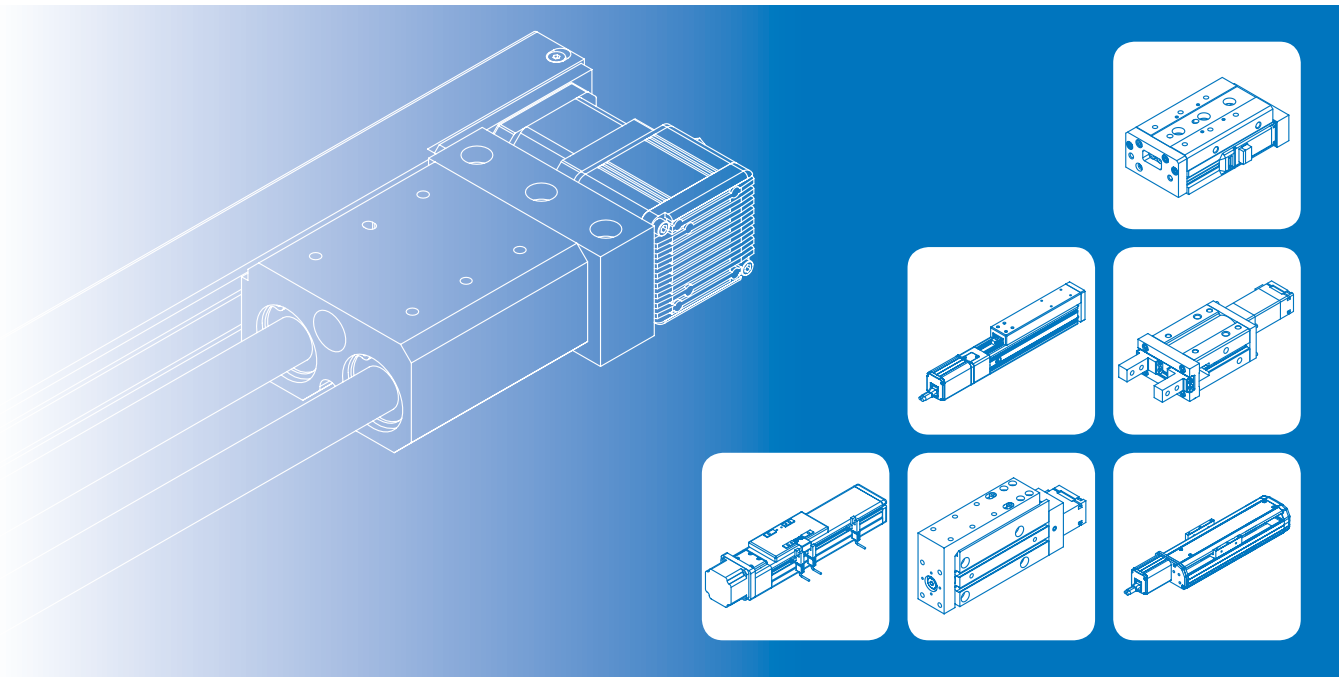
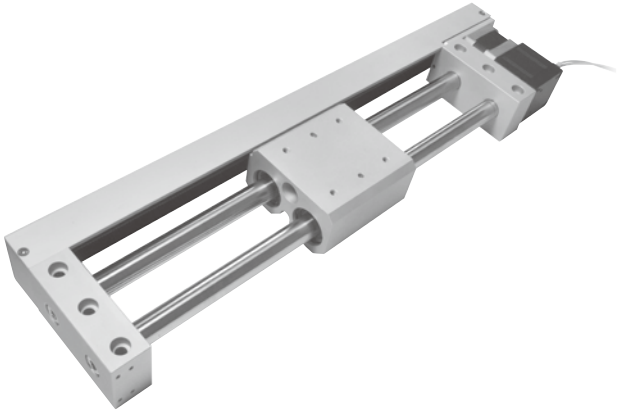
ELECTRIC ACTUATOR



MEAT series

SLIDER ELECTRIC CYLINDER - BELT DRIVEN (WITH MOTOR)



Features

- Reducing the length from installation side to surface ofslide to save space.
- Using servo stepper motor to enhance accuracy by driving timing belt with minimum pitch.
- Using four linear ball bearings to sustain the load of slide and maintain stable and smooth motion.
- Integrate the controller into stepper motor and it has memory function for programming.
- Three-phase stepper motor: incremental type 10000P/R, including 3 input, 2out.
- All in one: program control mode, pulse control mode and terminal control mode.

Specification

Model	MEAT
Tube I.D. (mm)	25
Bearing	Linear ball bearings
Velocity	48~1000 mm/s
Horizontal load	5 kg
Repeatability	± 0.1 mm
Ambient temperature	+5°C~ +40°C

* Please reserve 5cm space around the installation slide for maintenance purpose.

Table for standard stroke

Tube I.D.	Stroke (mm)	Max. stroke
25	100,200,300,400,500,600,700	750

* Minimum stroke unit 1mm.
* Please consult us if stroke out of specification.

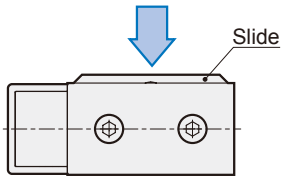
Order example

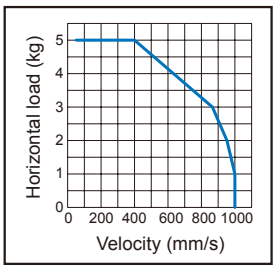
MEAT — 25 — 200 — 1

- MODEL
- TUBE I.D.
- STROKE
- Blank: Standard
  1: With I/O card
  (Should be ordered alone EAT-1: Expansion I/O card)

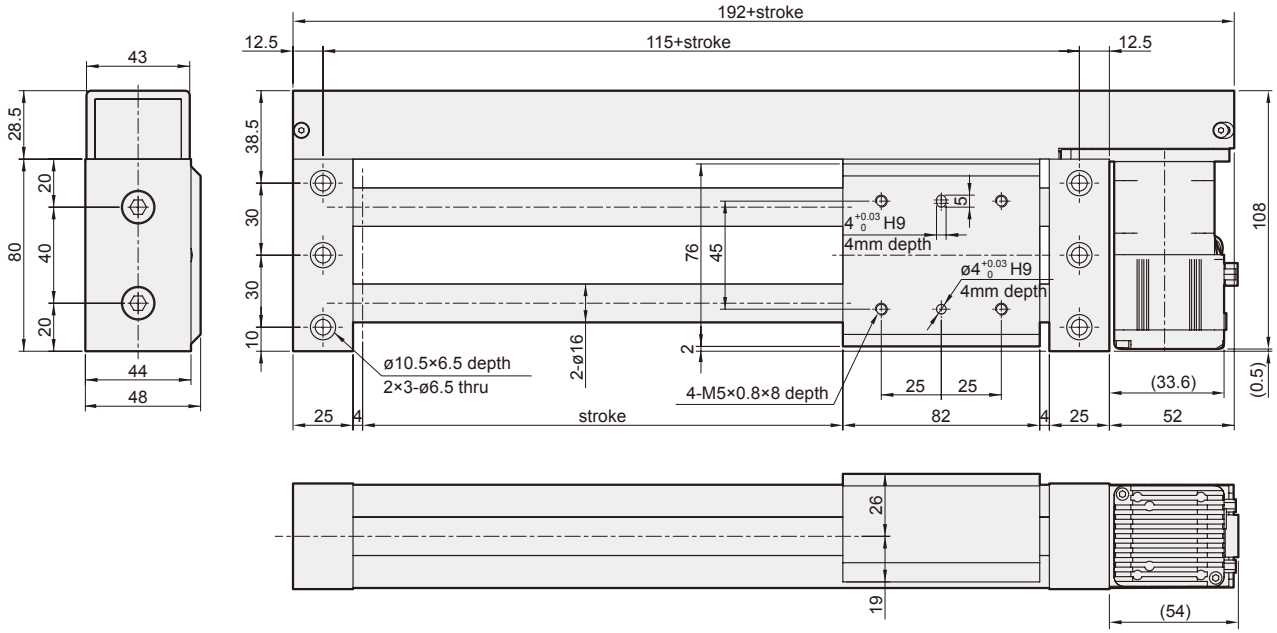
Velocity-Horizontal load

Loading direction





Dimensions

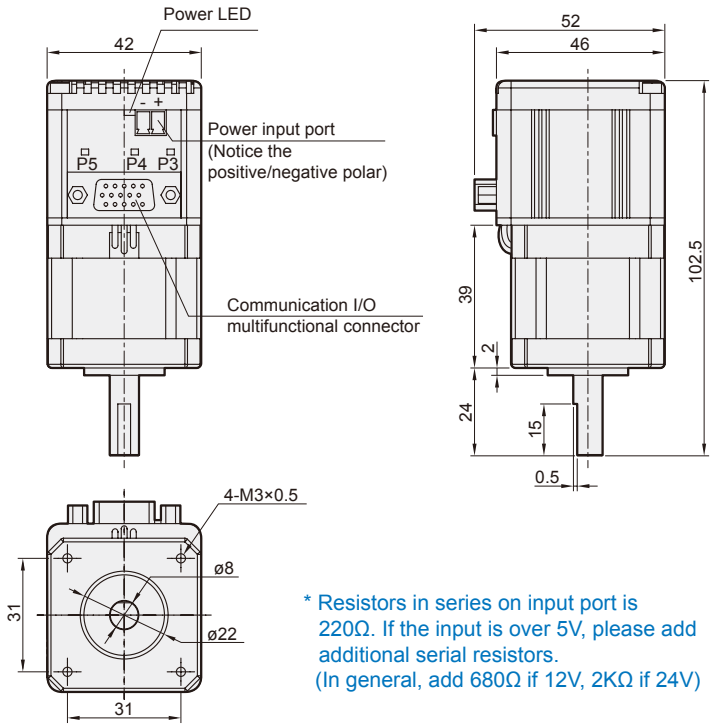


Specification

Motor size		Servo type three-phase stepper motor
Power		DC 24V
Rated current / Max. instant current		4A / 6A
Rated torque		0.25 N.m
Cooling type		Natural cooling
Resolution encoder		Incremental type 10000 resolution/per cycle
Control mode		Position, terminal control, Modbus communication control
Position control	Max input pulse frequency	Differential Signaling: Below 500K PPS, Open Collector Signaling: 200K PPS
	Pulsed mode	CW/CCW, Pulse/DIR
	Smoothing filter	Cushion, Trapezoidal velocity profile acceleration /deceleration
	Electronic gear ratio	Electronic gear ratio (A/B) > 1/9999, A/B < 9999
	Registration complete check	0 ~ 999 Pulse
Terminal control	Internal operation instruction	Executing movement command from Windows Terminal
	Scripts edit control	Program input point, programmable set external INPUT ON/OFF signal for positioning.
Interface		RS232(for Windows Terminal) / RS485 / Modbus
JOG function		Run manually(The speed is according to the parameter of configuration)
Brake function		Output the control signal of Z-Axis brake, according to the servo ON/OFF status.
Abnormal function		Servo control stop, positive / negative turn actuation restricted
Protective device		Over current, over voltage, over temperature, encoder abnormal, low voltage, input pulse over limit, follow abnormal detection.
Input signal		Servo control ON/OFF, zero point signal, pulse control signal.
Output Signal		Servo control ready (Z axis brake control signal), location complete, actuation abnormal output (parameter setting).

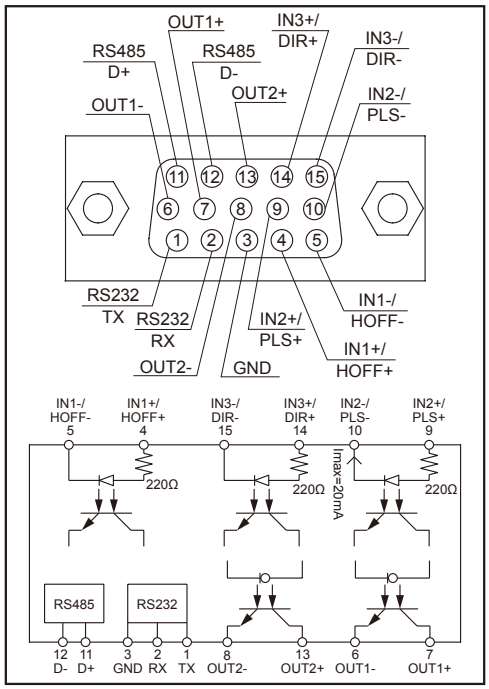
* Recommend installation environment: Places without moisture, oily dusty, corrosive and flammable liquid. Without floating dusty and metallic particle. Firm and static places without electrical interference, megathermal equipment.

Dimensions

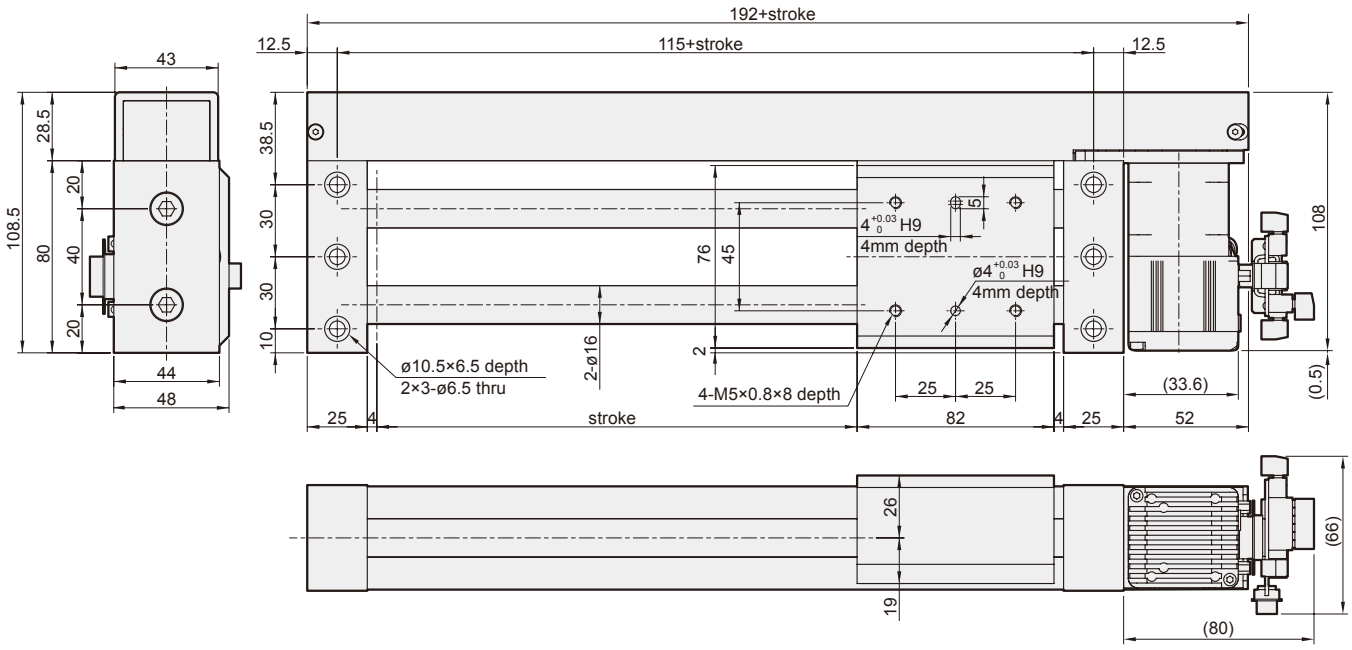


* Resistors in series on input port is 220Ω. If the input is over 5V, please add additional serial resistors.
(In general, add 680Ω if 12V, 2KΩ if 24V)

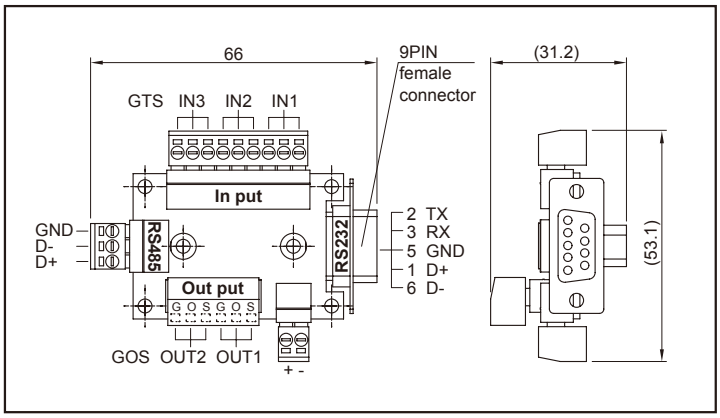
Definition of three-row 15pin DE-15 connector



Dimensions(Including expansion I/O card)



Expansion I/O card



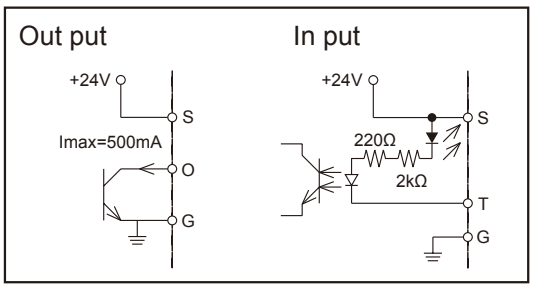
* When in control mode, all inputs/outputs are not defined and shouldbe defined by program. (I/O card is optional)

Order example

EAT — 1

Expansion I/O card

Outputs/inputs circuit diagram



METB series

SLIDER ELECTRIC CYLINDER - BELT DRIVEN (WITHOUT MOTOR)

mindman

Features

- Belt driven unit with railway integrated.
- Extruded aluminum anodized 6060 alloy, tempered stainless steel protection band.
- Carriage with sealed system to protect against pollution.

Specification

Model			METB		
Size		mm	42	55	80
Max. speed		m/s	3	3	3
Max. stroke length		mm	6000	6000	6000
Min. stroke length		mm	100	100	100
Pulley drive ratio		mm	90	120	160
Number of teeth of pulley		mm	18	24	32
Teeth belt with steel reinforced polyure-thane ATL 5 profile clearance 0, width		mm	12	16	25
Max rpm		g/min	2000	1500	1150
Base weight		Kg	1.6	4.4	6
Add for 100 mm of stroke		Kg	0.25	0.37	0.9
Max. load	Fx	N	460	820	1650
	Fy	N	1560	1850	4500
	Fz	N	1560	1850	4500
Moments	Mx	Nm	20	25	80
	My	Nm	55	120	450
	Mz	Nm	55	120	450
Inertia moment aluminum profile	Ix	cm^4	11.8	36	183
	Iy	cm^4	14.2	45	226
Repeatability		mm	±0.05	±0.05	±0.05
Max. radial load on input shaft		N	220	300	300
No load torque		Nm	>0.1	>0.5	0.9
Sensor switch (*)			RCI		

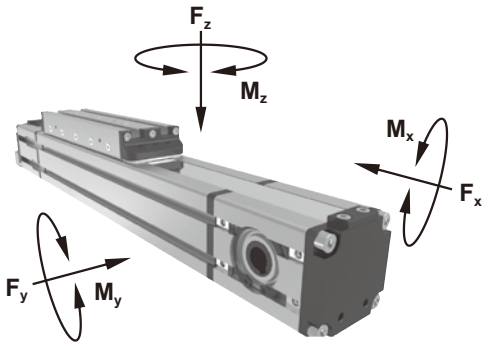
* RCI specification, please refer to page 5-7.

Max values for dynamic conditions.

Please refer to the following formula when combined loads are applied.

$$\frac{Fy_A}{Fy} + \frac{Fz_A}{Fz} + \frac{Mx_A}{Mx} + \frac{My_A}{My} + \frac{Mz_A}{Mz} \leq 1$$

* The **A** letters show the calculated value.



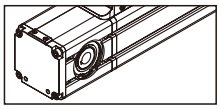
Order example

METB — 42 — 0100 — F08 L — EM2A

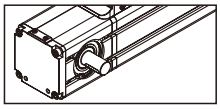
Model

METB

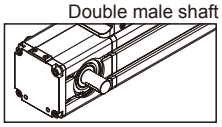
Female shaft



Male shaft



Double male shaft



Size (mm)

42	42×42
55	55×55
80	80×80

Stroke

100~6000 mm (4 codes)

* Minimum stroke unit 1mm.

Shaft versions

Size	Type	ø	Part No.
42	Female shaft	8	**F08**
	Male shaft	12	**M12**
	Double male shaft	12	**D12**
55	Female shaft	8	**F08**
	Male shaft	16	**M16**
	Double male shaft	16	**D16**
80	Female shaft	19	**F19**
	Male shaft	19	**M19**
	Double male shaft	19	**D19**

Male shaft

L	Left shaft
R	Right shaft

Accessory

E	End cap mounting
M□ *1	Mid section mounting
A□ *2	Limit switch adapters

* A type only for size 80.

