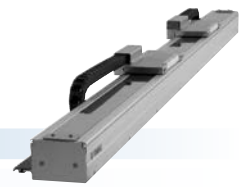


MF7/MF7D

- Flat type available
- Can be used for wall-mount



Ordering method

Single carriage model

MF7

Model MF7: Incremental MF7A: Semi-absolute ^{Note 1}	Cable carrier entry location RH: Horizontal, right LH: Horizontal, left FRH: Horizontal, right (Flat) FLH: Horizontal, left (Flat) RW: Wall mount, right LW: Wall mount, left	Optional cable carrier for users^{Note 2} No entry: None S: S type M: M type L: L type	Origin position change No entry: L side (Standard) Z: R side No entry: R side (Standard) Z: L side	Grease type No entry: Standard GC: Clean	Stroke^{Note 3} Horizontal (100mm pitch) 100 to 4000 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable) ^{Note 5}	Cable length^{Note 4} 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable) ^{Note 5}
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TSP

Positioner^{Note 6} TS-P	Driver: Power-supply voltage / Power capacity 110: 100V/200W 210: 200V/200W	LCD monitor No entry: None L: With LCD	I/O selection NP: NPN PN: PNP CC: CC-Link DN: DeviceNet™ EP: EtherNet/IP™ GW: No I/O board ^{Note 7}
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SR1-P **10**

Controller	Driver: Power capacity 10: 200W	Usable for CE No entry: Standard E: CE marking	I/O selection N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS
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RDV-P **2** **10** **RBR1**

Driver	Power-supply voltage 2: AC200V	Driver: Power capacity 10: 200W or less	Regenerative unit
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Note 1. For the details of the semi-absolute model, please refer to P.33. RDV-P has an incremental model only.
 Note 2. For models with a 2,100mm or longer stroke, optional L type cable carriers can only be used. Flat type cannot be selected for L type.
 Note 3. Maximum stroke for flat type is 2000mm.
 Note 4. The robot cable is standard cable (3L/5L/10L), but can be changed to flexible cable. See P.594 for details on robot cable.
 Note 5. If a flexible cable is needed for the SR1-P, TS-P, or RDV-P, then select 3K/5K/10K. On the RCX221, the standard cable is a flexible cable, so enter 3L/5L/10L when ordering.
 Note 6. These controllers can be mounted on DIN rails. See P.498 for details.
 Note 7. Select this selection when using the gateway function. For details, see P.60.
 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.602.

Double carriage model

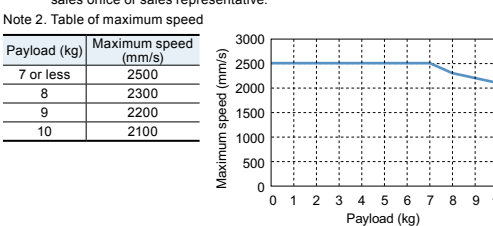
MF7D

Model MF7D: Incremental MF7AD: Semi-absolute ^{Note 1}	Installing direction H: Horizontal installation FH: Horizontal installation (Flat) W: Wall mount installation	Optional cable carrier for users^{Note 2} No entry: None S: S type M: M type L: L type	Grease type No entry: Standard GC: Clean	Stroke^{Note 3} Horizontal (100mm pitch) 100 to 3800 100 to 1800 (100mm pitch) Wall (100mm pitch)	Cable length 3L: 3.5m 5L: 5m 10L: 10m 3K/5K/10K (Flexible cable) ^{Note 5}	RCX221 Controller RCX221 SR1-P (2 units) TS-P (2 units) RDV-P (2 units)	Usable for CE No entry: Standard E: CE marking	I/O selection 1 N: NPN P: PNP CC: CC-Link DN: DeviceNet™ PB: PROFIBUS EN: Ethernet	I/O selection 2 No entry: None N1: OPDI024/16 (NPN) P1: OPDI024/17 (PNP) EN: Ethernet
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Specifications

