	600	600
2kg	529	1200	1200
3kg	323	1450	1800
5kg	162	589	3000

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

## Static loading moment

(Unit: N-m)

MY	MP	MR
107	107	89

## Controller

Controller	Operating method
SR1-P05	Programming / I/O point trace / Remote command / Operation
RCX221	Operation using RS-232C communication
TS-P105 TS-P205	I/O point trace / Remote command
RDP-05	Pulse train control

## Cable carrier entry location

**RH** Horizontal, right

**LH** Horizontal, left

**RW** Wall mounted, right

**LW** Wall mounted, left

Note. Be sure to install in the direction as specified (in cable carrier take-out direction drawing and various specification drawings) individually. Installation in any other way will cause a failure. For requirement of installation in any way other than the above standard installation, please consult YAMAHA as special arrangement will be available.

## Optional cable carrier for users

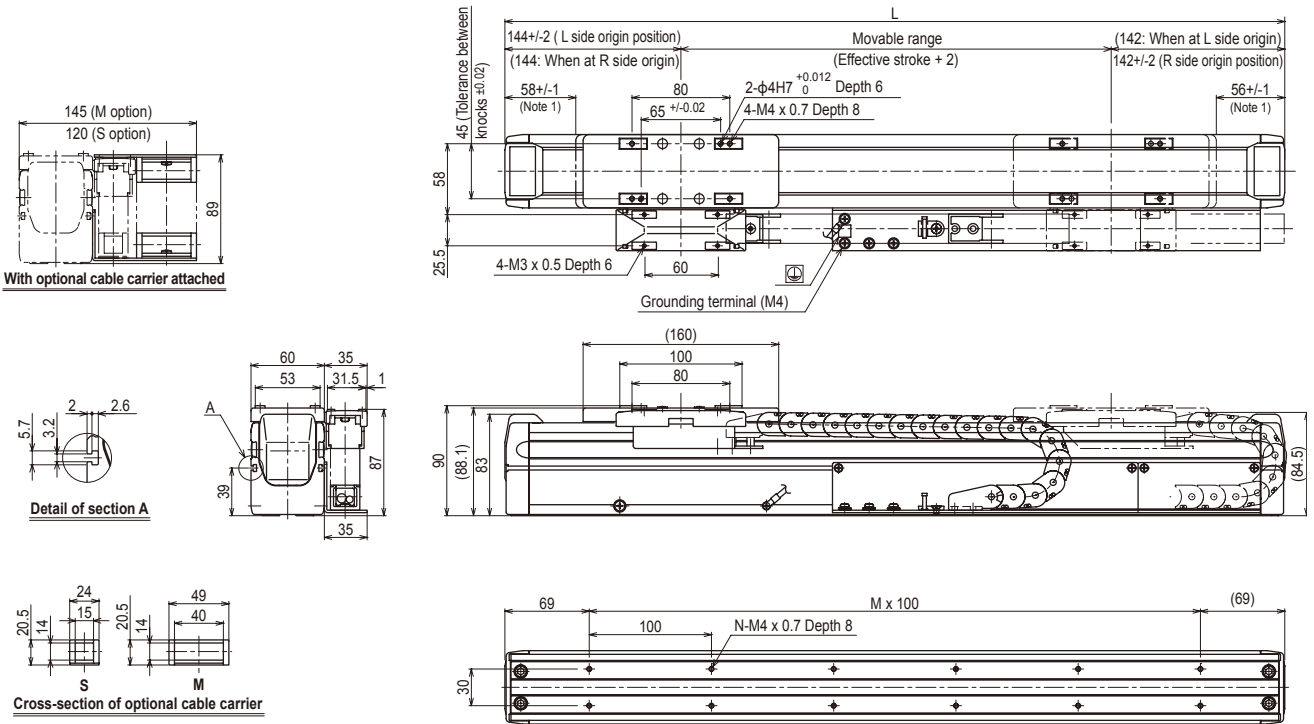
**S type**

**M type**

Space for optional cable for users

Note. The cable and air hoses should take up less than 30% of the space when storing them inside the cable carrier. Lay out the cables and air hoses in rows inside the cable carrier so they do not cross each other.