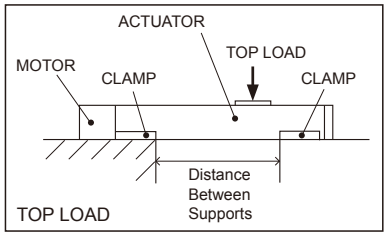
*1. Number of accessory

Blank	1 set (2 pcs)
2	2 set (4 pcs)
n	"n" set (n×2 pcs)

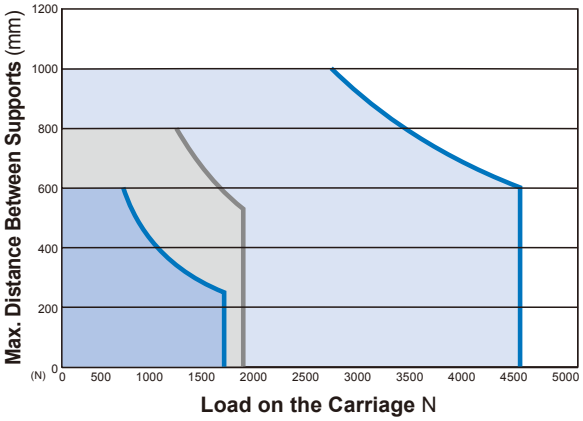
*2. Number of accessory

Blank	1 pc
2	2 pcs
n	"n" pcs

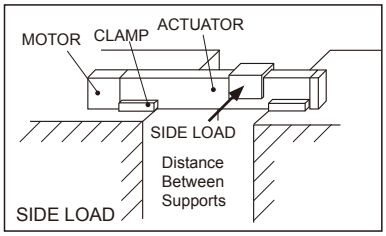
End supported top load



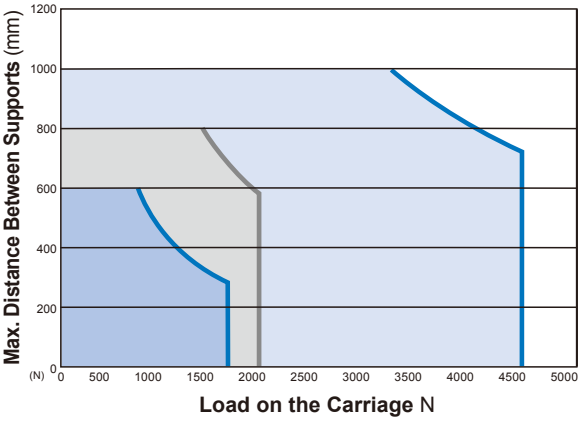
METB-42
METB-55
METB-80



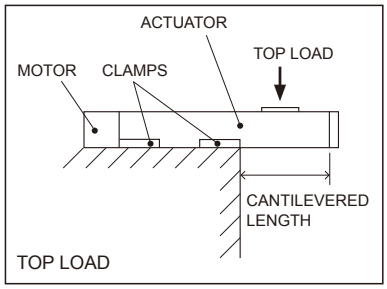
End supported side load



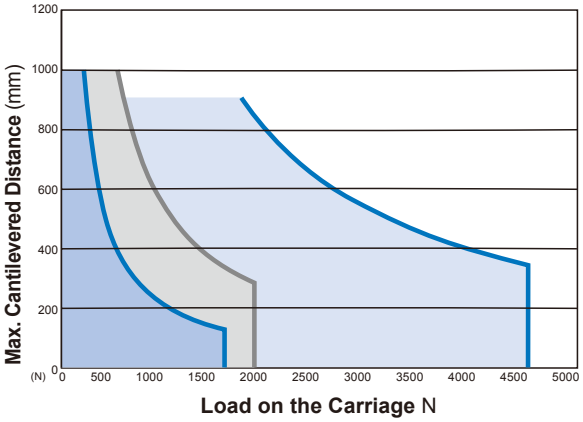
METB-42
METB-55
METB-80



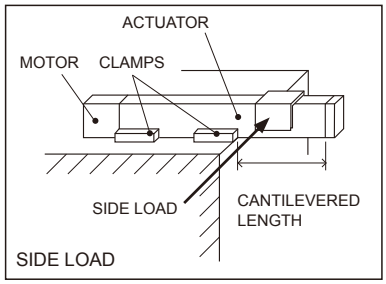
Cantilevered top load



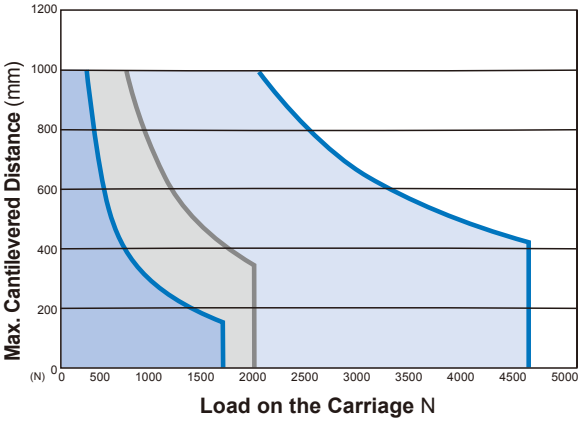
METB-42
METB-55
METB-80



Cantilevered side load



METB-42
METB-55
METB-80

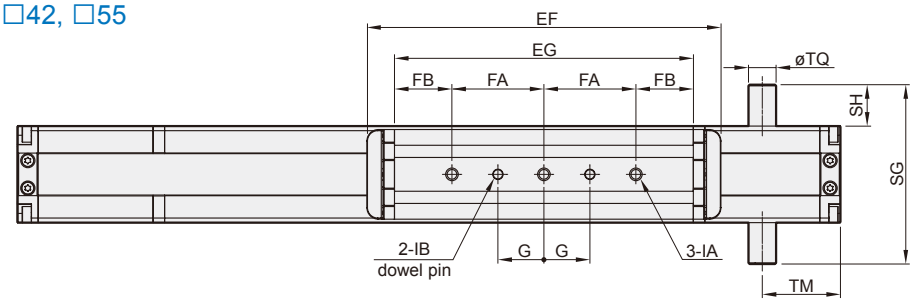


METB Dimensions □42~□80

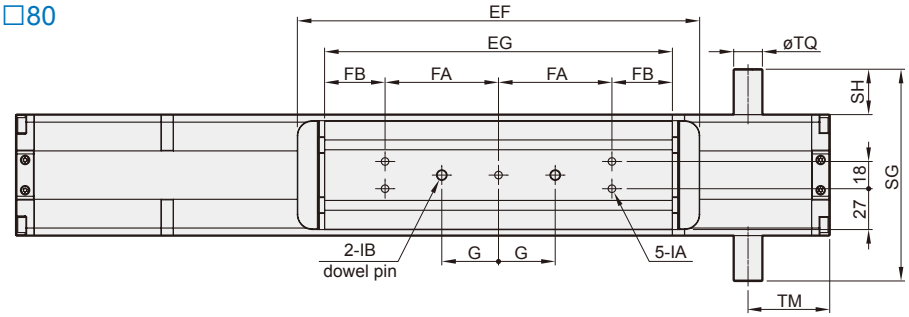
SLIDER ELECTRIC CYLINDER - BELT DRIVEN (WITHOUT MOTOR)

mindman

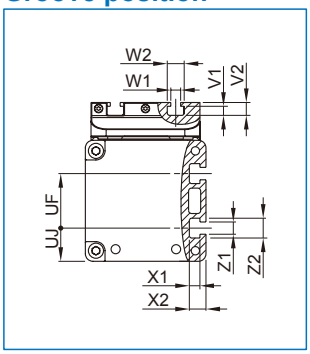
□42, □55

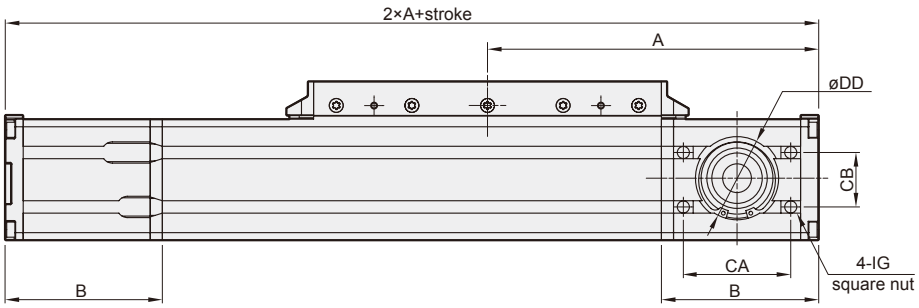


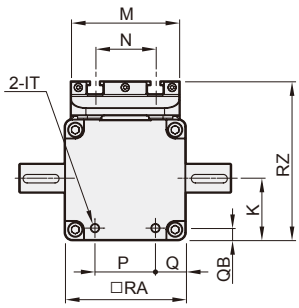
□80



Groove position

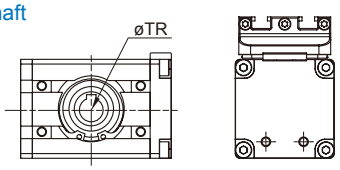




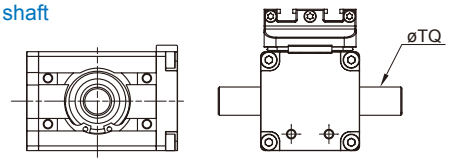


Shaft versions

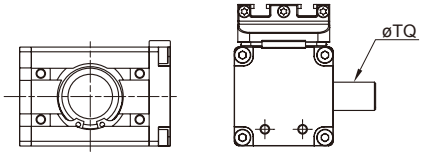
Female shaft



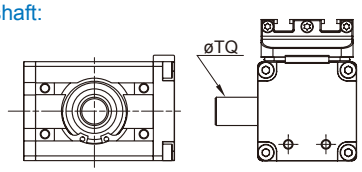
Double male shaft



Single male shaft:
side right



Single male shaft:
side left

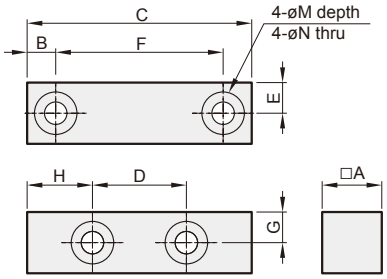


Code / Tube I.D.	A	B	CA	CB	DD	EF	EG	FA	FB	G	IA	IB	IG
42	129	64	max. 42	19.5	ø28×H7×1.5 depth	154	130	40	25	20	M5×0.8×5 depth	ø4×H7×5 depth	M5×0.8 DIN 562
55	166	88	max. 55	22	ø32×H7×1.5 depth	190	150	55	20	30	M5×0.8×7.5 depth	ø5×H7×5 depth	M5×0.8 DIN 562
80	219	104	max. 71	35.9	ø55×H7×1.5 depth	266	230	75	40	37.5	M6×1.0×10 depth	ø6×H7×10 depth	M8×1.25 DIN 562

Code / Tube I.D.	IT	K	M	N	P	Q	QB	RA	RZ	SG	SH	TM	TQ	TR	UF	UJ	V1	V2	W1	W2	X1	X2	Z1	Z2
42	M4×7 depth	21	39	20	16	13	7	42	60	82	20	34	12	8	19.5	11	3.2	4.9	5.3	8.6	3.2	4.9	5.3	8.6
55	M5×7 depth	25	50	28	23	16	8	55	76	92	18.5	48.5	16	8	22	16.5	4.2	6.2	5.2	8.4	4.3	6.3	5.3	8.6
80	M6×8 depth	41	72	40	40	20	8	80	105	140	30	54	19	19	36	22	6	8.5	6.5	11.2	7	11	8.2	13.2

End cap mounting

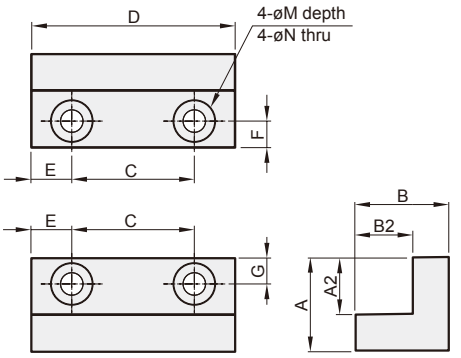
(2 pcs/set)



Code / Size	A	B	C	D	E	F	G	H	M	N	Order number
METB-42	14	5	42	16	7	32	7	13	8×4.4 depth	4.5	**ETB42-1**
METB-55	15	7	55	23	7.5	41	7	16	10×5 depth	5.5	**ETB55-1**
METB-80	16	8	80	40	8	64	8	20	11×6 depth	6.6	**ETB80-1**

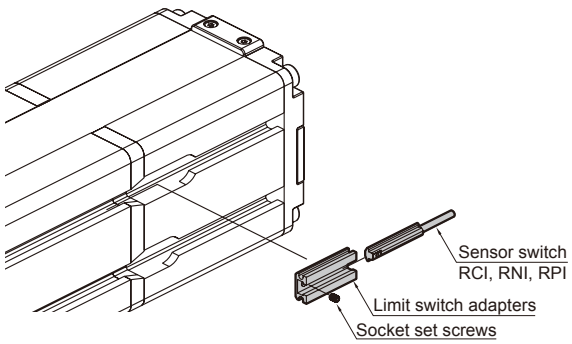
Mid section mounting

(2 pcs/set)



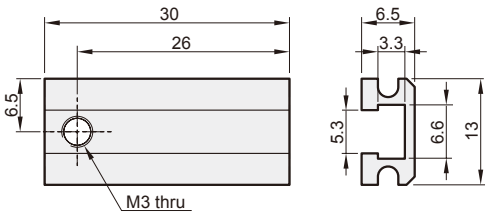
Code / Size	A	A2	B	B2	C	D	E	F	G	M	N	Order number
METB-42	17	12	17	12	25	40	7.5	6	6	10×3.5 depth	5.5	**ETB42-2**
METB-55	23	14	23	14	30	50	10	6.5	6.5	10×5.5 depth	5.5	**ETB55-2**
METB-80	32	19	34	21	40	60	10	8	10	15×8.6 depth	9	**ETB80-2**

Installation of sensor switch



Limit switch adapters

ETB80-3 (Only for size **80**)



MEMO

NOTE

METG / METS Slider electric cylinder

Use where	Drive mode	Specification	Motor output (W)	Width (mm)	Repeatability (mm)	Ball screw spec		Ball screw spec (kg)		Max. speed *1 (mm/s)	
						Outer diameter (mm)	Lead (mm)	Horizontal (mm)	Vertical (mm)		
Standard	Ball screw	**METG-4**	50W	44	±0.01	8	1	25	8	50	
							2.5	25	8	125	
		METG-5	100W	54	±0.01	12	2	30	10	100	
							5	30	10	250	
							10	15	5	500	
							20	10	2.5	1000	
		METS-10	100W	102	±0.01	16	5	50	12	250	
							10	30	8	500	
							16	22	5	800	
							20	18	3	1000	
		METS-12	100W	102	±0.01	16	5	50	12	250	
							10	30	8	500	
							16	22	5	800	
							20	18	3	1000	
		METS-13	200W	135	±0.01	16	5	70	17	250	
							10	47	12	500	
							16	30	6	800	
							20	24	4	1000	
		METS-14	200W	135	±0.01	16	5	95	27	250	
							10	75	18	500	
							16	44	7	800	
							20	35	6	1000	
			400W	135	±0.01	16	5	110	33	250	
							10	88	22	500	
							16	48	10	800	
							20	40	8	1000	
		METS-17	400W	170	±0.01	20	5	120	40	250	
							10	110	30	500	
							20	75	14	1000	
							40	35	7	2000	
			750W	170	±0.01	20	5	120	50	250	
							10	120	40	500	
							20	83	25	1000	
							40	50	10	2000	
		METS-22	750W	220	±0.01	25	5	150	55	250	
						25	10	150	45	500	
						25	25	120	20	1250	
						20	40	60	10	2000	

*1. The highest speed is based on the maximum servo motor's rpm (3000).
The highest speed is based on the maximum stepping motor's rpm (500).

METG / METS Specification index

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

		Stroke (mm) & Max. speed (mm/s) *2 Speed																														Page
	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	
	50							45	40	35	30																					4-24
	125							112	100	87	75																					
	100													90	80	70	60															4-28
	250													225	200	175	150															
	500													450	400	350	300															
	1000													900	800	700	600															
	250																225	200	175	150	125											4-32
	500																450	400	350	300	250											
	800																720	640	560	480	400											
	1000																900	800	700	600	500											
	250																225	200	175	150	125											4-37
	500																450	400	350	300	250											
	800																720	640	560	480	400											
	1000																900	800	700	600	500											
	250																225	200	175	150	125											4-42
	500																450	400	350	300	250											
	800																720	640	560	480	400											
	1000																900	800	700	600	500											
	250																225	200	175	150	125											4-47
	500																450	400	350	300	250											
	800																720	640	560	480	400											
	1000																900	800	700	600	500											
	250																225	200	175	150	125											
	500																450	400	350	300	250											
	800																720	640	560	480	400											
	1000																900	800	700	600	500											
	250																		225		200		175		150							4-52
	500																		450		400		350		300							
	1000																		900		800		700		600							
	2000																		1800		1600		1400		1200							
	250																		225		200		175		150							
	500																		450		400		350		300							
	1000																		900		800		700		600							
	2000																		1800		1600		1400		1200							
	250																			225		200		175		150		125		100		4-59
	500																			450		400		350		300		250		200		
	1250																			1125		1000		875		750		625		500		
	2000																		1800		1600		1400		1200		1000		800		600	

*2. Written here is the standard strokes maximum safe speed. If over this speed, may cause serious vibration.

METGC / METSC Slider electric cylinder

Use where	Drive mode	Specification	Motor dimension (mm)	Width of profile (mm)	Repeatability (mm)	Ball screw spec (Accuracy C7)		Max. payload (kg)		Max. speed *1 (mm/s)	
						Outer diameter (mm)	Lead (mm)	Horizontal (mm)	Vertical (mm)		
Standard	Ball screw	**METGC-4**	□35	44	±0.01	8	1	24	3.5	58	
							2.5	24	7.5	145	
		METGC-5	□42	54	±0.01	12	2	40	15	113	
							5	40	15	288	
							10	40	3.2	508	
							20	13.5	1.2	917	
		METSC-10	□42	102	±0.01	16	5	50	12	250	
							10	30	8	500	
							20	15	4	1000	
		METSC-12	□42	102	±0.01	16	5	50	12	250	
							10	30	8	500	
							20	18	4	1000	
		METSC-13	□42	135	±0.01	16	5	70	12	250	
							10	47	8	500	
							20	24	5	1000	

*1. The working condition of max. speed is restricted limited. Please refer to the curve graph of speed and loading in this catalog.
*2. The number written in the column means the highest safe speed within stroke.
If the speed is over the value shown in the chart, the vibration will be caused on the actuator.

MEQYC Rod electric cylinder

Use where	Drive mode	Specification	Motor dimension (mm)	Width of profile (mm)	Repeatability (mm)	Ball screw spec (Accuracy C7)		Max. payload (kg)		Max. speed *1 (mm/s)	
						Outer diameter (mm)	Lead (mm)	Horizontal (mm)	Vertical (mm)		
Standard	Ball screw	**MEQYC-50**	□42	52	±0.01	12	5	30	15	250	
							10	15	12	500	
		MEQYC-50D	□42	52	±0.01	12	5	30	15	250	
							10	15	12	500	
		MEQYC-50L	□42	52	±0.01	12	5	30	15	250	
							10	15	12	500	
		MEQYC-65	□56	65	±0.01	16	5	110	30	250	
							10	88	20	500	
							20	40	10	1000	
		MEQYC-65D	□56	65	±0.01	16	5	110	30	250	
							10	88	20	500	
							20	40	10	1000	
		MEQYC-65L	□56	65	±0.01	16	5	110	30	250	
							10	88	20	500	
							20	40	10	1000	

*1. The working condition of max. speed is restricted limited. Please refer to the curve graph of speed and loading in this catalog.
*2. The number written in the column means the highest safe speed within stroke.
If the speed is over the value shown in the chart, the vibration will be caused on the actuator.

METGC / METSC / MEQYC Specification index

SLIDER / ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

	Stroke(mm) & Max. speed (mm/s) *2 Speed																					Page
	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
		58				55	50	45	40	35	30												4-64
		145				137.5	125	112.5	100	87.5	75												
						113						110	100	90	80	70	60						4-68
						288						275	250	225	200	175	150						
						508							500	450	400	350	300						
						917								900	800	700	600						
											250						225	200	175	150	125	100	4-72
											500						450	400	350	300	250	200	
											1000						900	800	700	600	500	400	
											250						225	200	175	150	125	100	4-76
											500						450	400	350	300	250	200	
											1000						900	800	700	600	500	400	
											250						225	200	175	150	125	100	4-80
											500						450	400	350	300	250	200	
											1000						900	800	700	600	500	400	

	Stroke(mm) & Max. speed (mm/s) *2 Speed																					Page
	Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
		250				200	150																4-90
		500				400	300																
		250				200	150																4-93
		500				400	300																
		250				200	150																4-96
		500				400	300																
			250					200		150													4-99
			500					400		300													
			1000					800		600													
			250					200		150													4-102
			500					400		300													
			1000					800		600													
			250					200		150													4-105
			500					400		300													
			1000					800		600													

MES* Miniature electric cylinder

Use where	Drive mode	Specification	Motor dimension (mm)	Width of profile (mm)	Repeatability (mm)	Ball screw spec (Accuracy C10)		Max. payload(kg)		Rated thrust (N)	
						Outer diameter (mm)	Lead (mm)	Horizontal (mm)	Vertical (mm)		
Standard	Ball screw	**MESH-20**	□42	102	±0.01	16	2	6	2	466	
							6	2	0.5	75	
		MESF-20	□42	102	±0.01	16	2	6	2	466	
							6	2	0.5	75	
		MESS-20	□42	135	±0.01	16	2	6	2	466	
							6	2	0.5	75	

*1. The working condition of max. speed is restricted limited.
Please refer to the curve graph of speed and loading in this catalog.