Model	MF7	MF7D
Driving method	Steel cored linear motor with falt magnet	
Repeatability (µm)	+/-5	
Scale (µm)	Magnetic type: resolution of 1	
Maximum speed^{Note 2} (mm/sec)	2500	
Rated thrust (N)	37	
Maximum payload (kg)	10 ^{Note 1}	
Stroke (mm)	Horizontal	100 to 4000 (100mm pitch)
	Wall mount	100 to 1800 (100mm pitch)
Linear guide	Horizontal	100 to 3800 (100mm pitch)
	Wall mount	100 to 1800 (100mm pitch)
Maximum cross-section outside dimensions (mm)	W85 × H80 (except the cable carrier section)	
Total length (mm)	Stroke+280	Stroke+480
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. Payload per carrier. When the payload exceeds 7kg, please consult our sales office or sales representative.
 Note 2. Table of maximum speed



Allowable overhang

	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)		
	A	B	C	A	B	C
1kg	3000	3000	680	700	3000	3000
3kg	3000	1350	215	195	1260	3000
5kg	2900	830	125	90	630	2480
7kg	2400	580	85	70	360	1680
9kg	2200	460	60			
10kg	2100	410	55			

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

MY	MP	MR
156	156	194

(Unit: N·m)

Controller

Controller	Operating method
SR1-P10	Programming / I/O point trace / Remote command / Operation using RS-232C communication
RCX221 RCX240/340	Operation using RS-232C communication
TS-P110	I/O point trace / Remote command
TS-P210	Remote command
RDV-P210-RBR1	Pulse train control

Cable carrier entry location

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

Cable and air tube guide

S: φ8 flexible cable x 1, φ4 air tube x 1
 M: φ8 flexible cable x 2, φ6 air tube x 2
 L: φ8 flexible cable x 2, φ8 air tube x 3

Space for optional cable for users

MF7 single carriage horizontal mount model **RH**

Optional cable carrier M type **Optional cable carrier S type**

Detail of section D **Cross-section of E-E**

Cross-section of cable carrier

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	380	480	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280
A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46
C	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
Weight (kg)	5.8	6.5	7.3	8	8.7	9.4	10.1	10.9	11.6	12.3	13	13.7	14.5	15.2	15.9	16.6	17.3	18.1	18.8	19.5

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. The origin is set on the L side at the time of shipment. It can be changed to the R side by parameter setting.
Note 3. The drawings on this page show the unit with horizontal-right-type cable carrier (RH).
Note 4. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