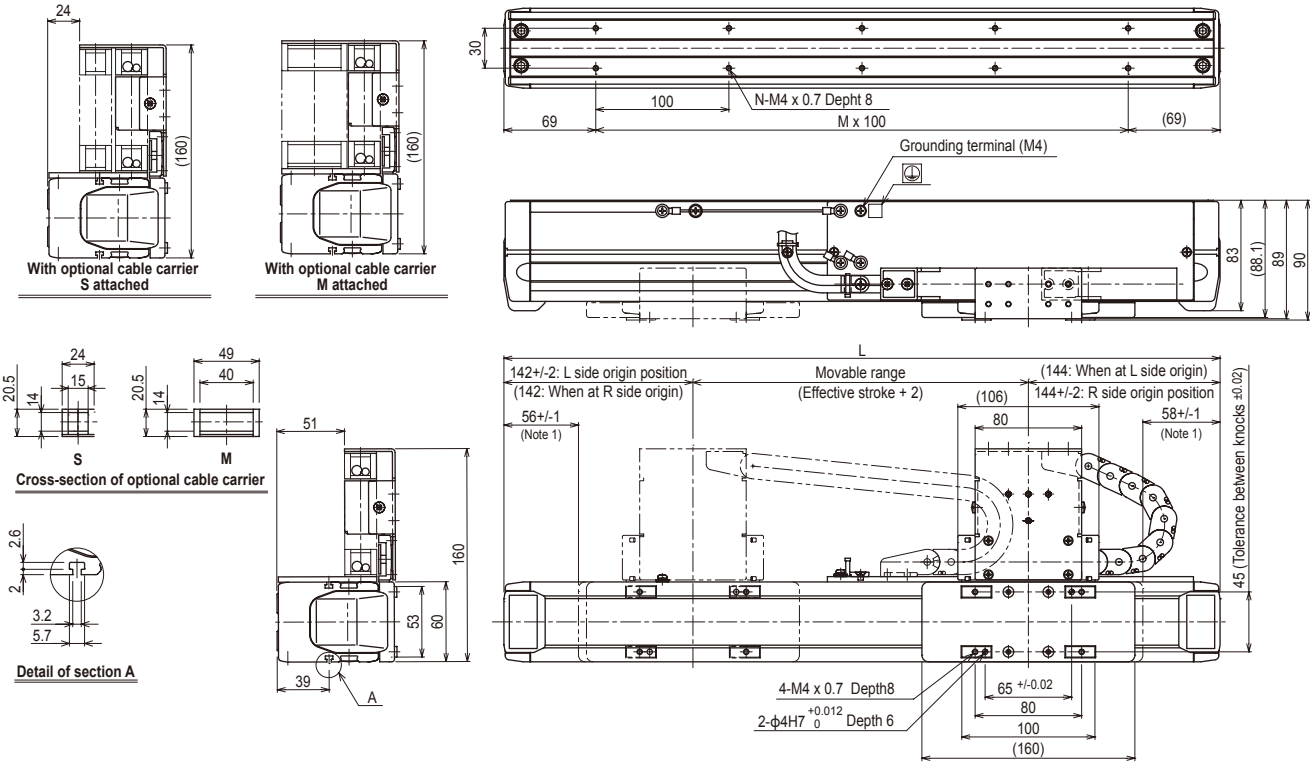
## MR12 single carriage horizontal mount model **RH**



Effective stroke	50	150	250	350	450	550	650	750	850	950	1050
<b>L</b>	338	438	538	638	738	838	938	1038	1138	1238	1338
<b>M</b>	2	3	4	5	6	7	8	9	10	11	12
<b>N</b>	6	8	10	12	14	16	18	20	22	24	26
<b>Weight (kg)</b>	3.9	4.4	5.0	5.6	6.1	6.7	7.3	7.9	8.4	9.0	9.5

Note1. Distance from both ends to the mechanical stopper.  
 Note. The origin is set on the L side at the time of shipment. It can be changed to the R side by parameter setting.