MEHC Electric gripper

Use where	Drive mode	Specification	Motor dimension (mm)	Width of profile (mm)	Repeatability (mm)	Open/close stroke *1 (mm/s)	Open/close speed (mm/s)	Main body weight *2 (g)	
Standard	Lead screw	**MEHC-20**	□25	50	±0.02	10	5~50	368	
		MEHC-25	□25	63	±0.02	14	5~50	552	

*1. Total stroke of both sides.
*2. Weight of model with motor.

MES* / MEHC Specification index

MINIATURE ELECTRIC CYLINDER / ELECTRIC GRIPPER (WITH MOTOR)

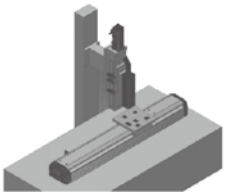
	Max. speed *1 (mm/s)	Stroke (mm) & Max. speed (mm/s) *2 ■ Speed						Page
		Stroke	30	50	100	150	200	250	
	50	50							4-108
	250	250							
	50	50							4-110
	250	250							
	50	50							4-112
	250	250							

	Gripping force (N)											Open/close speed (mm/s)											Page
	10	20	30	40	50	60	70	80	90	100	110	5	10	15	20	25	30	35	40	45	50	55	
		22~98										5~50											4-114
		22~98										5~50											4-116

Applications for single axis

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE

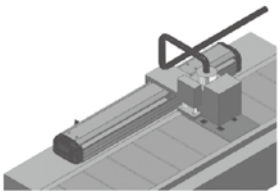
Suitable industry: PCB / CD / DVD / Semi-conductor / Packaging / Testing



Spray-Printing device for PCB substrate boards

Fixes the substrate board onto the electric cylinder. Use the character of equal-speed sliding to execute the spray printing.

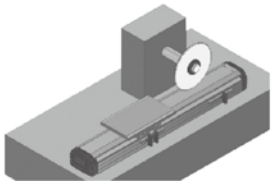
Use specifications
METS-12 / METS-14 / METSC-12 / METSC-13



Surface cleaning device for circuit boards

Fixes the plasma on to the motor slide and moves back and forth on top of the conveyor to clean surface for circuit boards.

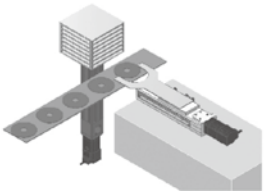
Use specifications
METS-12 / METS-14 / METSC-12 / METSC-13



Cutting device for PCB circuit boards

Place the PCB board on the electric cylinder and do the cutting by using external cutting devices.

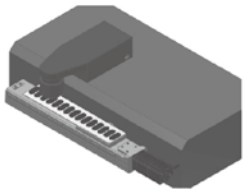
Use specifications
METS-12 / METS-14 / METS-17 / METSC-12 / METSC-13



Compact disc receiving device

Use the feature “multi-positioning” of electric cylinder to do loading and unloading of the disc box.

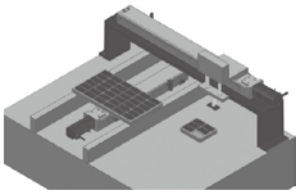
Use specifications
METG-5 / METS-12 / METS-14 / METGC-5 / METSC-12 / MEQYC-65



IC printer device

Place the IC device on the electric cylinder. Use the character of equal-speed sliding and capable to adapt servo motor and stepping motor to execute the laser printing.

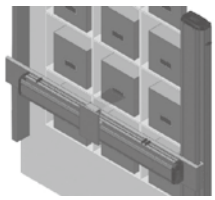
Use specifications
METG-5 / METS-10 / METGC-5 / METSC-10



Aligning device for pick-and-place of IC boards

Install two single electric cylinder to combine a simple IC pick-and-place system.

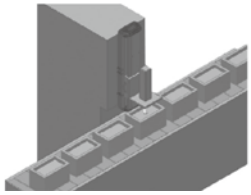
Use specifications
METG-5 / METS-10 / METS-14 / METGC-5 / METSC-10 / METSC-13



Barcode scanning device

Install the X-Y multi-axis system to automated warehouse to execute the scanning of barcode.

Use specifications
METS-14 / METS-17 / METS-22 / METSC-10 / METSC-12 / METSC-13



Fillings device

In order to adapt to filling of different products, we can execute the filling at different height of position by programmable feature.

Use specifications
METG-5 / METS-12 / METS-14 / METGC-4 / METSC-12 / METSC-13

Applications for single axis

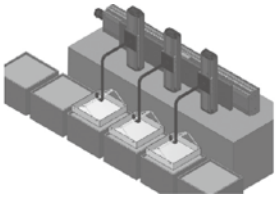
SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE

Suitable industry: Automotive / Component processing / Assembling / Surface processing / Mobile phones / Traditional manufacturing / Food / Raw material

Tire surface check machine

Mount the C.C.D on the electric cylinder. Use the character of equal-speed sliding to check the defects on the tire surface and report to the on-site worker immediately.

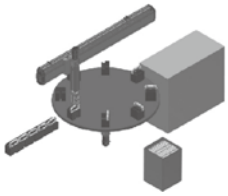
Use specifications
METG-5 / METS-10 / METS-12 / METGC-4 / METSC-10 / METSC-12



Mobile device for surface processing

Mount the working piece on the electric cylinder and dip it into the solvents. Use the character of moving up and down, left and right at high speed to do the surface treatment processing.

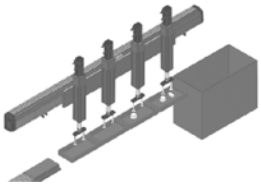
Use specifications
METS-14 / METS-17 / METS-22 / METSC-10 / METSC-12 / METSC-13



Assembling device on disc machine

Install two single electric cylinders to combine an X-Y system. Then mount it onto the disc machine to do the components assembly.

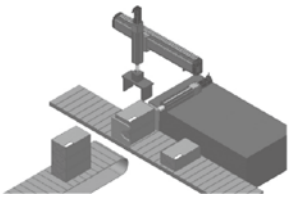
Use specifications
METS-12 / METS-14 / METSC-12 / MEQYC-50



Assembling device for small components

Use the feature multi-positioning of the electric cylinder to drive the sucker and cylinder to do the assembly of small components.

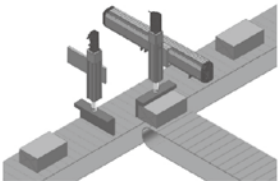
Use specifications
METG-5 / METS-10 / METS-12 / METSC-12 / MEQYC-50



Conveyance device for assembly lines

Utilizes uniaxial motor slides to assemble into a XY mechanism and performs conveyance of items on top of the conveyor.

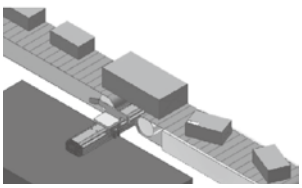
Use specifications
METS-12 / METS-14 / METS-17



Separator device for assembly lines

Utilizes motor slides to categorize products on the assembly line with conveyors.

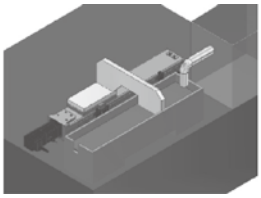
Use specifications
METS-12 / METS-14



Aligning device for packaging

Utilizes slides with servo motors to align products of different sizes on the moving conveyors, which substantially saves the working time.

Use specifications
METS-12 / METS-14 / METS-17



Leveling mechanism for solvent surfaces

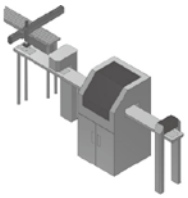
Utilizes the characteristics of motor slides moving at equal speeds to level the surface of glutinous solvents.

Use specifications
METG-5

Applications for multi axis

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE

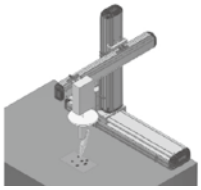
Suitable industry: PCB circuit boards / CD / DVD / Mobile phones



Conveyance device for circuit boards

Assembles two uniaxial motor slides into a X-Z biaxial mechanism and conveys the circuit board across left and right as well as up and down.

Use specifications
X axis METS-14 / Z axis METS-12



Auto-soldering device

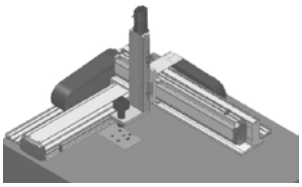
Fixes soldering device onto the X-Y-Z axes assembled from uniaxial motor slides, which can solder for circuit board components.

Use specifications
X axis METS-14 / Y axis METS-12 / Z axis METS-14

Piling device for circuit boards

Utilizes uniaxial motor slides to assemble into X-Y-Z axes, which can be used on receiver mechanism for circuit board assembly lines.

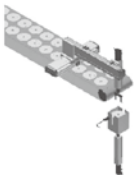
Use specifications
X axis METS-14 / Y axis METS-12 / Z axis METG-5



Visual checking device for CCD imaging

Fixes the visual system onto the X-Y-Z axes and performs AOI checks on the appearance of PCB boards.

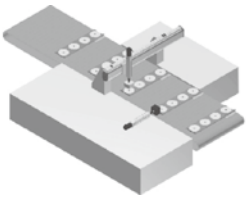
Use specifications
X axis METS-14 / Y axis METS-12 / Z axis METG-5



Piling device for compact discs

Utilizes uniaxial motor slides to assemble into a X-Y-Z axes, which can be used on receiver mechanism for compact disc assembly lines.

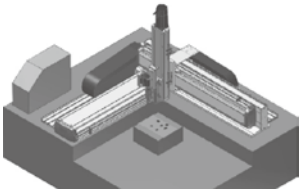
Use specifications
X axis METS-14 / Y axis METS-10 / Z axis METG-5



Ultra-violet exposure device for compact discs

Utilizes uniaxial motor slides to assemble into a X-Z bi-axial mechanism, which can be used on ultra-violet exposure devices for compact discs.

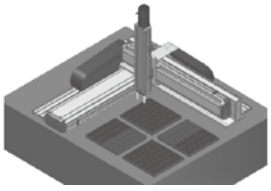
Use specifications
X axis METS-12 / Z axis METG-5



Screw-tightening device

Utilizes the X-Y-axis mechanism for pick-and-place of screws.

Use specifications
X axis METS-12 / Y axis METG-5



Pick-and-place device for small components

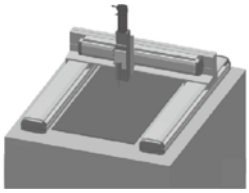
Utilizes uniaxial motor slides to assemble into X-Y-Z axes, which can be used on pick-and-place devices for small components.

Use specifications
X axis METS-14 / Y axis METS-12 / Z axis METG-5

Applications for multi axis

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE

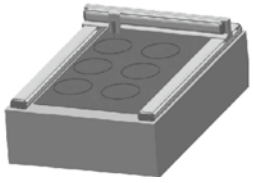
Suitable industry: LCD / Automotive / Machine processing / Solar / Food



Rubberizing device for large-size LCD glass substrate boards

Utilizes two synchronous X-axis motor slides and one Y-axis slide along with Z-axis to assemble into one package of high-speed rubberizing devices for LCD glass substrate boards.

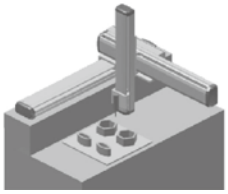
Use specifications
X axis METS-14-Two / Y axis METS-12 / Z axis METG-5



Cutting for glass substrate boards

Utilizes two synchronous X-axis motor slides with one Y-axis slide to assemble into one package of simple cutting mechanism for glass boards.

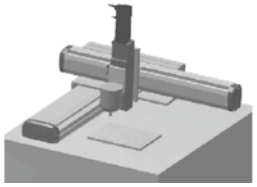
Use specifications
X axis METS-17-Two / Y axis METS-14



Coating device for various small components

Assembles three uniaxial motor slides into a X-Y-Z mechanism that can perform dispensing and rubberizing operations with costs way cheaper than one rubberizing machine and utilize the rubberizing operation on the assembly line.

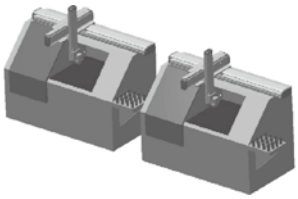
Use specifications
X axis METS-14, 17 / Y axis METS-12, 14 / Z axis METG-5, METS-10



Mobile device for spray coating

Utilizes X-Y-Z axes to clean or spray coating.

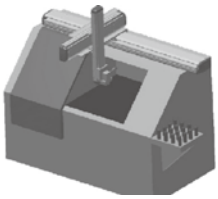
Use specifications
X axis METS-14, 17 / Y axis METS-12, 14 / Z axis METG-5, METS-10



Pick-and-place device for processed parts from machine tools

Utilizes uniaxial motor slides to assemble into X-Y-Z axes that can be installed onto two or three CNC machine tools as the pick-and-place mechanism for loading and unloading of processed parts from multiple processing.

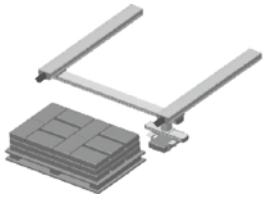
Use specifications
X axis METS-22 / Y axis METS-17 / Z axis METS-14



Pick-and-place device for processed parts from machine tools

Utilizes uniaxial motor slides to assemble into a X-Y-Z axes that can be installed onto CNC machine tools as the pick-and-place mechanism for loading and unloading of processed parts, with a cost saving more than 6-axis mechanical arms.

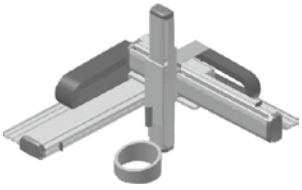
Use specifications
X axis METS-22 / Y axis METS-17 / Z axis METS-14



Conveyance device for large items

Utilizes two synchronous X-axis motor slides with one Y-axis motor slide to assemble into one package of conveyance device for large-size items, with a cost saving more than 6-axis mechanical arms.

Use specifications
X axis METS-22-Two / Y axis METS-17

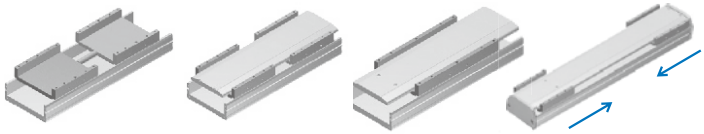


3-Dimensional rubberizing device

Utilizes X-Y-Z axes to assemble into a cantilever rubberizing mechanism that can perform 3-dimensional rubberizing.

Use specifications
X axis METS-14, 17 / Y axis METS-12, 14 / Z axis METG-5, METS-10

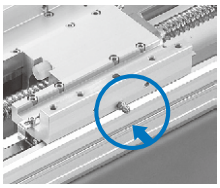
Point 1 Various slide options



Double slider (Dual drive control) | Double slider (Single control) | Extended slide | Alignment

Point 2 Patent oil add hold (Option)

(Industry only) Patented single grease fitting on the slide to lubricate multiple areas which can reduce maintenance overhead and time. Grease fitting can also be tailored to customer specified orientation.

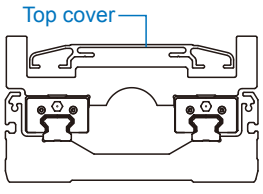


Patented grease fitting design (Copyright)©

Point 3 High rigidity body and cover

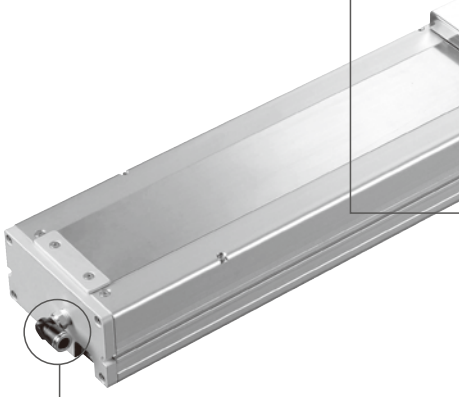
High rigidity mainframe and cover

One piece extruded aluminum structure for optimal rigidity and weight ratio.



Torsion resist top lid

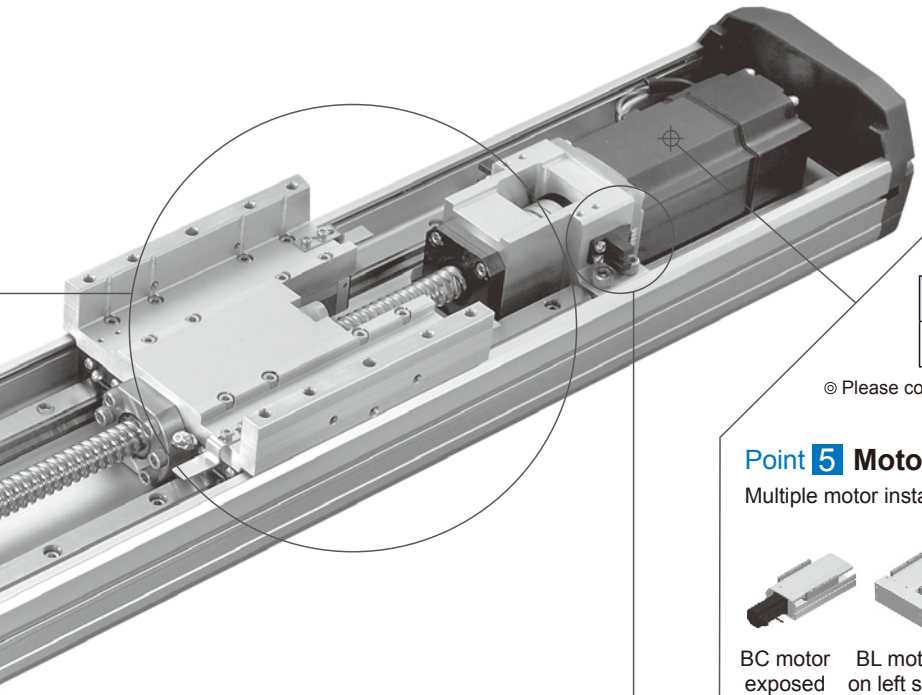
Special torsion-resistant top lid design to prevent deformation during long stroke.

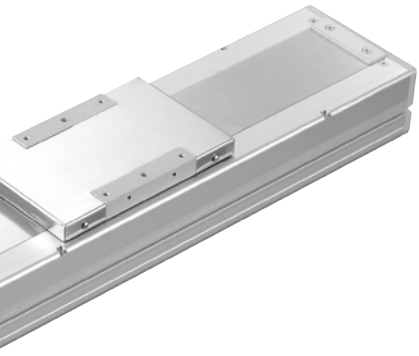


Clean room type

CLASS10~1000

Vacuum connector for clean room use.





Point 4 Motor brand

Customer specified servo motor.

Standard suitable motor brands			
Mitsubishi	Panasonic	Yaskawa	Delta

◎ Please consult our sales personnel for other motor specifications.

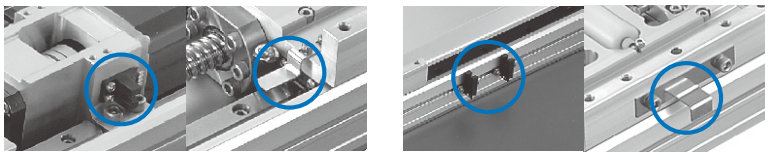
Point 5 Motor assembly location

Multiple motor installation positions for added flexibility in tool design.

BC motor exposed | BL motor on left side | BR motor on right side | BM motor on lower side | M motor hidden in the structure

Point 6 Sensor location

Optional internal or external SENSOR locations.



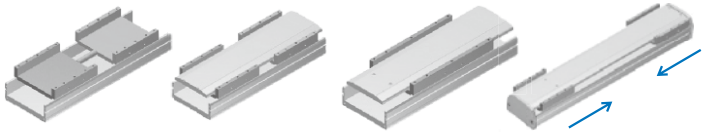
Internal SENSOR | Internal SENSOR trigger device | External SENSOR | External SENSOR trigger device

Point 7 Ball screw lead

Can customize screw specification and brand to match different precision and speed.