MF7 single carriage wall mount model **RW**

Cross-section of optional cable carrier **Cross-section of F-F**

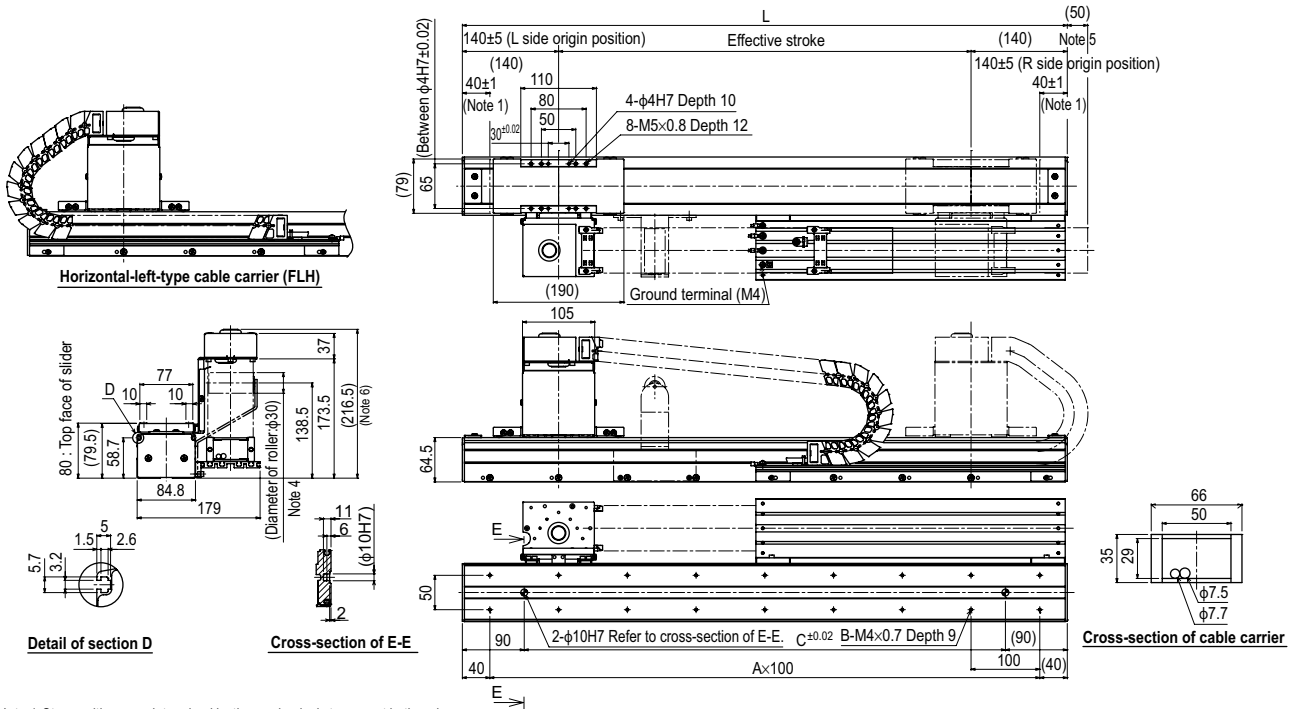
Detail of section G

Cross-section of optional cable carrier

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	380	480	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280
A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46
C	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
D	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170
Weight (kg)	5.8	6.5	7.3	8	8.7	9.4	10.1	10.9	11.6	12.3	13	13.7	14.5	15.2	15.9	16.6	17.3	18.1	18.8	19.5

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. The origin is set on the R side at the time of shipment. It can be changed to the L side by parameter setting.
Note 3. Cable carrier's protrusion amount from the mechanical end (For "L" specs).
Note 4. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

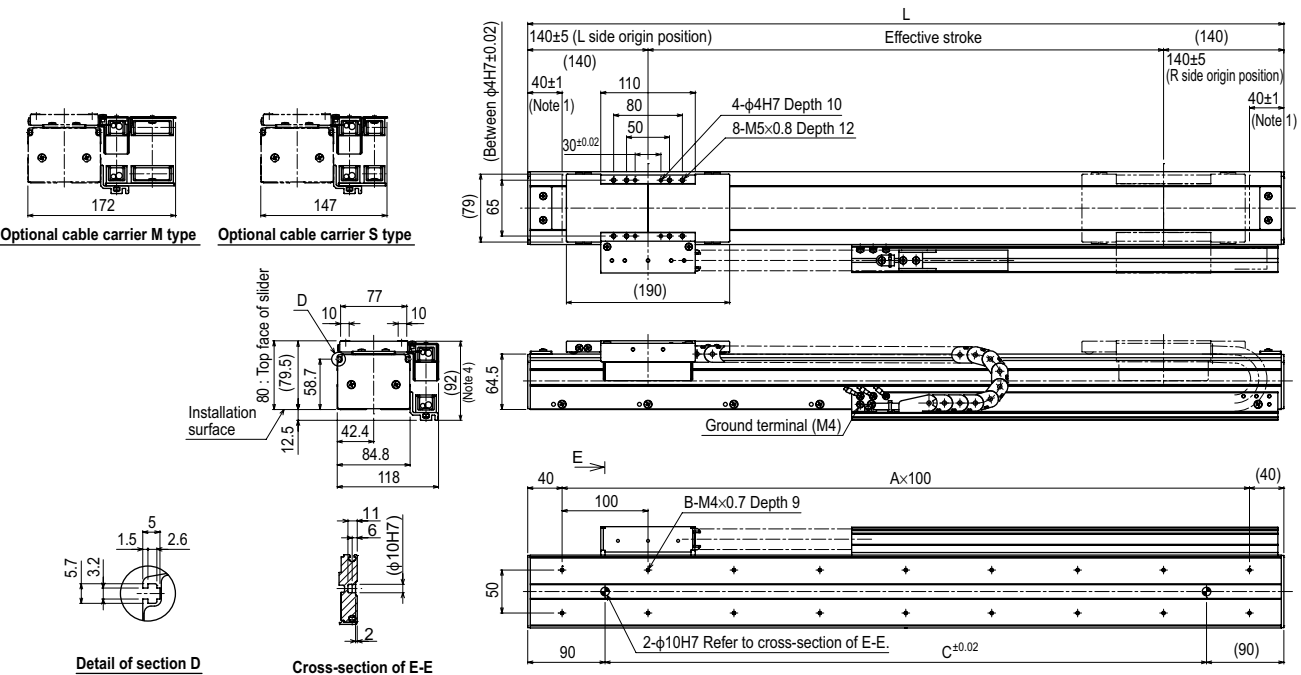
MF7 single carriage horizontal mount model **RH-L** Optional L-type cable carrier