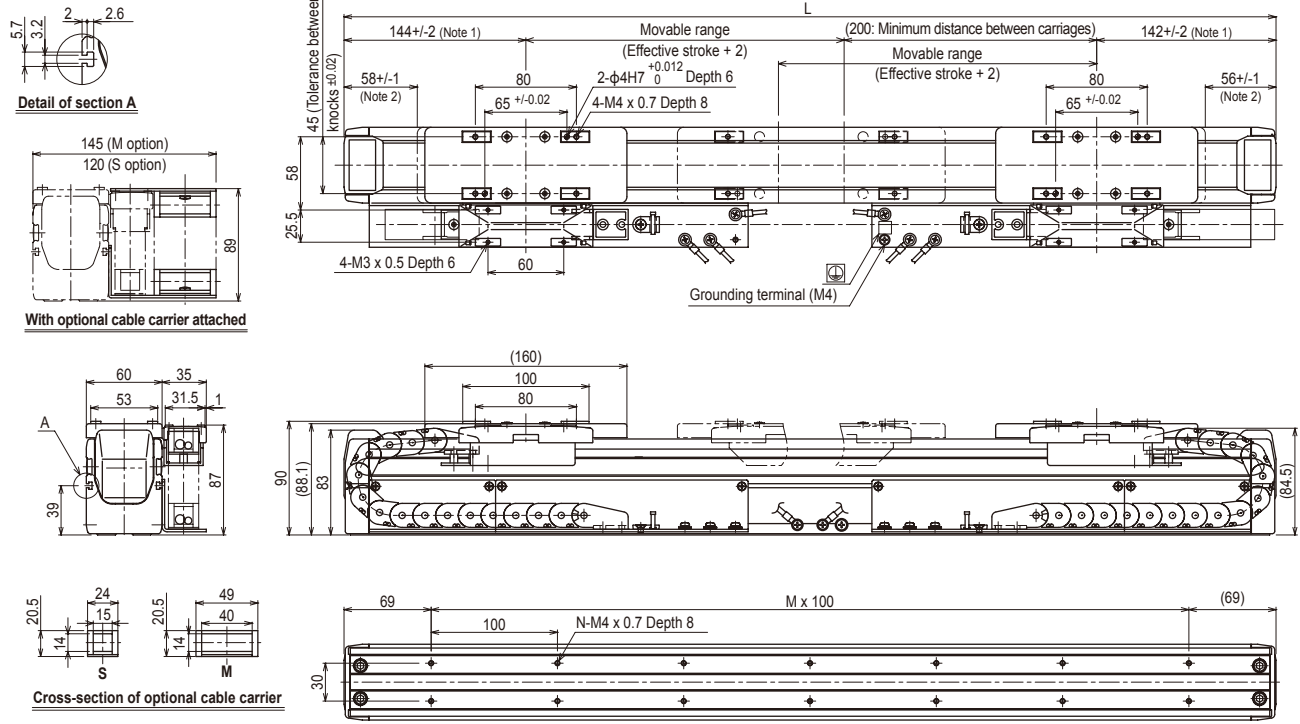
## MR12 single carriage wall mount model **RW**



Effective stroke	50	150	250	350	450	550	650	750	850	950	1050
<b>L</b>	338	438	538	638	738	838	938	1038	1138	1238	1338
<b>M</b>	2	3	4	5	6	7	8	9	10	11	12
<b>N</b>	6	8	10	12	14	16	18	20	22	24	26
<b>Weight (kg)</b>	3.9	4.4	5.0	5.6	6.1	6.7	7.3	7.9	8.4	9.0	9.5

Note1. Distance from both ends to the mechanical stopper.  
 Note. The origin is set on the R side at the time of shipment. It can be changed to the L side by parameter setting.