Screw lead pitch	
05	5 mm
10	10 mm
16	16 mm
20	20 mm
25	25 mm
40	40 mm

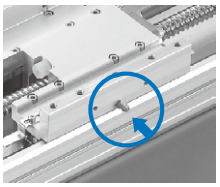
Point 1 Customized sliders upon request



Double slider (Synchronous movement) | Double slider (Dual control) | Extended slide | Opposite direction single control synchronous movement

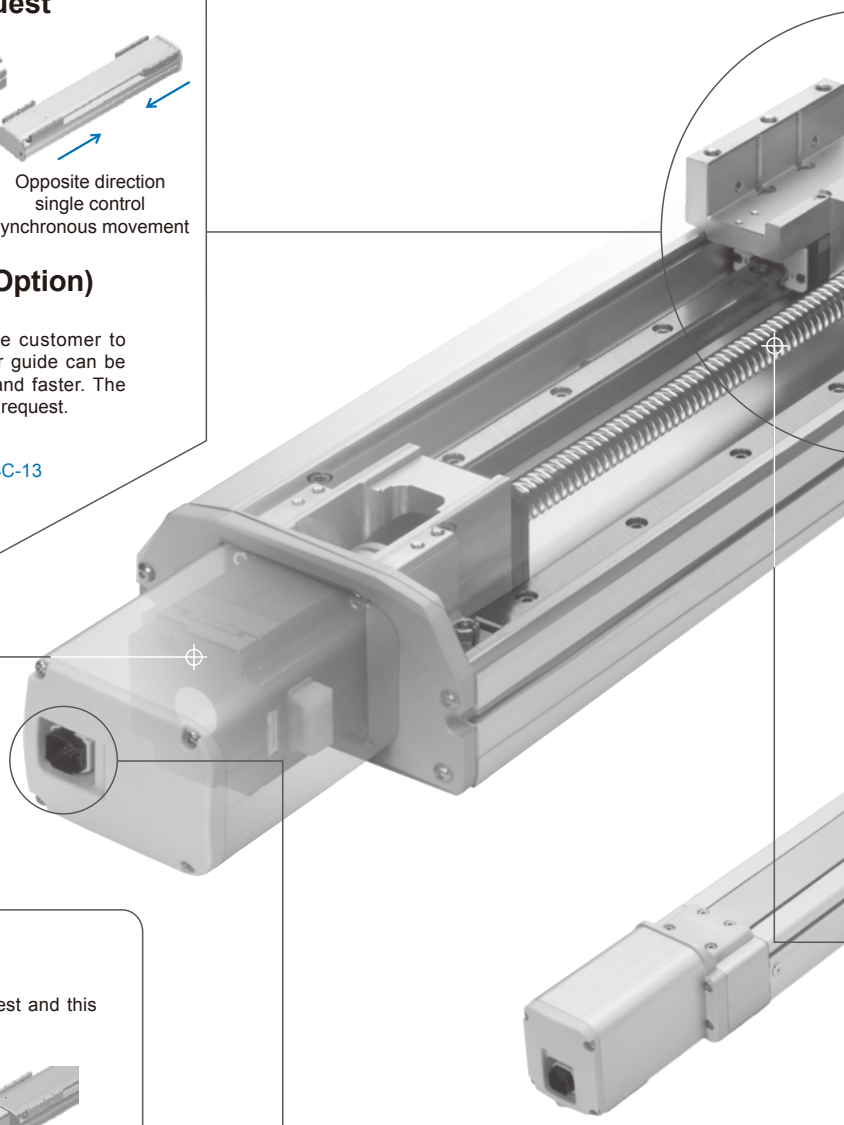
Point 2 Patent grease nipple design (Option)

The industry only patented grease nipple design allow the customer to lubricate from outside of the slider. The ball nuts and linear guide can be lubricated and the maintenance become more convenient and faster. The assembly direction of grease nipple can be selected upon your request.



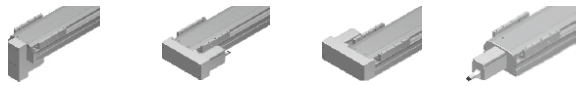
Patented grease fitting design (Copyright)©

Note. This option is only for METSC-10 / METSC-12 / METSC-13



Point 3 Motor assemble location

The motor mounted position can be chosen upon your request and this make it more flexible for customers to design their machines.



M motor Hidden in the structure | BL motor On left side | BR motor On right side | BM motor On lower side

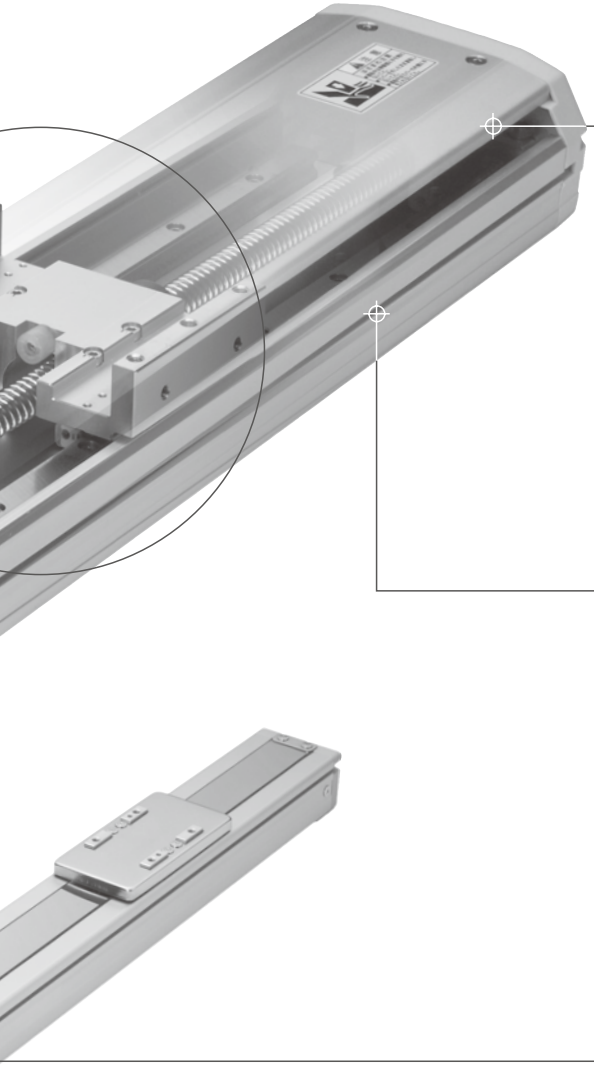
Point 4 Servo stepping motor

High performance closed circuit stepping motor with encoder will not be out of steps even with high speed movement. Smoother movement and more accurate positioning.

Point 5 Motor cable and encoder cable are integrated to one connector.

Advantage

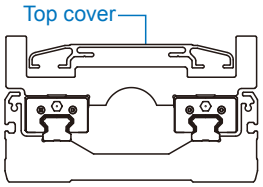
1. No extra cables and space saving.
2. Integrated compact design and better outlooking.



Point 6 High rigidity profile and cover

High rigidity profile and cover

One piece extruded aluminum structure. By elemental analysis, the structure design is the best in stiffness and weight ratio.

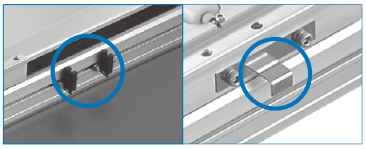


Torsion resistance top cover

Special torsion-resistant top cover design to prevent deformation during long stroke.

Point 7 Sensor position (Option)

Optional external SENSOR locations.



External SENSOR

External SENSOR trigger device

Point 8 Ball screw lead

The ball screw spec and lead can be customized depending on your request of accuracy and speed.

Screw lead	
05	5 mm
10	10 mm
20	20 mm

METG-4 series

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

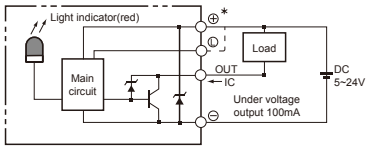
Specification

Model	METG-4	
Repeatability (mm)	±0.01	
Ball screw lead (mm)	1	2.5
Max. speed (mm/s)	50	125
AC servo motor	50W	
Max. payload (kg) Horizontal	25	25
Max. payload (kg) Vertical	8	8
Rated thrust (N)	849	339
Stroke (mm)	50~500 / 50 pitch	
Ball screw ø (mm)	C7ø8	
Coupling (mm)	7×8	
Home sensor (Outside)	EE-SX674 (NPN)	

* When the stroke is over 300mm, the run-out of the ballscrew will occur. We recommend to low down the working speed under this circumstances.

* Acceleration and deacceleration value is set 0.2 second.

Sensor layout



Order example

METG-4 — L01 — 100 — BC — M05B — C4 — 0001

Model | **Spec.** | **Stroke** | **Special order no.**

Stroke: **50~500** mm, 50 mm pitch

Ball screw brand	
L	T-Standard MIT

Ball screw lead	
01	1 mm
2.5	2.5 mm

Motor position	
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes				
50W SERVO motor				
M	Mitsubishi	05	50W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

Home sensor	
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

* When the stroke is 50mm, the sensor installation has the following restricitions.

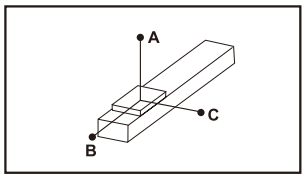
1. C4 & D4 will not be available for installation (order) option.
2. Home sensor and limit sensor has to be installed on the different side of body.
3. Both sides of slider need to install the sensor trigger device.

Limit sensor	
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

METG-4 Performance charts

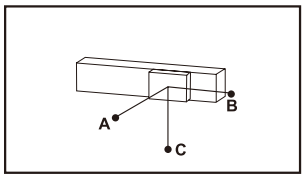
SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

Allowable overhang



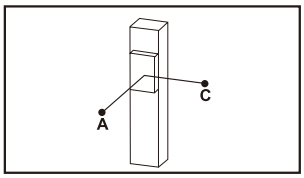
Unit: mm

Horizontal installation		A	B	C
Lead 1	12kg	720	71	104
	18kg	430	44	66
	25kg	322	30	44
Lead 2.5	15kg	550	47	69
	20kg	355	34	49
	25kg	255	25	37



Unit: mm

Wall installation		A	B	C
Lead 1	12kg	94	69	699
	18kg	56	44	411
	25kg	34	30	308
Lead 2.5	15kg	58	47	521
	20kg	40	34	343
	25kg	28	25	245

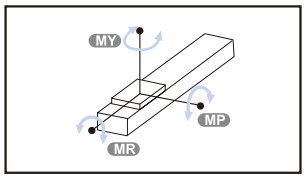


Unit: mm

Vertical installation		A	C
Lead 1	4kg	233	233
	8kg	118	118
	—	—	—
Lead 2.5	4kg	205	205
	8kg	104	104
	—	—	—

- The torque value in the chart indicate the center of gravity.
- Operation life is 10000km when the product is using under the specified conditions.
- Data information is not for ceiling-mount inverse use.
  Contact us for the details if you want to apply ceiling-mount inverse usage.

Static loading moment



Unit: N.m

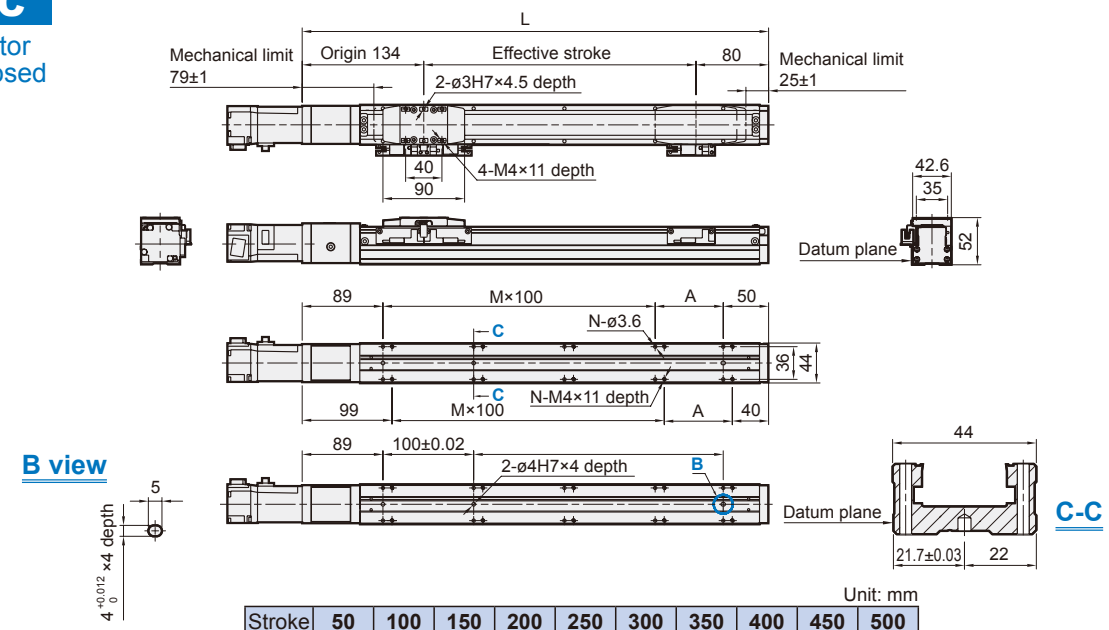
MY	79
MP	79
MR	116

Standard servo motors

Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	50	220	HG-KR053	MR-J4-10A
		With brake(Vertical type)	50	220	HG-KR053B	MR-J4-10A
Panasonic	P	No brake(Horizontal type)	50	220	MSMD5A2G1U	MADHT1505
		With brake(Vertical type)	50	220	MSMD5A2GIV	MADHT1505
Delta	T	No brake(Horizontal type)	50	220	ECMA-C1040FES	ASD-B20121-B
		With brake(Vertical type)	50	220	ECMA-C1040FFS	ASD-B20121-B

BC

Motor exposed

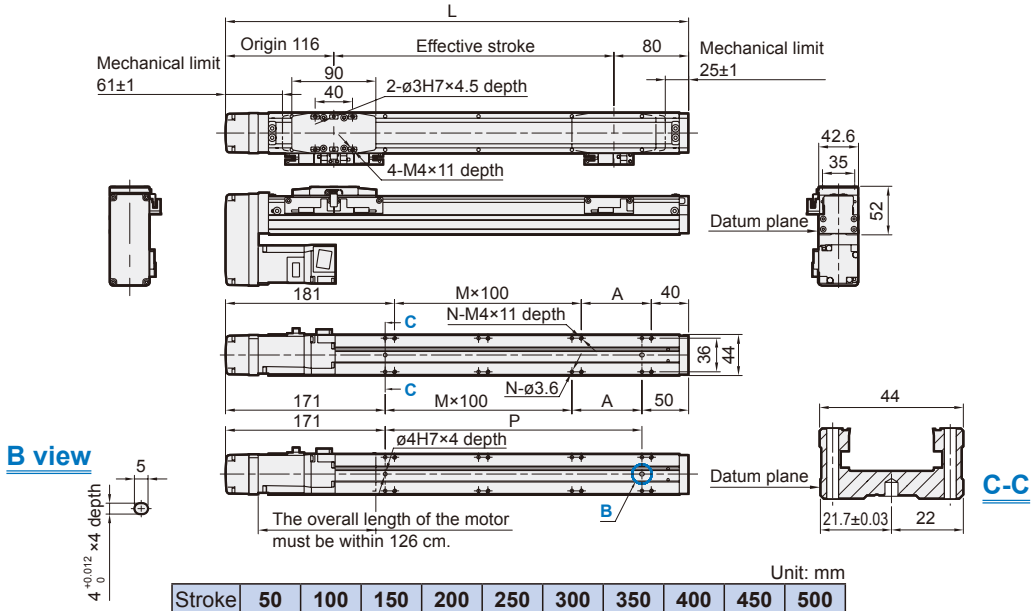


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	264	314	364	414	464	514	564	614	664	714
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG	1.36	1.61	1.86	2.11	2.35	2.6	2.85	3.1	3.34	3.59

BM

Motor on lower side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	0	0	1	1	2	2	3	3	4	4
N	4	4	6	6	8	8	10	10	12	12
P	25	75	125	175	225	275	325	375	425	475
KG	1.66	1.91	2.16	2.4	2.65	2.9	3.14	3.39	3.64	3.89

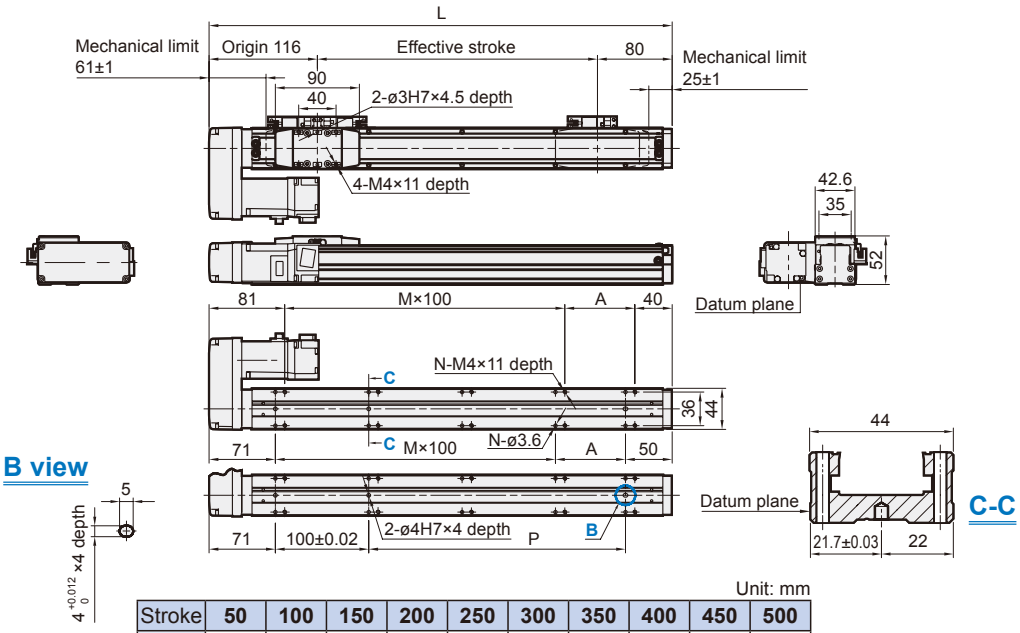
* When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact us if you need more information and requirement.

METG-4 Dimensions

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

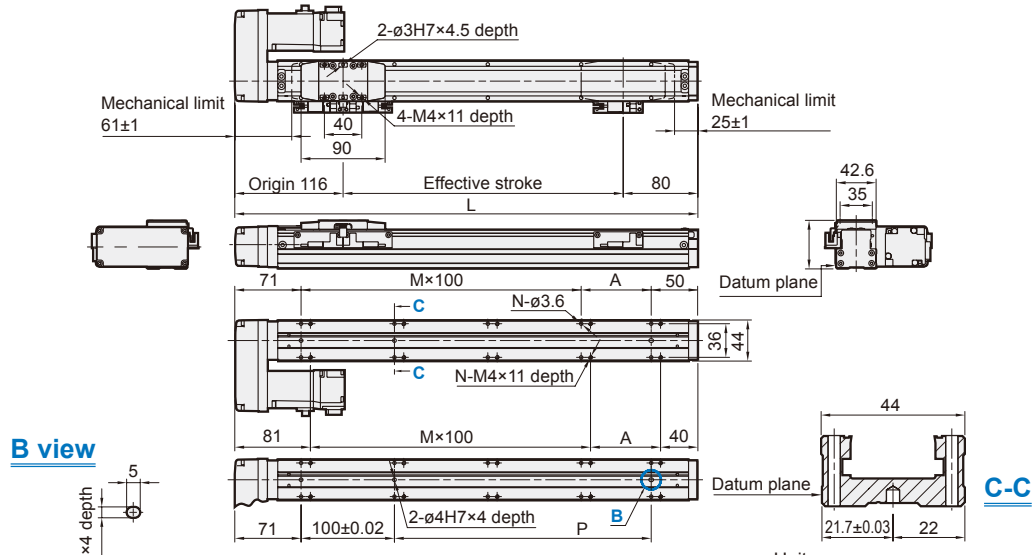
BL
Motor on left side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG	1.66	1.91	2.16	2.4	2.65	2.9	3.14	3.39	3.64	3.89

BR
Motor on right side

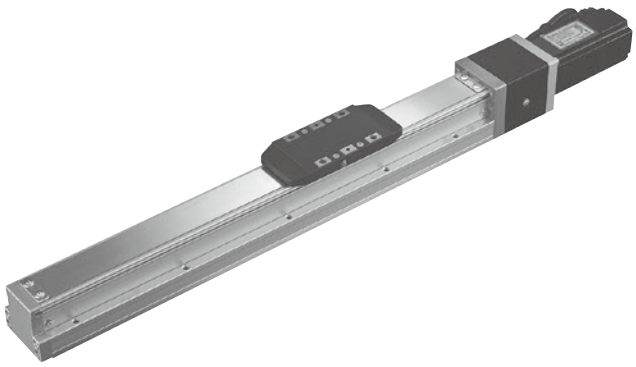


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG	1.66	1.91	2.16	2.4	2.65	2.9	3.14	3.39	3.64	3.89

METG-5 series

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

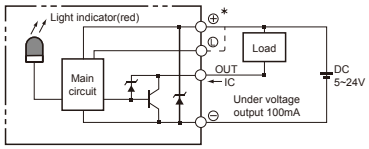


Specification

Model	METG-5			
Repeatability (mm)	±0.01			
Ball screw lead (mm)	2	5	10	20
Max. speed (mm/s)	100	250	500	1000
AC servo motor	100W			
Max. payload (kg) Horizontal	30	30	15	10
Max. payload (kg) Vertical	10	10	5	2.5
Rated thrust (N)	854	341	170	85
Stroke (mm)	50~800 / 50 pitch			
Ball screw ø (mm)	C7ø12			
Coupling (mm)	7×8			
Home sensor (Outside)	EE-SX674 (NPN)			

* When the stroke is over 600mm, the run-out of the ballscrew will occur. We recommend to low down the working speed under this circumstances.
* Acceleration and deacceleration value is set 0.2 second.

Sensor layout



Order example

METG-5 — L02 — 100 — BC — M10B — C4 — 0001

Model | **Spec.** | **Stroke** | **Special order no.**

Stroke: **50~800** mm, 50 mm pitch

Ball screw brand

L	T-Standard MIT

Ball screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

Motor position

BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

100W SERVO motor				
M	Mitsubishi	10	100W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

Home sensor

Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

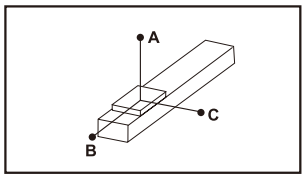
* When the stroke is 50mm, the sensor installation has the following restricitions.
1. C4 & D4 will not be available for installation (order) option.
2. Home sensor and limit sensor has to be installed on the different side of body.
3. Both sides of slider need to install the sensor trigger device.