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. The origin is set on the L side at the time of shipment. It can be changed to the R side by parameter setting.
 Note 3. The drawings on this page show the unit with horizontal-right-type cable carrier (RH).
 Note 4. For models with a 3,000mm or longer stroke, a roller is installed to prevent the cable carrier from sagging.
 Note 5. Protrusion is the distance the cable carrier extends from the edge of the unit.
 Note 6. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000
L	380	480	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280	2380	2480	2580	2680	2780	2880	2980	3080	3180	3280	3380	3480	3580	3680	3780	3880	3980	4080	4180	4280
A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
B	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86
C	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100
Weight (kg)	5.8	6.5	7.3	8.0	8.7	9.4	10.1	10.9	11.6	12.3	13.0	13.7	14.5	15.2	15.9	16.6	17.3	18.1	18.8	19.5	20.2	20.9	21.7	22.4	23.1	23.8	24.5	25.3	26.0	26.7	27.4	28.1	28.9	29.6	30.3	31.0	31.7	32.5	33.2	33.9

MF7 single carriage horizontal mount model **FRH** Flat type



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. The origin is set on the L side at the time of shipment. It can be changed to the R side by parameter setting.
 Note 3. The drawings on this page show the unit with horizontal-right-type cable carrier (RH).
 Note 4. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	380	480	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280
A	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46
C	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
Weight (kg)	5.8	6.5	7.3	8	8.7	9.4	10.1	10.9	11.6	12.3	13	13.7	14.5	15.2	15.9	16.6	17.3	18.1	18.8	19.5

MF7D double carriage horizontal mount model **H**

Optional cable carrier M type **Optional cable carrier S type**

Detail of section D **Cross-section of E-E**

Cross-section of cable carrier

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280	2380	2480
A	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
B	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
C	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Weight (kg)	9.3	10.2	11.1	12.0	12.9	13.9	14.8	15.7	16.6	17.5	18.5	19.4	20.3	21.2	22.1	23.1	24.0	24.9	25.8	26.7

Note 1. Position of the table slider when returned to the origin.
 Note 2. Stop positions are determined by the mechanical stoppers at both ends.
 Note 3. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

MF7D double carriage wall mount model **W**

Cross-section of optional cable carrier **Cross-section of F-F**

Detail of section G

Optional cable carrier L type **Optional cable carrier M type** **Standard and S types**