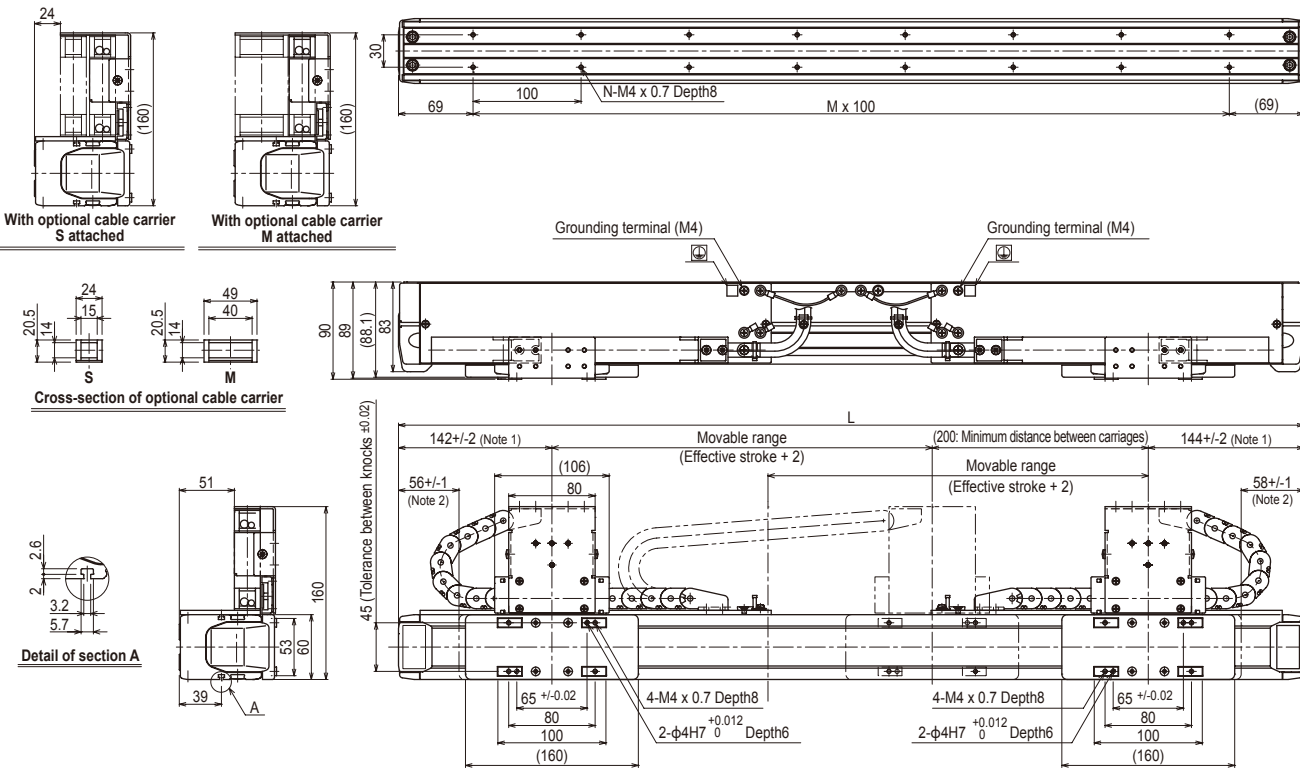
## MR12D double carriage horizontal mount model H



Effective stroke	50	150	250	350	450	550	650	750	850	950	1050
<b>L</b>	538	638	738	838	938	1038	1138	1238	1338	1438	1538
<b>M</b>	4	5	6	7	8	9	10	11	12	13	14
<b>N</b>	10	12	14	16	18	20	22	24	26	28	30
<b>Weight (kg)</b>	5.7	6.3	6.8	7.3	8.0	8.6	9.1	9.7	10.2	10.8	11.3

Note1. Position of the table slider when returned to the origin.  
Note2. Distance from both ends to the mechanical stopper.

## MR12D double carriage wall mount model W



Effective stroke	50	150	250	350	450	550	650	750	850	950	1050
<b>L</b>	538	638	738	838	938	1038	1138	1238	1338	1438	1538
<b>M</b>	4	5	6	7	8	9	10	11	12	13	14
<b>N</b>	10	12	14	16	18	20	22	24	26	28	30
<b>Weight (kg)</b>	5.7	6.3	6.8	7.3	8.0	8.6	9.1	9.7	10.2	10.8	11.3

Note1. Position of the table slider when returned to the origin.  
Note2. Distance from both ends to the mechanical stopper.