METG-5 Performance charts

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

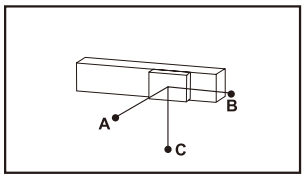
mindman

Allowable overhang



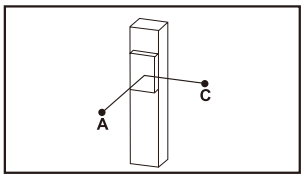
Unit: mm

Horizontal installation		A	B	C
Lead 2	10kg	900	100	135
	20kg	700	45	60
	30kg	550	25	35
Lead 5	10kg	650	75	100
	20kg	440	32	45
	30kg	270	19	25
Lead 10	5kg	600	145	185
	10kg	370	70	85
	15kg	250	42	52
Lead 20	5kg	320	120	130
	8kg	220	70	80
	10kg	175	55	60



Unit: mm

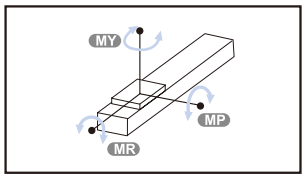
Wall installation		A	B	C
Lead 2	10kg	135	100	900
	20kg	60	45	700
	30kg	37	27	550
Lead 5	10kg	100	75	650
	20kg	45	32	420
	30kg	25	19	260
Lead 10	5kg	180	145	600
	10kg	85	68	370
	15kg	52	42	250
Lead 20	5kg	130	120	320
	8kg	75	70	220
	10kg	60	55	170



Unit: mm

Vertical installation		A	C
Lead 2	6kg	180	180
	8kg	135	135
	10kg	110	110
Lead 5	6kg	145	145
	8kg	110	110
	10kg	90	90
Lead 10	1kg	800	800
	3kg	260	260
	5kg	155	155
Lead 20	1kg	600	600
	2kg	300	300
	2.5kg	250	250

Static loading moment



Unit: N.m

MY	103
MP	103
MR	144

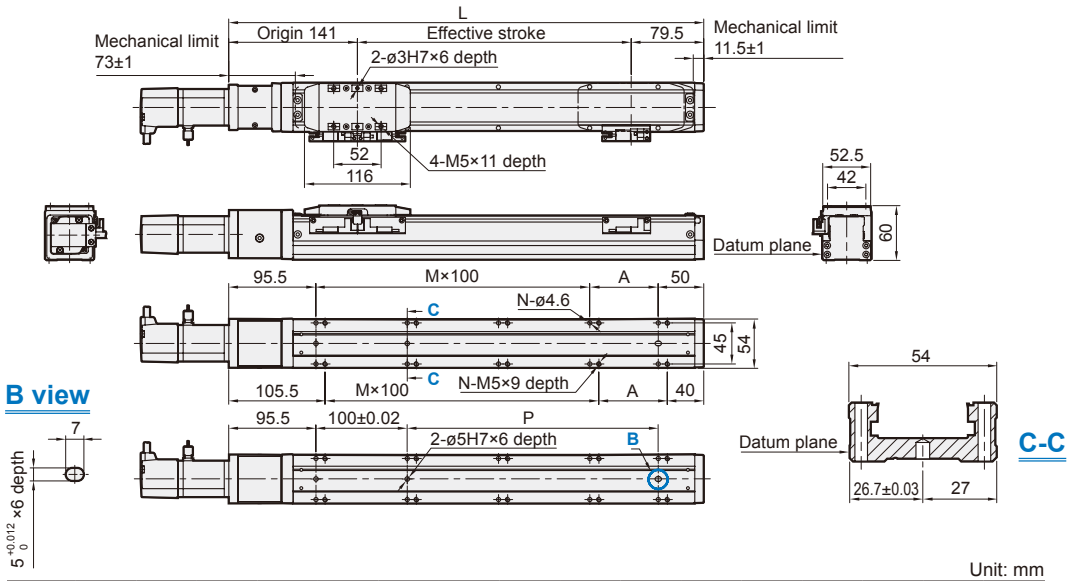
- The torque value in the chart indicate the center of gravity.
- Operation life is 10000km when the product is using under the specified conditions.
- Data information is not for ceiling-mount inverse use.
  Contact us for the details if you want to apply ceiling-mount inverse usage.

Standard servo motors

Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	100	220	KG-KR13	MR-J4-10A
		With brake(Vertical type)	100	220	HG-KR13B	MR-J4-10A
Panasonic	P	No brake(Horizontal type)	100	220	MSMD012G1U	MADHT1505
		With brake(Vertical type)	100	220	MSMD012G1V	MADHT1505
Delta	T	No brake(Horizontal type)	100	220	ECMA-C20401ES	ASD-B20121-B
		With brake(Vertical type)	100	220	ECMA-C20401FS	ASD-B20121-B

BC

Motor exposed

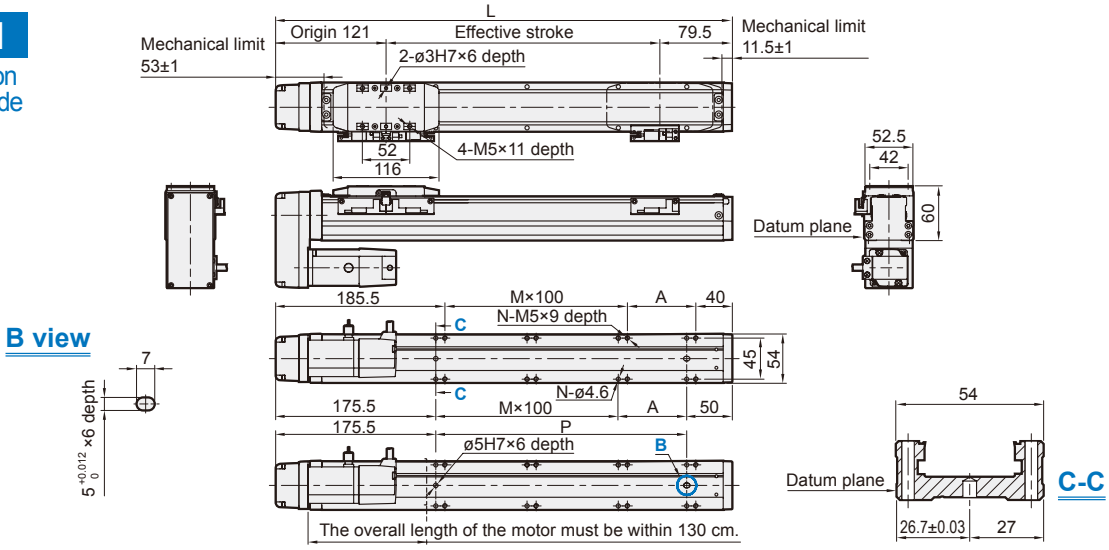


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG	2.23	2.42	2.62	2.82	3.01	3.21	3.41	3.6	3.8	4	4.19	4.39	4.59	4.78	4.98	5.18

BM

Motor on lower side



Unit: mm

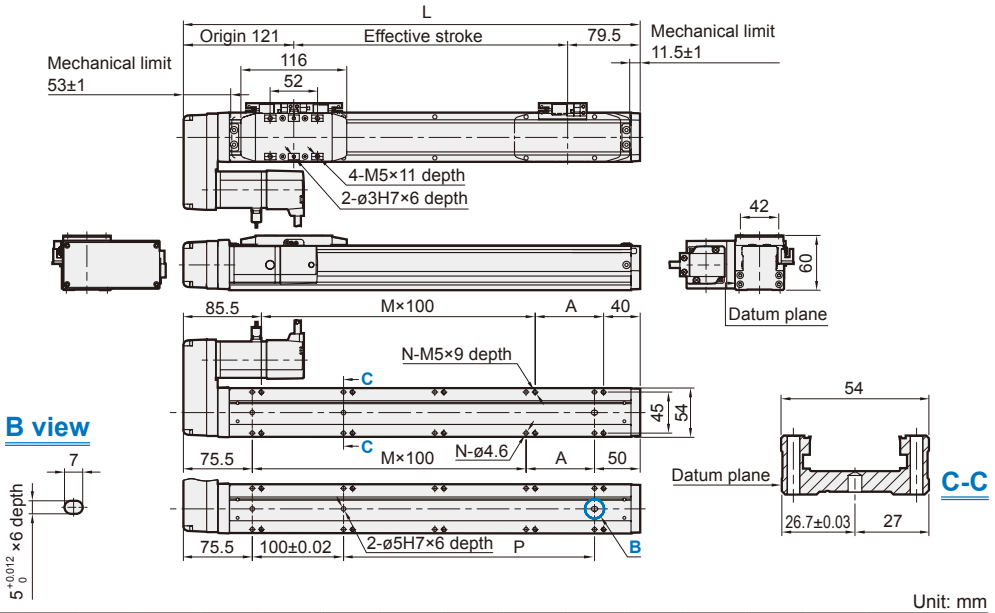
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250.5	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
N	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG	2.4	2.59	2.79	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35

* When motor with brake assembled on lower side, or the total length over than spec limit, it may not use standard pinhole. Please contact us if you need more information and requirement.

METG-5 Dimensions

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITHOUT MOTOR)

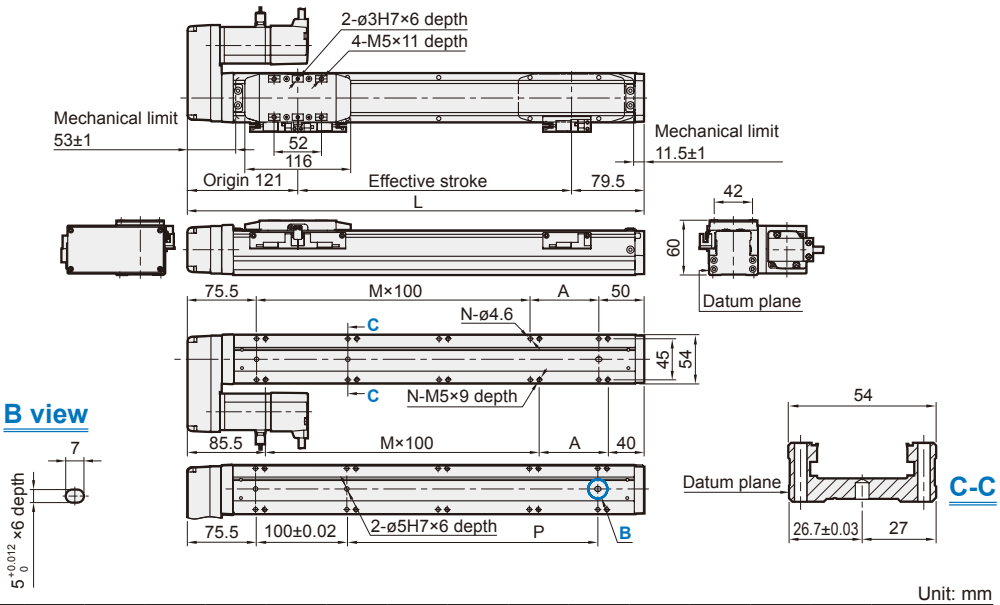
BL
Motor on left side



Unit: mm

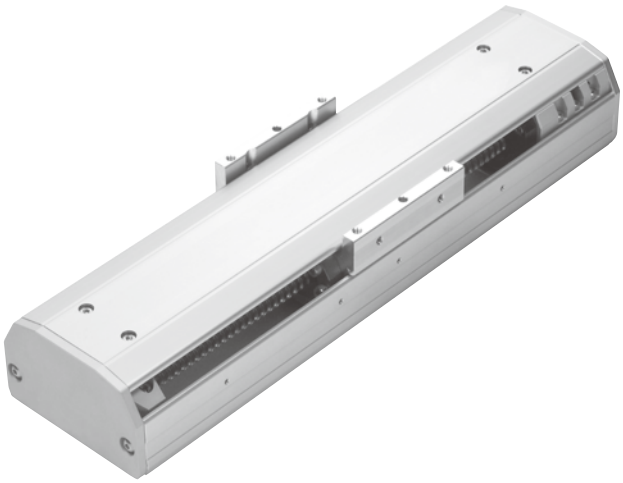
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250.5	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG	2.4	2.59	2.79	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35

BR
Motor on right side

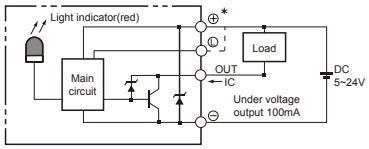


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250.5	300.5	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG	2.4	2.59	2.79	2.99	3.18	3.38	3.58	3.77	3.97	4.17	4.36	4.56	4.76	4.95	5.15	5.35



Sensor layout



Specification

Model		METS-10			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	16	20
Max. speed (mm/s)		250	500	800	1000
Servo motor		100W			
Max. payload (kg)	Horizontal	50	30	22	18
	Vertical	12	8	5	3
Rated thrust (N)		341	170	106	85
Stroke (mm)		100~1050 / 50 pitch			
Ball screw ø (mm)		C7ø16			
High rigidity linear guide (mm)		W20×H18			
Coupling (mm)		10×8			
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			

Order example

METS-10 — L05 — 100 — M — M10B — C4 — 0001

Model: METS-10

Spec.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

Stroke: 100~1050 mm, 50 mm pitch

Motor position

M	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

100W SERVO motor				
M	Mitsubishi	10	100W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

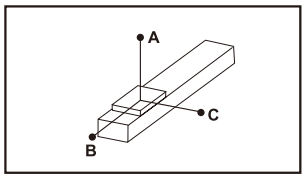
Special order no.: 0001

METS-10 Performance charts

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

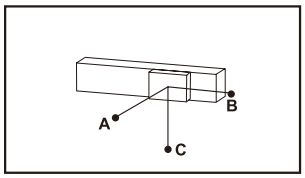
mindman

Allowable overhang



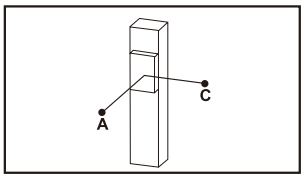
Unit: mm

Horizontal installation		A	B	C
Lead 5	30kg	424	24	25
	50kg	0	0	0
	-	-	-	-
Lead 10	15kg	394	76	79
	25kg	184	22	25
	30kg	111	-	-
Lead 16	5kg	937	282	259
	10kg	487	121	116
	22kg	236	40	44
Lead 20	5kg	940	285	264
	10kg	490	125	120
	15kg	240	45	48



Unit: mm

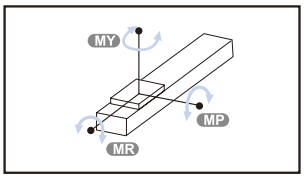
Wall installation		A	B	C
Lead 5	10kg	105	50	1400
	20kg	22	0	538
	30kg	0	0	0
Lead 10	10kg	100	50	545
	20kg	20	0	221
	30kg	0	0	0
Lead 16	5kg	116	58	605
	10kg	24	0	253
	22kg	0	0	0
Lead 20	5kg	251	211	903
	10kg	97	49	436
	15kg	23	0	153



Unit: mm

Vertical installation		A	C
Lead 5	5kg	100	145
	10kg	50	90
	12kg	23	63
Lead 10	5kg	335	375
	6kg	140	180
	8kg	100	140
Lead 16	1kg	620	620
	2kg	680	680
	5kg	310	350
Lead 20	1kg	580	580
	2kg	645	645
	3kg	310	350

Static loading moment



Unit: N.m

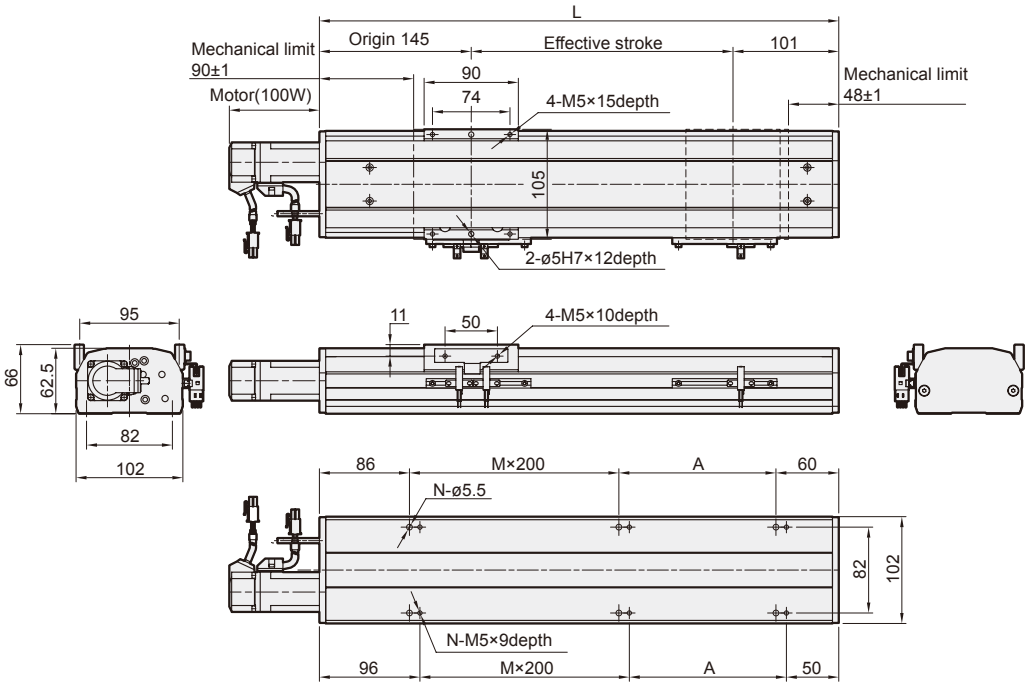
MY	110
MP	110
MR	120

Standard servo motors

Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	100	220	HP-KP13	MR-J3-10A
		With brake(Vertical type)	100	220	HP-KP13B	MR-J3-10A
Panasonic	P	No brake(Horizontal type)	100	220	MSMD012P1S	MADDT1205
		With brake(Vertical type)	100	220	MSMD012P1T	MADDT1205
Delta	T	No brake(Horizontal type)	100	220	ECMA-C20401ES	ASD-B20121-B
		With brake(Vertical type)	100	220	ECMA-C20401FS	ASD-B20121-B

BC

Motor exposed

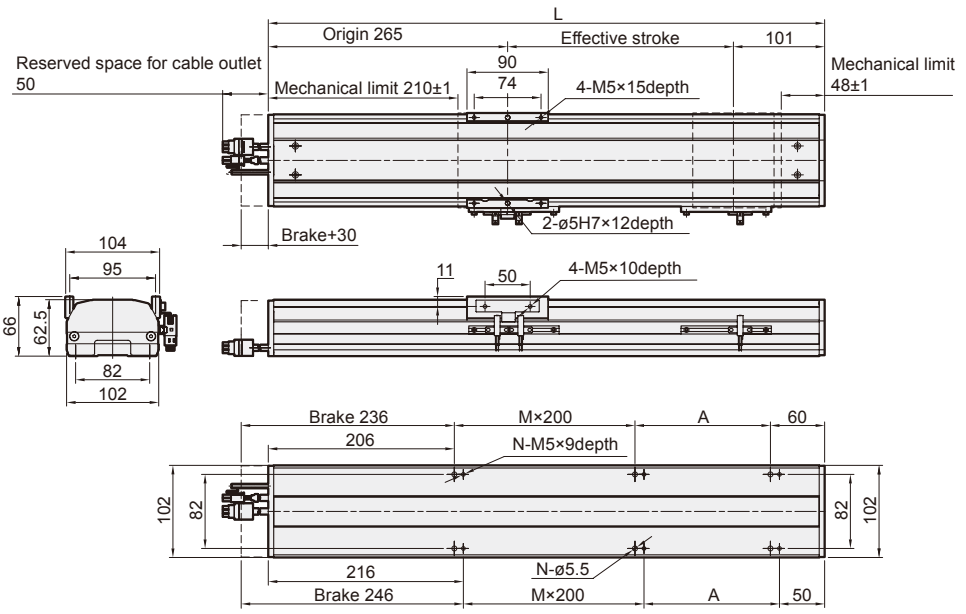


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	346	396	446	496	546	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196	1246	1296
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	4.64	5.02	5.41	5.79	6.18	6.56	6.95	7.33	7.72	8.1	8.49	8.87	9.26	9.64	10.03	10.41	10.8	11.18	11.57	11.95