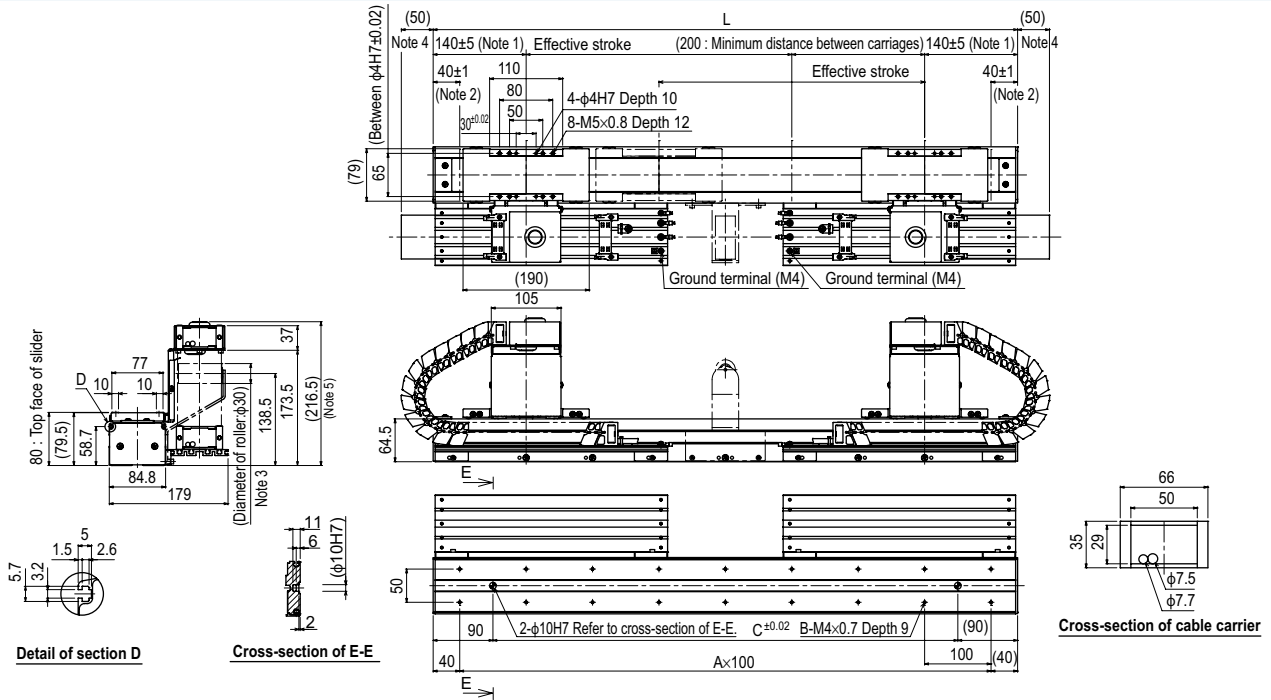
Cross-section of optional cable carrier **Cross-section of F-F**

Standard and L types **Standard and M types** **Standard and S types**

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800
L	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280
A	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
B	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46
C	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
D	220	270	320	370	420	470	520	570	620	670	720	770	820	870	920	970	1020	1070
Weight (kg)	9.3	10.2	11.1	12.0	12.9	13.9	14.8	15.7	16.6	17.5	18.5	19.4	20.3	21.2	22.1	23.1	24.0	24.9

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. Cable carrier's protrusion amount from the mechanical end.
 Note 3. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