M

Motor built-in



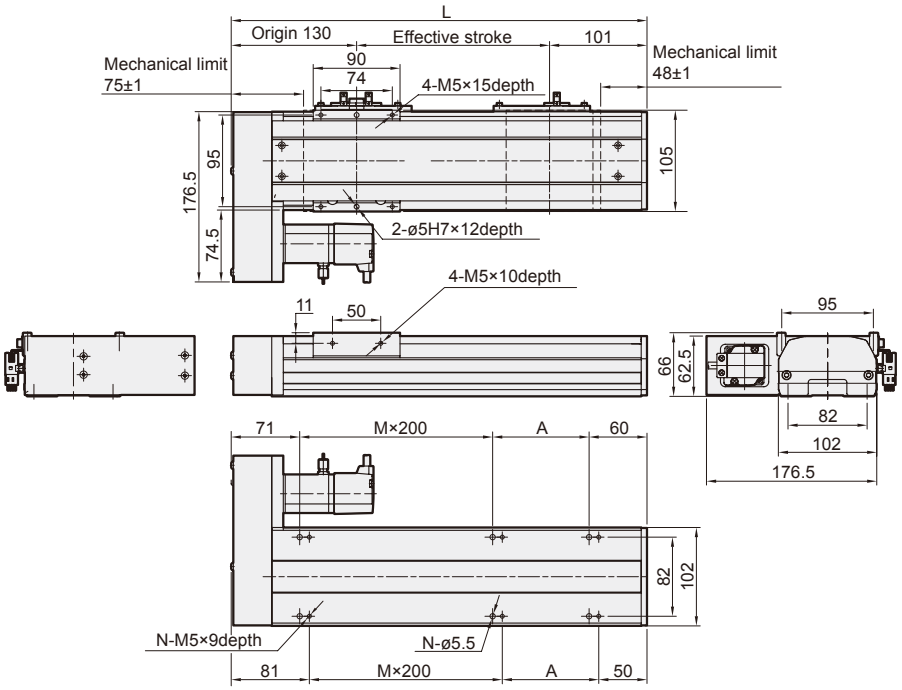
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	466	516	566	616	666	716	766	816	866	916	966	1016	1016	1166	1166	1216	1226	1316	1366	1416
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	4.98	5.36	5.75	6.13	6.52	6.9	7.29	7.67	8.06	8.44	8.83	9.21	9.6	9.98	10.37	10.75	11.14	11.52	11.91	12.29

METS-10 Dimensions – Servo motor 100W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

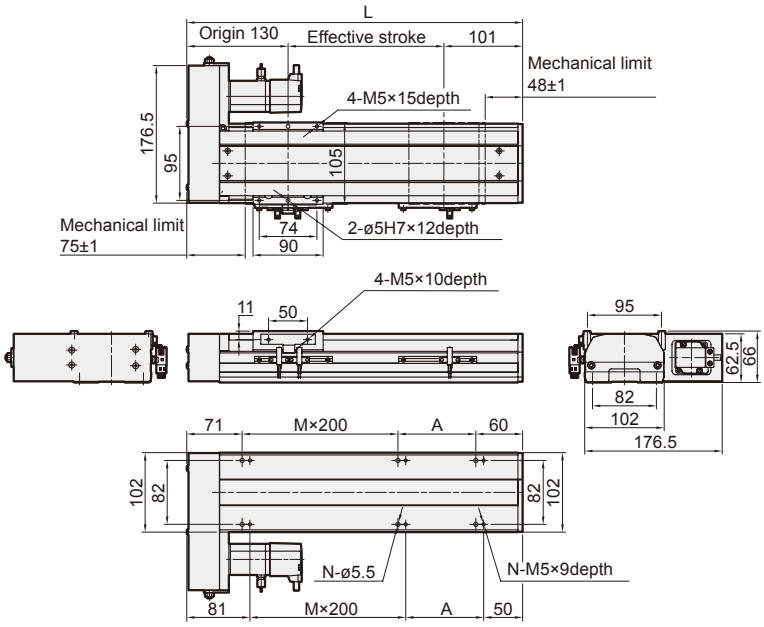
BL
Motor on left side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	4.86	5.25	5.63	6.02	6.4	6.79	7.17	7.56	7.94	8.33	8.71	9.1	9.48	9.87	10.25	10.64	11.02	11.41	11.79	12.18

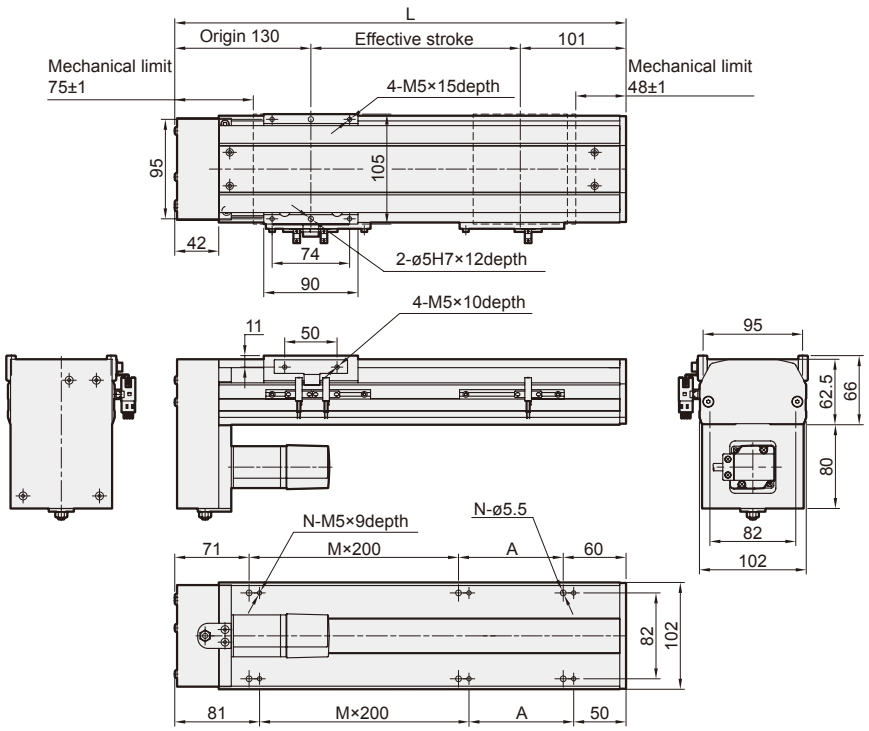
BR
Motor on right side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	4.86	5.25	5.63	6.02	6.4	6.79	7.17	7.56	7.94	8.33	8.71	9.1	9.48	9.87	10.25	10.64	11.02	11.41	11.79	12.18

BM
Motor on lower side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	4.86	5.25	5.63	6.02	6.4	6.79	7.17	7.56	7.94	8.33	8.71	9.1	9.48	9.87	10.25	10.64	11.02	11.41	11.79	12.18

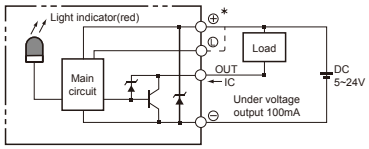
METS-12 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

Specification

Model		METS-12			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	16	20
Max. speed (mm/s)		250	500	800	1000
Servo motor		100W			
Max. payload (kg)	Horizontal	50	30	22	18
	Vertical	12	8	5	3
Rated thrust (N)		341	170	106	85
Stroke (mm)		100~1050 / 50 pitch			
Ball screw ø (mm)		C7ø16			
High rigidity linear guide (mm)		W12×H7.5			
Coupling (mm)		10×8			
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			

Sensor layout



Order example

METS-12 — L16 — 100 — M — M10B — C4 — 0001

Model METS-12 | **Spec.** L16 | **Stroke** 100 | **Special order no.** 0001

Stroke: 100~1050 mm, 50 mm pitch

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

Motor position

M	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

100W SERVO motor				
M	Mitsubishi	10	100W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

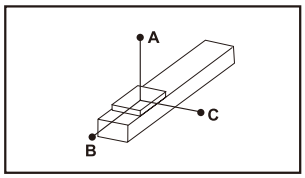
Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

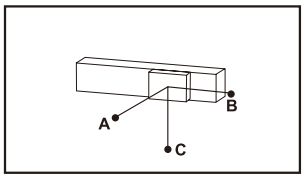
In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

Allowable overhang



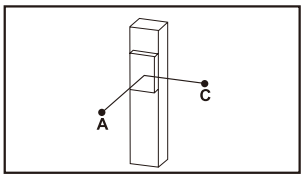
Unit: mm

Horizontal installation		A	B	C
Lead 5	30kg	1200	158	311
	50kg	1100	124	124
	-	-	-	-
Lead 10	15kg	1000	190	250
	25kg	900	190	170
	30kg	850	124	122
Lead 16	5kg	2150	1365	982
	10kg	1190	462	427
	22kg	1270	242	291
Lead 20	5kg	1936	1229	882
	10kg	1039	418	387
	15kg	1073	220	264



Unit: mm

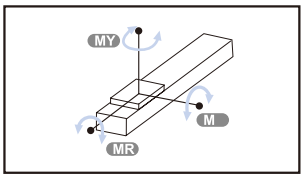
Wall installation		A	B	C
Lead 5	10kg	126	60	800
	20kg	70	30	600
	30kg	50	15	476
Lead 10	10kg	246	180	700
	20kg	150	80	515
	30kg	72	32	422
Lead 16	5kg	1068	976	1579
	10kg	405	278	776
	22kg	220	107	680
Lead 20	5kg	958	875	1420
	10kg	361	248	696
	15kg	107	95	610



Unit: mm

Vertical installation		A	C
Lead 5	5kg	412	398
	10kg	394	356
	12kg	357	355
Lead 10	5kg	711	578
	6kg	534	414
	8kg	411	376
Lead 16	1kg	1210	1210
	2kg	1174	1174
	5kg	650	650
Lead 20	-	-	-
	-	-	-
	3kg	1030	802

Static loading moment



Unit: N.m

MY	150
MP	150
MR	130

Standard servo motors

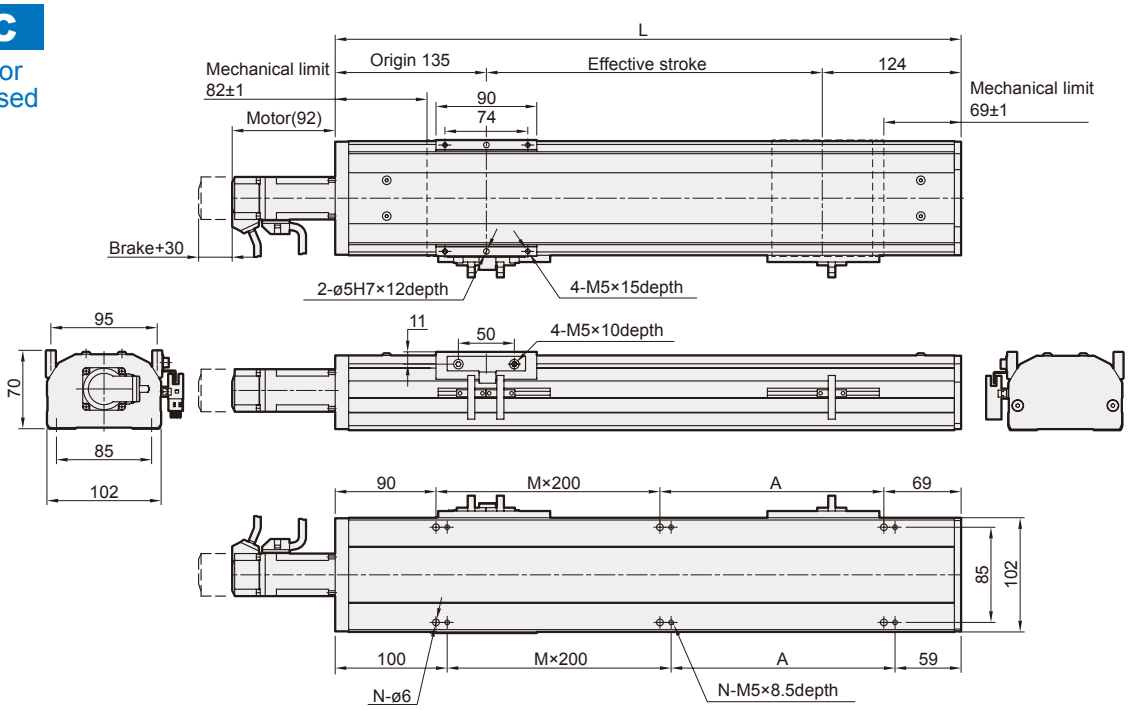
Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	**M**	No brake(Horizontal type)	100	220	HP-KP13	MR-J3-10A
		With brake(Vertical type)	100	220	HP-KP13B	MR-J3-10A
Panasonic	**P**	No brake(Horizontal type)	100	220	MSMD012P1S	MADDT1205
		With brake(Vertical type)	100	220	MSMD012P1T	MADDT1205
Delta	**T**	No brake(Horizontal type)	100	220	ECMA-C20401ES	ASD-B20121-B
		With brake(Vertical type)	100	220	ECMA-C20401FS	ASD-B20121-B

METS-12 Dimensions – Servo motor 100W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

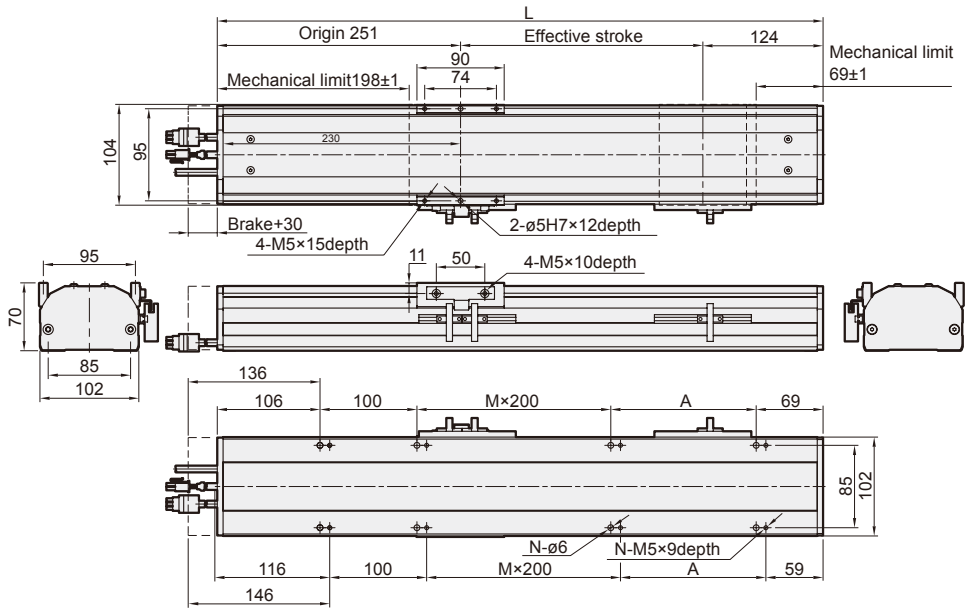
BC
Motor exposed



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	359	409	459	509	559	609	659	709	759	809	859	909	959	1009	1059	1109	1159	1209	1259	1309
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.07	5.46	5.84	6.23	6.62	7.01	7.04	7.78	8.17	8.56	8.95	9.34	9.72	10.11	10.5	10.89	11.28	11.66	12.05	12.44

M
Motor built-in

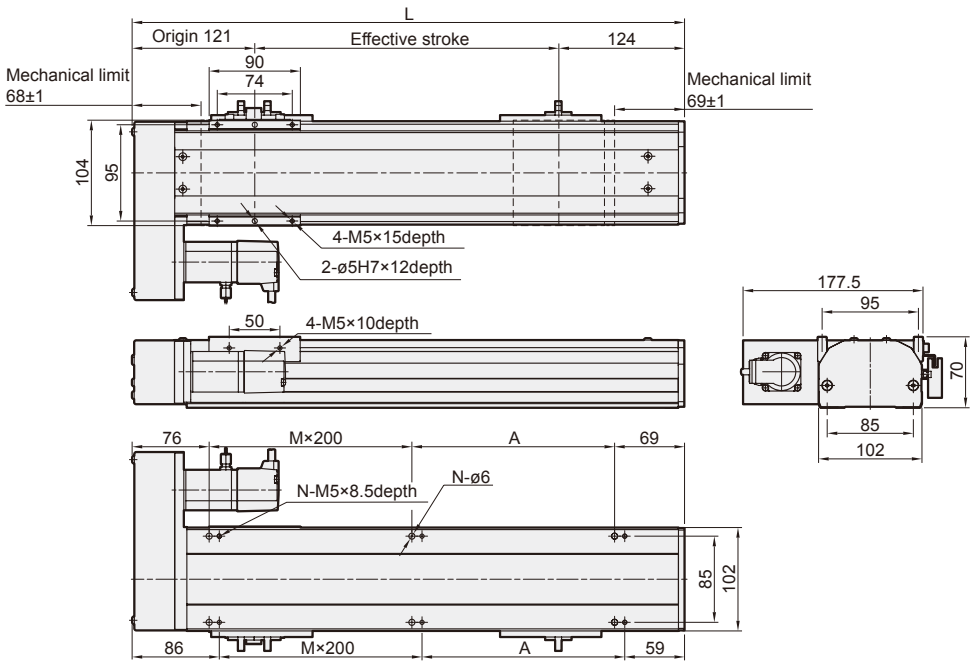


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	475	525	575	625	675	725	775	825	875	925	975	1025	1075	1125	1175	1225	1275	1325	1375	1425
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16
KG	5.54	5.93	6.32	6.71	7.1	7.49	7.88	8.27	8.66	9.05	9.44	9.83	10.22	10.61	11	11.39	11.78	12.17	12.56	12.95

BL

Motor on left side

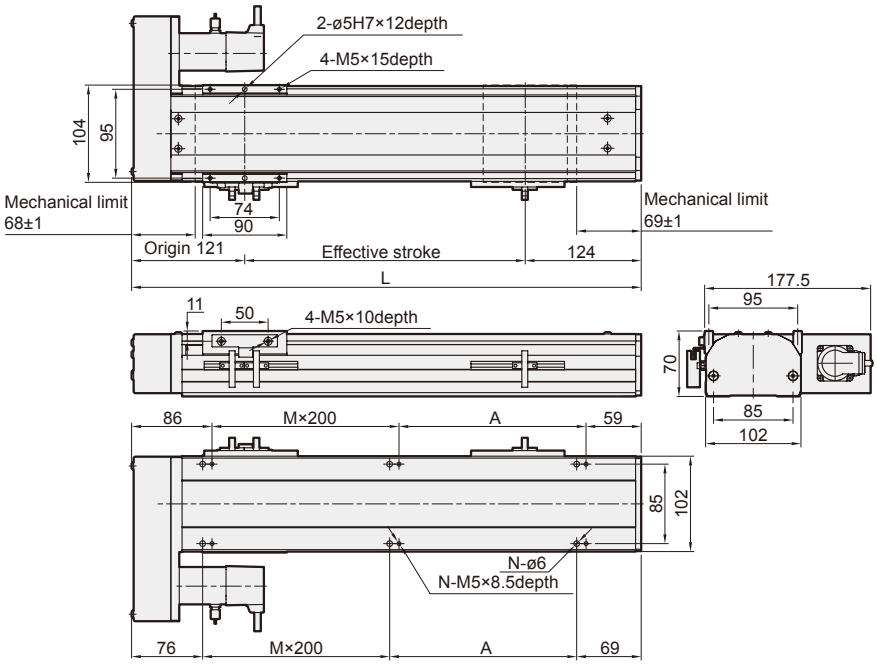


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	345	395	445	495	545	595	645	695	745	795	845	895	945	995	1045	1095	1145	1195	1245	1295
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.45	5.84	6.23	6.61	7	7.39	7.77	8.16	8.55	8.94	9.32	9.71	10.1	10.48	10.87	11.26	11.64	12.03	12.42	12.81

BR

Motor on right side



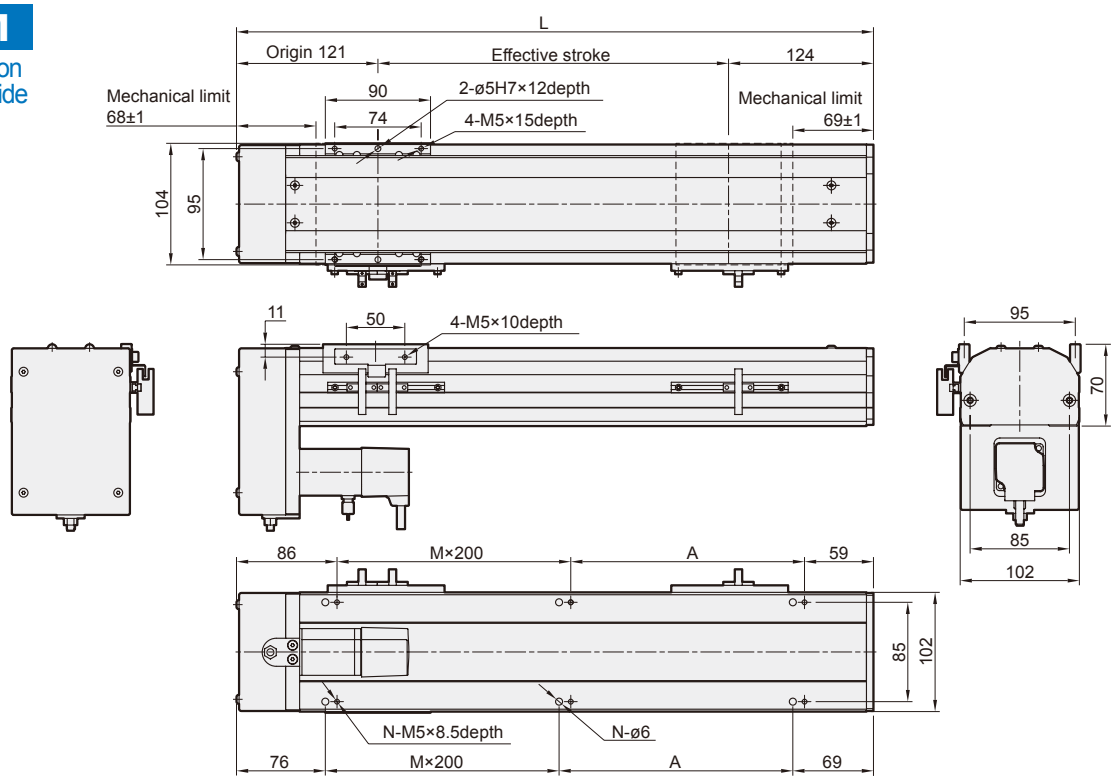
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	345	395	445	495	545	595	645	695	745	795	845	895	945	995	1045	1095	1145	1195	1245	1295
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.45	5.84	6.23	6.61	7	7.39	7.77	8.16	8.55	8.94	9.32	9.71	10.1	10.48	10.87	11.26	11.64	12.03	12.42	12.81

METS-12 Dimensions – Servo motor 100W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

BM
Motor on lower side



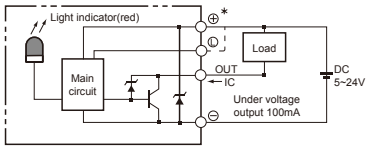
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	345	395	445	495	545	595	645	695	745	795	845	895	945	995	1045	1095	1145	1195	1245	1295
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.45	5.84	6.23	6.61	7	7.39	7.77	8.16	8.55	8.94	9.32	9.71	10.1	10.48	10.87	11.26	11.64	12.03	12.42	12.81

METS-13 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

Sensor layout



Specification

Model		METS-13			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	16	20
Max. speed		250	500	800	1000
Servo motor		200W			
Max. payload (kg)	Horizontal	70	47	30	24
	Vertical	17	12	6	4
Rated thrust (N)		683	341	213	174
Stroke (mm)		100~1050 / 50 pitch			
Ball screw ø (mm)		C7ø16			
High rigidity linear guide (mm)		W15×H12.5			
Coupling (mm)		10×14			
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			

Order example

METS-13 — L05 — 100 — M — M20B — C4 — 0001

Model: METS-13

Spec.

Stroke: **100~1050** mm, 50 mm pitch

Special order no.: 0001

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

Motor position

M	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

200W SERVO motor				
M	Mitsubishi	20	200W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

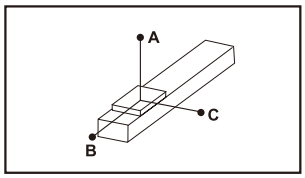
In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

METS-13 Performance charts

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

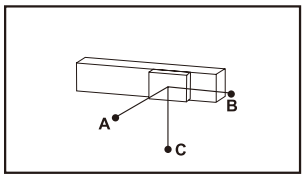
mindman

Allowable overhang



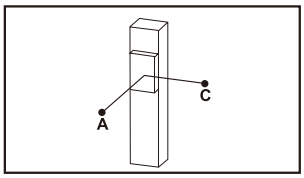
Unit: mm

Horizontal installation		A	B	C
Lead 5	40kg	2448	316	322
	55kg	2197	247	257
	70kg	2005	207	219
Lead 10	25kg	1958	370	490
	35kg	1660	370	333
	47kg	1725	247	243
Lead 16	10kg	1800	1400	800
	20kg	1100	700	450
	30kg	1047	445	324
Lead 20	5kg	2105	1351	960
	15kg	1170	455	420
	24kg	1300	250	305



Unit: mm

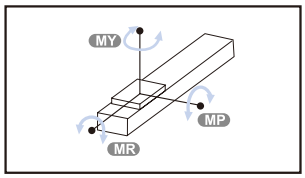
Wall installation		A	B	C
Lead 5	40kg	204	112	1394
	55kg	130	57	1115
	70kg	85	24	895
Lead 10	25kg	414	333	1277
	35kg	235	157	929
	47kg	129	57	751
Lead 16	10kg	461	372	1410
	20kg	264	178	1027
	30kg	148	69	832
Lead 20	5kg	1041	965	1560
	15kg	400	271	770
	24kg	220	108	685



Unit: mm

Vertical installation		A	C
Lead 5	5kg	762	614
	10kg	607	489
	12kg	498	493
Lead 10	4kg	1365	1101
	6kg	901	727
	8kg	674	543
Lead 16	1kg	1067	1217
	2kg	997	805
	6kg	747	603
Lead 20	1kg	580	580
	2kg	1155	1155
	4kg	1130	885

Static loading moment



Unit: N.m

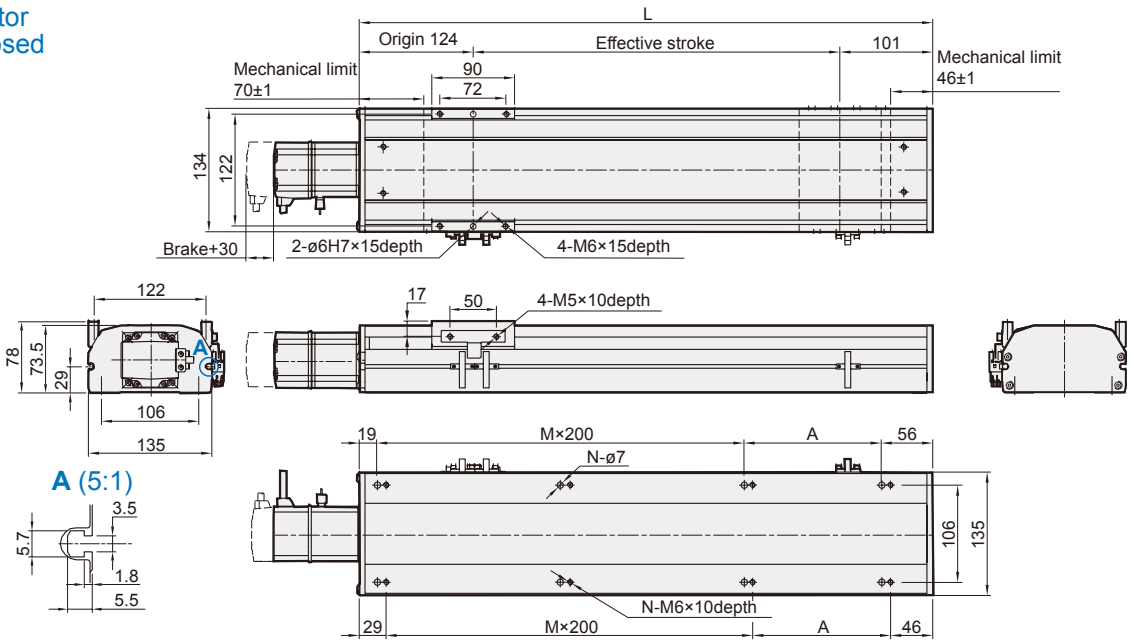
MY	174
MP	174
MR	153

Standard servo motors

Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	200	220	HF-KP23	MR-J3-20A
		With brake(Vertical type)	200	220	HF-KP23B	MR-J3-20A
Panasonic	P	No brake(Horizontal type)	200	220	MHMD022P1S	MADDT1207
		With brake(Vertical type)	200	220	MHMD022P1T	MADDT1207
Delta	T	No brake(Horizontal type)	200	220	ECMA-C20602ES	ASD-B20221-B
		With brake(Vertical type)	200	220	ECMA-C20602FS	ASD-B20221-B

BC

Motor exposed

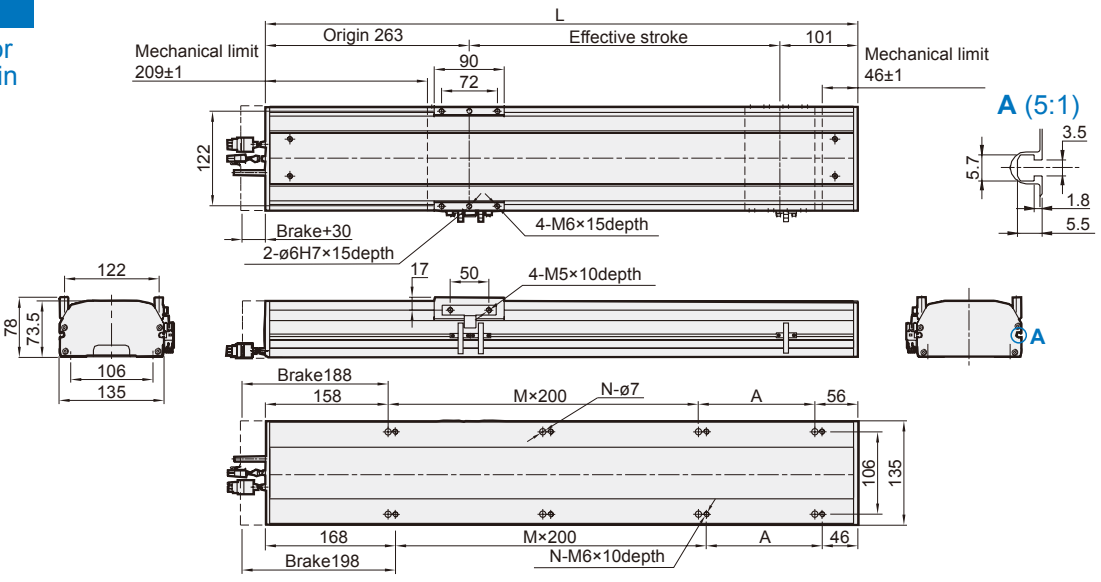


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	325	375	425	475	525	575	625	675	725	775	825	875	925	975	1025	1075	1125	1175	1225	1275
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
KG	7.96	8.52	9.08	9.64	10.2	10.76	11.32	11.88	12.44	13	13.56	14.12	14.68	15.24	15.8	16.36	16.92	17.48	18.04	18.6

M

Motor built-in



Unit: mm

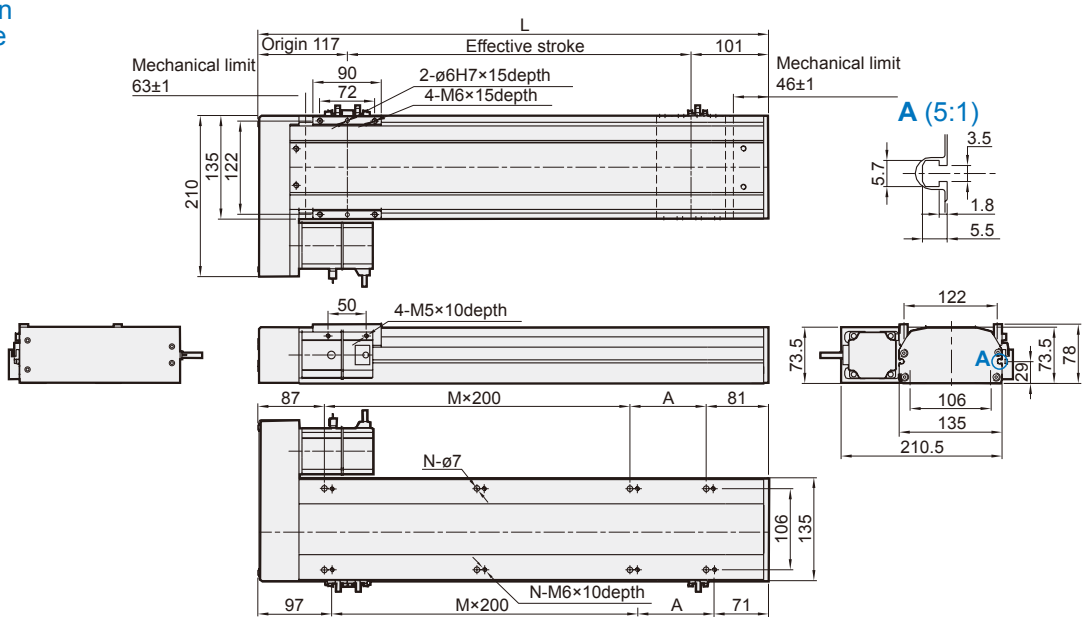
Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	464	514	564	614	664	714	764	814	864	914	964	1014	1064	1114	1164	1214	1264	1314	1364	1414
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
KG	8.86	9.42	9.98	10.54	11.1	11.66	12.22	12.78	13.34	13.9	14.46	15.02	15.58	16.14	16.7	17.26	17.82	18.38	18.94	19.5

METS-13 Dimensions – Servo motor 200W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

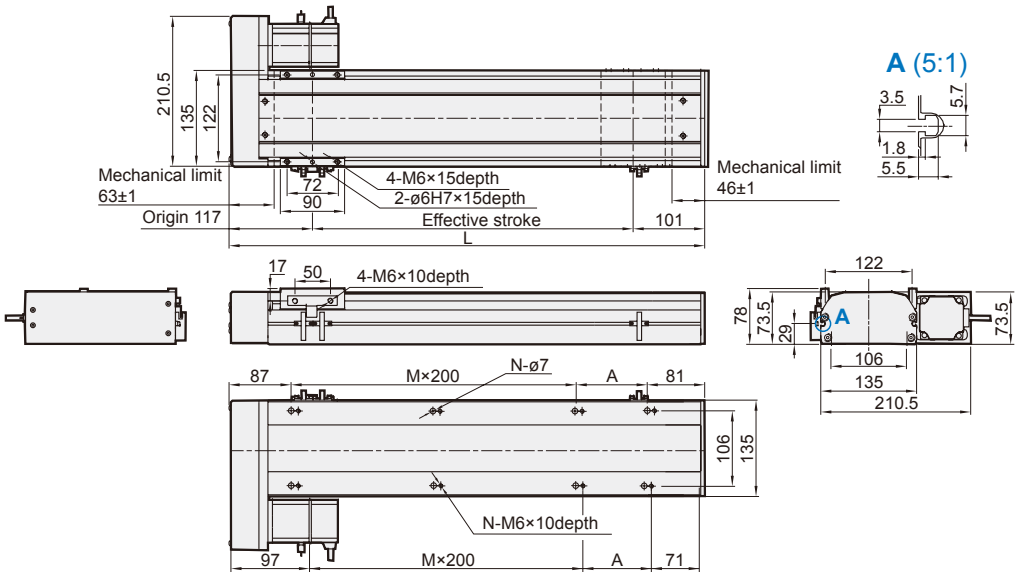
BL
Motor on left side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.5	9.06	9.62	10.18	10.74	11.3	11.86	12.42	12.98	13.54	14.1	14.66	15.22	15.78	16.34	16.9	17.46	18.02	18.58	19.14

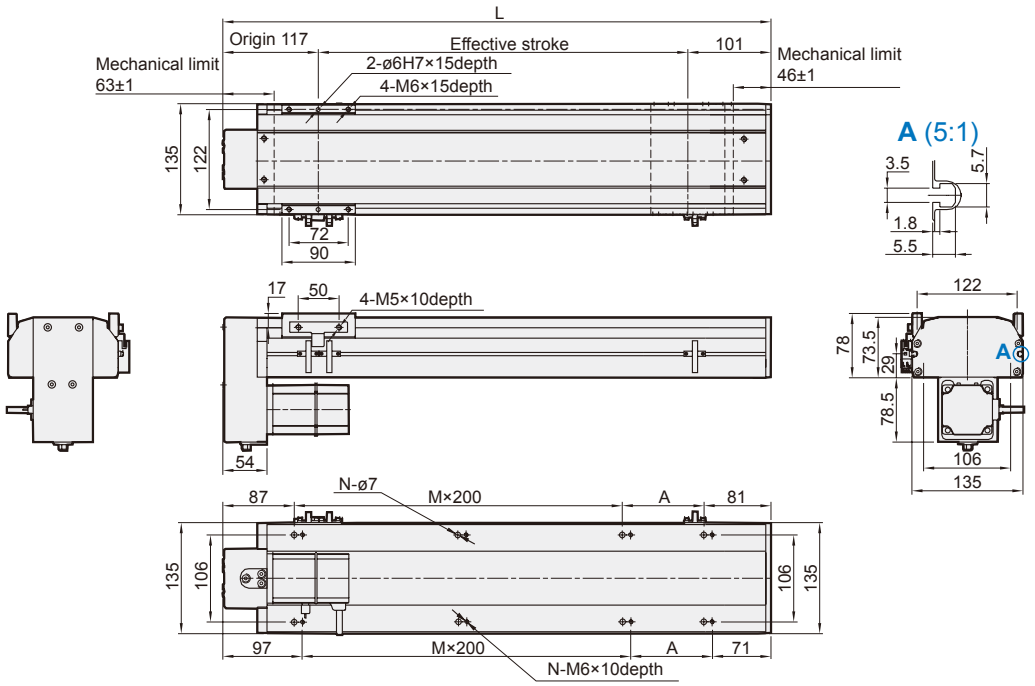
BR
Motor on right side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.5	9.06	9.62	10.18	10.74	11.3	11.86	12.42	12.98	13.54	14.1	14.66	15.22	15.78	16.34	16.9	17.46	18.02	18.58	19.14

BM
Motor on lower side



Unit: mm

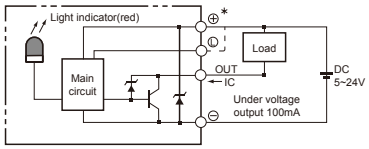
Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.5	9.06	9.62	10.18	10.74	11.3	11.86	12.42	12.98	13.54	14.1	14.66	15.22	15.78	16.34	16.9	17.46	18.02	18.58	19.14

METS-14 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

Sensor layout



Specification

Model		METS-14			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	16	20
Max. speed (mm/s)		250	500	800	1000
Stroke (mm)		100~1050 / 50 pitch			
Ball screw ø (mm)		C7ø16			
High rigidity linear guide (mm)		W15×H12.5			
Coupling (mm)		10×14			
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			
Servo motor		**200W**			
Max. payload (kg)	Horizontal	95	75	44	35
	Vertical	27	18	7	6
Rated thrust (N)		683	341	213	174
Servo motor		**400W**			
Max. payload (kg)	Horizontal	110	88	48	40
	Vertical	33	22	10	8
Rated thrust (N)		1388	694	433	347

Order example

METS-14 — L05 — 100 — M — M20B — C4 — 0001

Model | Spec. | Stroke | Special order no.

Stroke: 100~1050 mm, 50 mm pitch

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
16	16 mm
20	20 mm

Motor position

M	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

M	Mitsubishi	20:200W 40:400W	B
P	Panasonic		
Y	Yaskawa		
T	Delta		

* Need not show **B** with no brake.

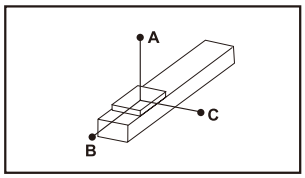
Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

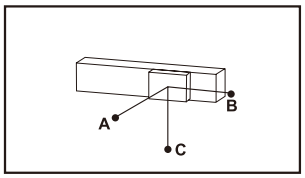
In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

Allowable overhang



Unit: mm

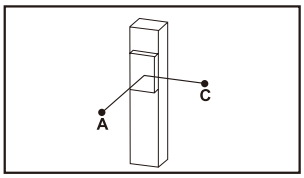
Horizontal installation		A	B	C
Lead 5	60kg	2448	316	322
	80kg	2197	247	257
	95kg	2005	207	219
Lead 10	30kg	1958	370	490
	50kg	1660	370	333
	75kg	1725	247	243
Lead 16	10kg	2265	1674	961
	20kg	1402	855	537
	44kg	1047	445	324
Lead 20	10kg	2263	1672	958
	20kg	1400	852	535
	35kg	1052	448	328



Unit: mm

Wall installation		A	B	C
Lead 5	60kg	204	112	1394
	80kg	130	57	1115
	95kg	85	24	895
Lead 10	30kg	414	333	1277
	50kg	235	157	929
	75kg	129	57	751
Lead 16	10kg	461	372	1410
	20kg	264	178	1027
	44kg	148	69	832
Lead 20	10kg	997	1217	1709
	20kg	513	555	985
	35kg	268	231	640

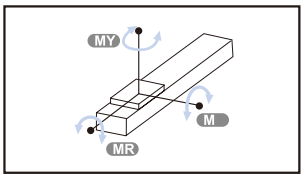
As stated **METS-14/400W,** section 3 of the table stating lead 5, lead 10, lead 16 and lead 20. The acceptable moment load are lead 5/110kg, lead 10/88kg, lead 16/48kg and lead 20/40kg and the length of three axis is the same.