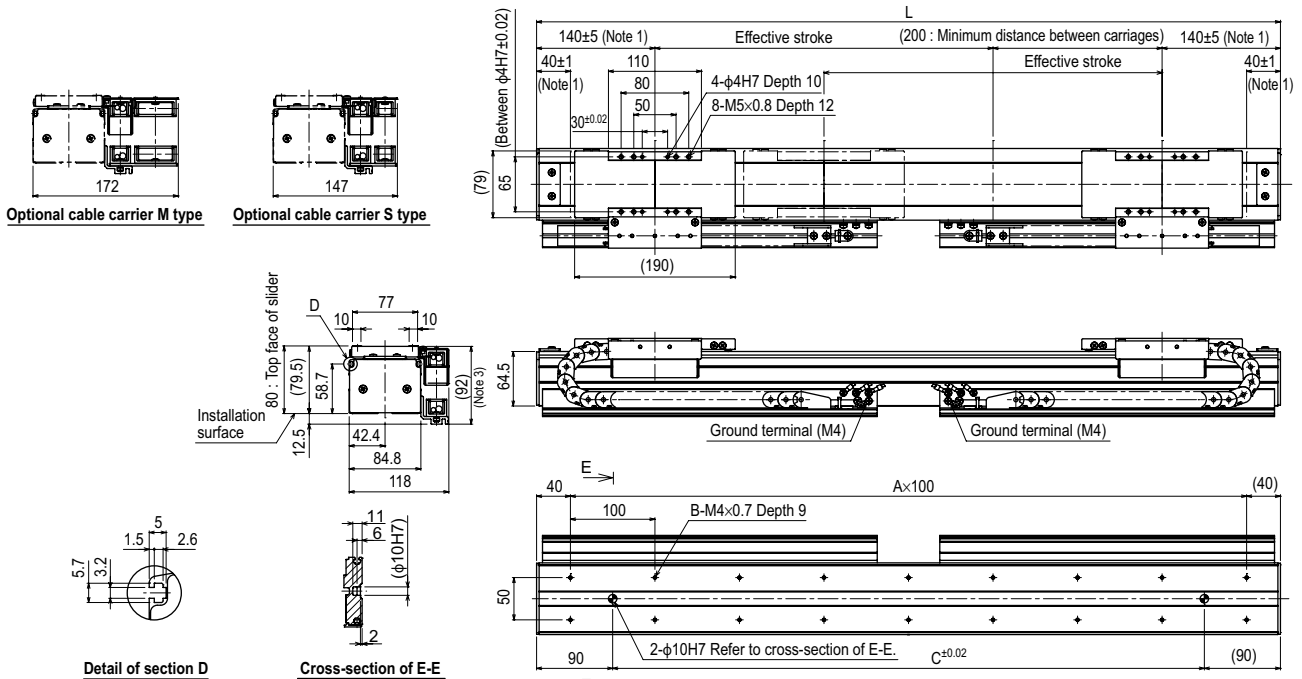
MF7D double carriage horizontal mount model **(H-L)** Optional L-type cable carrier



Note 1. Position of the table slider when returned to the origin.
 Note 2. Stop positions are determined by the mechanical stoppers at both ends.
 Note 3. For models with a 3,000mm or longer stroke, a roller is installed to prevent the cable carrier from sagging.
 Note 4. Protrusion is the distance the cable carrier extends from the edge of the unit.
 Note 5. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800
L	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280	2380	2480	2580	2680	2780	2880	2980	3080	3180	3280	3380	3480	3580	3680	3780	3880	3980	4080	4180	4280
A	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
B	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86
C	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500	2600	2700	2800	2900	3000	3100	3200	3300	3400	3500	3600	3700	3800	3900	4000	4100
Weight (kg)	9.3	10.2	11.1	12.0	12.9	13.9	14.8	15.7	16.6	17.5	18.5	19.4	20.3	21.2	22.1	23.1	24.0	24.9	25.8	26.7	27.7	28.6	29.5	30.4	31.3	32.3	33.2	34.1	35.0	35.9	36.9	37.8	38.7	39.6	40.5	41.5	42.4	43.3

MF7D double carriage horizontal mount model **(FH)** Flat type



Note 1. Position of the table slider when returned to the origin.
 Note 2. Stop positions are determined by the mechanical stoppers at both ends.
 Note 3. Depending on the stroke and the operating conditions, the cable carrier bending radius might be larger, making it higher than the dimensions shown in the diagram.

Effective stroke	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L	580	680	780	880	980	1080	1180	1280	1380	1480	1580	1680	1780	1880	1980	2080	2180	2280	2380	2480
A	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
B	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
C	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Weight (kg)	9.3	10.2	11.1	12.0	12.9	13.9	14.8	15.7	16.6	17.5	18.5	19.4	20.3	21.2	22.1	23.1	24.0	24.9	25.8	26.7