Unit: mm

Vertical installation		A	C
Lead 5	20kg	762	614
	25kg	607	489
	27kg	498	483
Lead 10	10kg	1365	1101
	15kg	901	727
	18kg	674	543
200W			
Lead 16	2kg	2420	2031
	4kg	1690	1360
	7kg	1300	1050
Lead 20	6kg	1695	1361
	-	-	-
	-	-	-
400W			
Lead 16	2kg	1067	1217
	4kg	997	805
	10kg	747	603
Lead 20	4kg	2402	2018
	6kg	1701	1366
	8kg	1305	1055

Static loading moment



Unit: N.m

MY	551
MP	552
MR	485

Standard servo motors

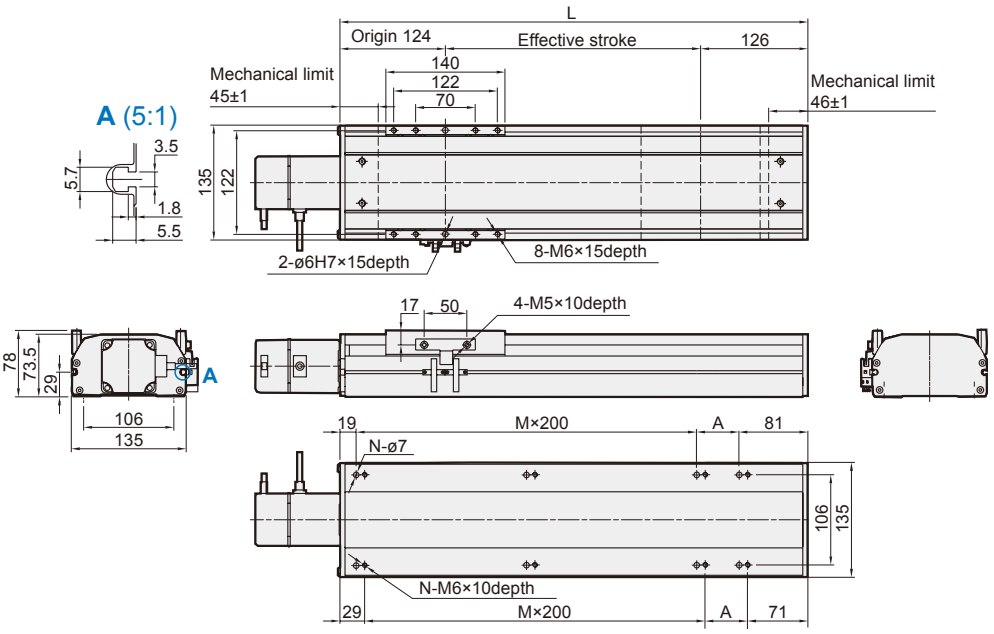
Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	200	220	HF-KP23	MR-J3-20A
			400	220	HF-KP43	MR-J3-40A
		With brake(Vertical type)	200	220	HF-KP23B	MR-J3-20A
			400	220	HF-KP43B	MR-J3-40A
Panasonic	P	No brake(Horizontal type)	200	220	MHMD022P1S	MADDT1207
			400	220	MHMD042P1S	MADDT2210
		With brake(Vertical type)	200	220	MHMD022P1T	MADDT1207
			400	220	MHMD042P1T	MADDT2210
Delta	T	No brake(Horizontal type)	200	220	ECMA-C20602ES	ASD-B20221-B
			400	220	ECMA-C20604ES	ASD-B20421-B
		With brake(Vertical type)	200	220	ECMA-C20602FS	ASD-B20221-B
			400	220	ECMA-C20604FS	ASD-B20421-B

METS-14 Dimensions – Servo motor 200W, 400W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

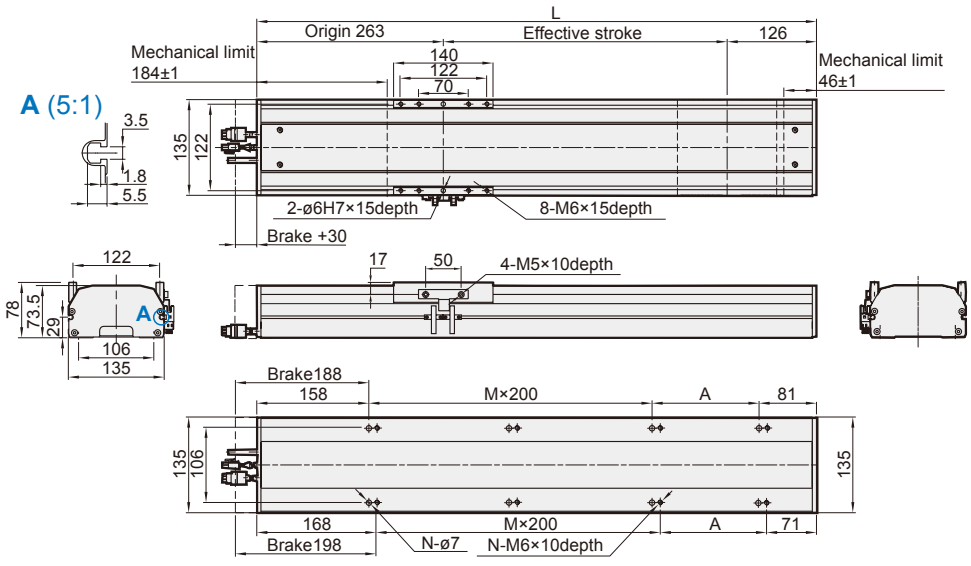
BC
Motor exposed



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
KG	9.3	9.85	10.4	10.95	11.5	12.05	12.6	13.15	13.7	14.25	14.8	15.35	15.9	16.45	17	17.55	18.1	18.65	19.2	19.75

M
Motor built-in

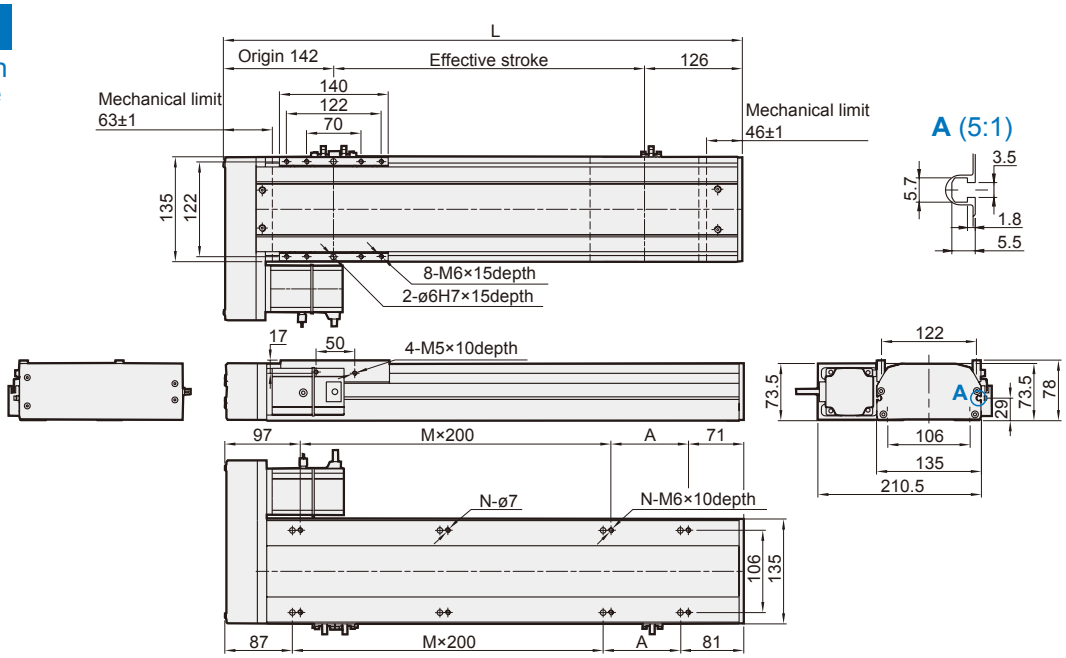


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	489	539	589	639	689	739	789	839	889	939	989	1039	1089	1139	1189	1239	1289	1339	1389	1439
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
KG	10.06	10.62	11.18	11.74	12.3	12.86	13.42	13.98	14.54	15.1	15.66	16.22	16.78	17.34	17.9	18.46	19.02	19.58	20.14	20.7

BL

Motor on left side

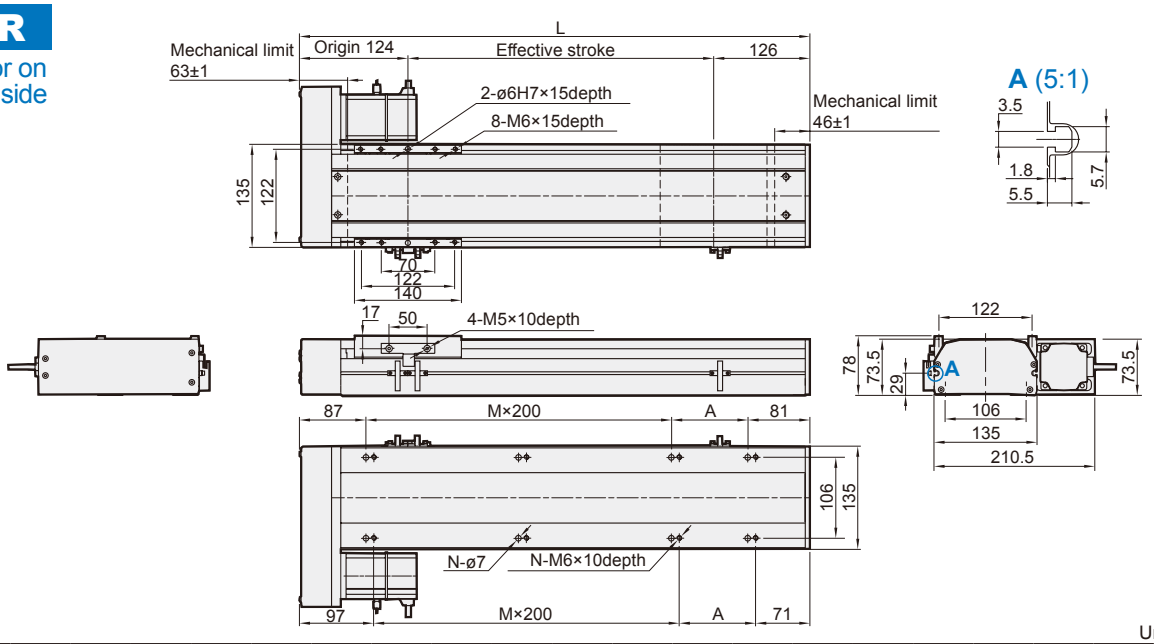


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	9.94	10.48	11.02	11.56	12.1	12.64	13.18	13.72	14.26	14.8	15.34	15.88	16.42	16.96	17.5	18.04	18.58	19.12	19.66	20.2

BR

Motor on right side



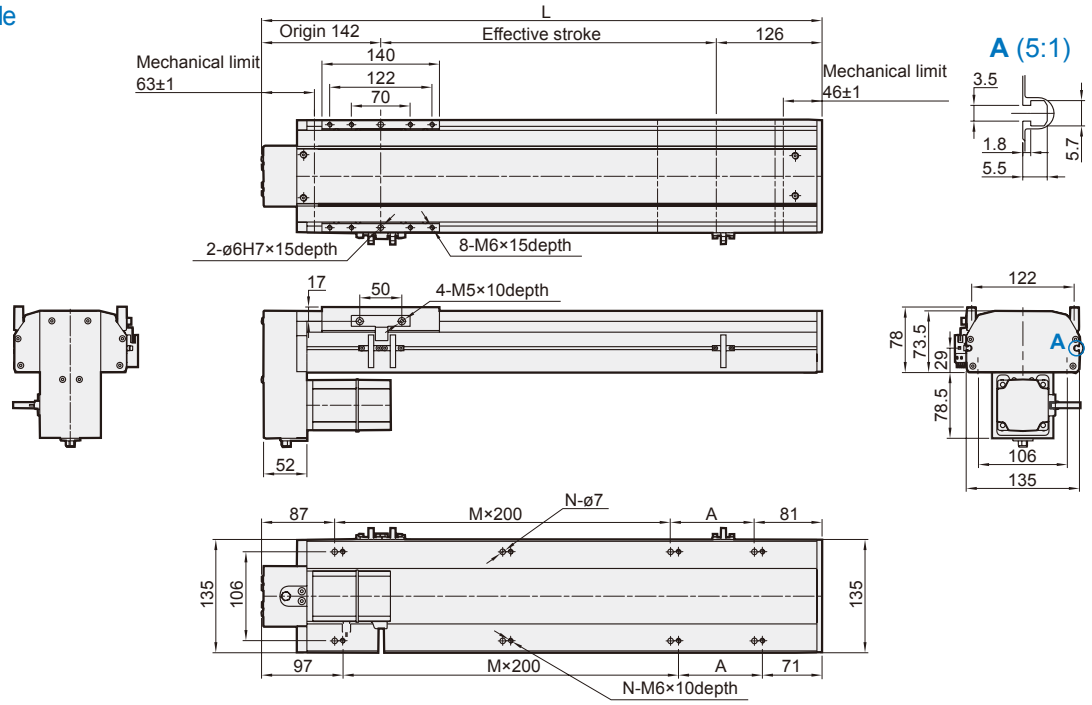
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	9.94	10.48	11.02	11.56	12.1	12.64	13.18	13.72	14.26	14.8	15.34	15.88	16.42	16.96	17.5	18.04	18.58	19.12	19.66	20.2

METS-14 Dimensions – Servo motor 200W, 400W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

BM
Motor on lower side



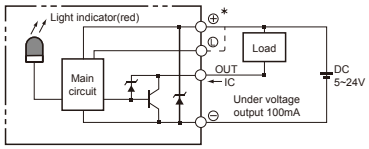
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368	418	468	518	568	618	668	718	768	818	868	918	968	1018	1068	1118	1168	1218	1268	1318
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	9.94	10.48	11.02	11.56	12.1	12.64	13.18	13.72	14.26	14.8	15.34	15.88	16.42	16.96	17.5	18.04	18.58	19.12	19.66	20.2

METS-17 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

Sensor layout



Specification

Model		METS-17			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	20	40
Max. speed (mm/s)		250	500	1000	2000
Stroke (mm)		100~1250 / 50 pitch			
Ball screw ø (mm)		C7ø20			
High rigidity linear guide (mm)		W20×H15			
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			
Servo motor		**400 W**			
Max. payload (kg)	Horizontal	120	110	75	35
	Vertical	40	30	14	7
Rated thrust (N)		1388	694	347	174
Coupling (mm)		12×14			
Servo motor		**750 W**			
Max. payload (kg)	Horizontal	120	120	83	50
	Vertical	50	40	25	10
Rated thrust (N)		2563	1281	640	320
Coupling (mm)		12×19			

Order example

METS-17 — L05 — 100 — M — M40B — C4 — 0001

Model | **Spec.** | **Stroke** | **Special order no.**

Stroke: 100~1250 mm, 50 mm pitch

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm
40	40 mm

Motor position

M*1	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

*1. **METS-17 / 75W** is not applicable motor installation "**M**" .

Motor brand, power output, brakes

M	Mitsubishi	**40**: 400W **75**: 750W	**B** *2
P	Panasonic		
Y	Yaskawa		
T	Delta		

*2 Need not show **B** with no brake.

Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

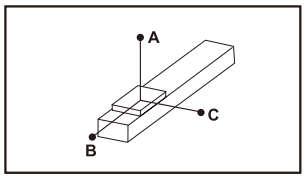
In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

METS-17 Performance charts 400W, 750W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

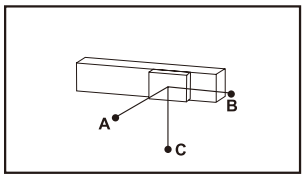
mindman

Allowable overhang



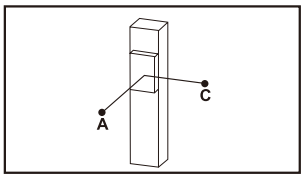
Unit: mm

Horizontal installation		A	B	C
Lead 5	60kg	2980	435	577
	100kg	2000	207	331
	110kg	1846	202	269
Lead 10	60kg	2440	428	570
	75kg	2010	253	336
	90kg	1851	207	274
Lead 20	30kg	2652	899	994
	50kg	1775	526	593
	75kg	1396	317	267
Lead 40	10kg	3545	2738	2003
	20kg	2545	1360	1185
	35kg	2640	664	739



Unit: mm

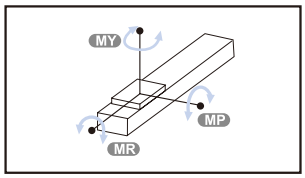
Wall installation		A	B	C
Lead 5	60kg	530	350	2438
	100kg	277	165	1995
	110kg	215	118	1836
Lead 10	60kg	533	353	2441
	75kg	293	179	2010
	90kg	230	133	1851
Lead 20	30kg	982	815	2573
	50kg	569	442	1680
	75kg	337	232	1258
Lead 40	10kg	2020	2671	3500
	20kg	1200	1281	2480
	35kg	755	591	2518



Unit: mm

Vertical installation		A	C
Lead 5	20kg	1510	1220
	30kg	1210	990
	40kg	992	962
Lead 10	15kg	1778	1778
	25kg	1050	1050
	30kg	750	750
Lead 16	5kg	1700	1700
	10kg	2202	2202
	14kg	1485	1485
Lead 20	7kg	650	650
	-	-	-
	-	-	-

Static loading moment



Unit: N.m

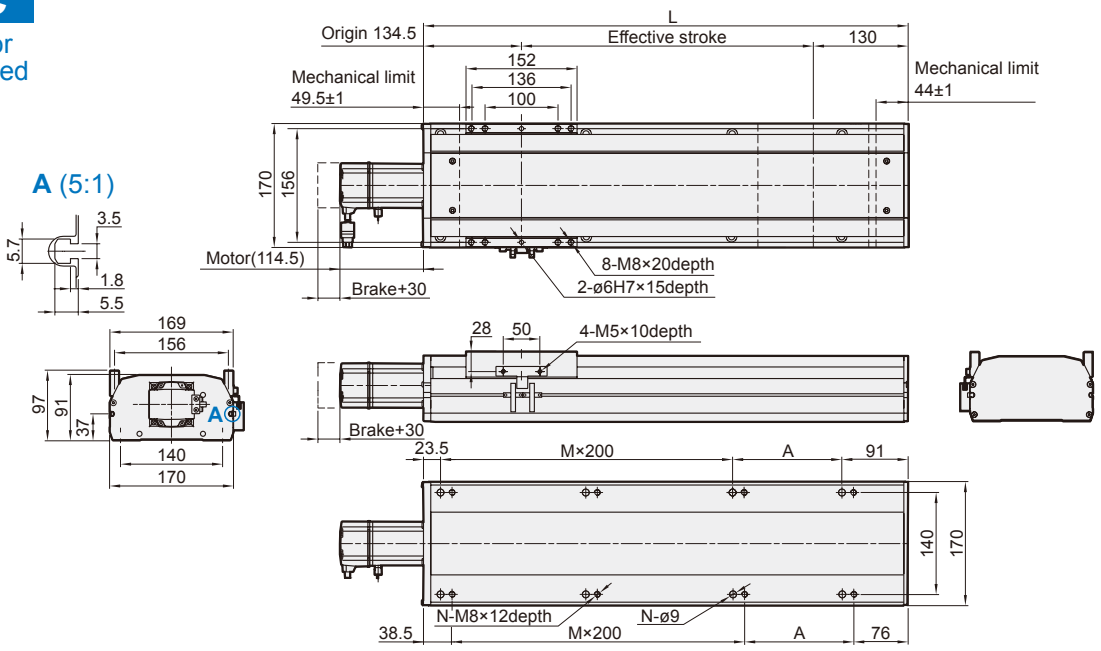
MY	1032
MP	1034
MR	908

Standard servo motors

Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	400	220	HF-KP43	MR-J3-40A
			750	220	HF-KP73	MR-J3-70A
		With brake(Vertical type)	400	220	HF-KP43B	MR-J3-40A
			750	220	HF-KP73B	MR-J3-70A
Panasonic	P	No brake(Horizontal type)	400	220	MHMD042P1S	MADDT2210
			750	220	MHMD082P1S	MADDT3520
		With brake(Vertical type)	400	220	MHMD042P1T	MADDT2210
			750	220	MHMD082P1T	MADDT3520
Delta	T	No brake(Horizontal type)	400	220	ECMA-C20604ES	ASD-B20421-B
			750	220	ECMA-C20807ES	ASD-B20721-B
		With brake(Vertical type)	400	220	ECMA-C20604FS	ASD-B20421-B
			750	220	ECMA-C20807FS	ASD-B20721-B

BC

Motor exposed

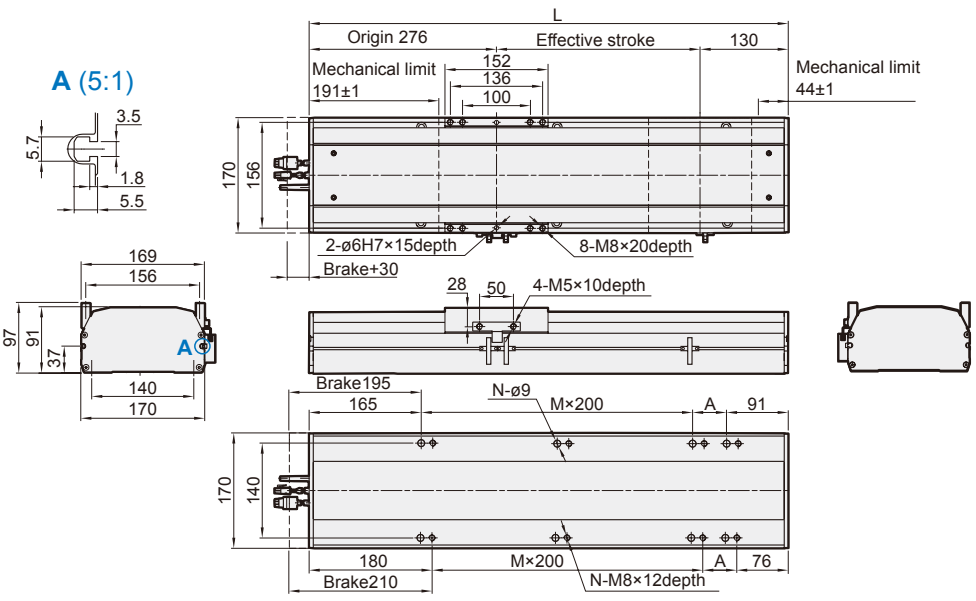


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.02	10.79	11.57	12.34	13.11	13.88	14.65	15.42	16.19	16.96	17.73	18.5	19.28	20.5	20.82	21.59	22.36	23.13	23.9	24.67	25.44	26.21	26.98	27.75

M

Motor built-in



Unit: mm

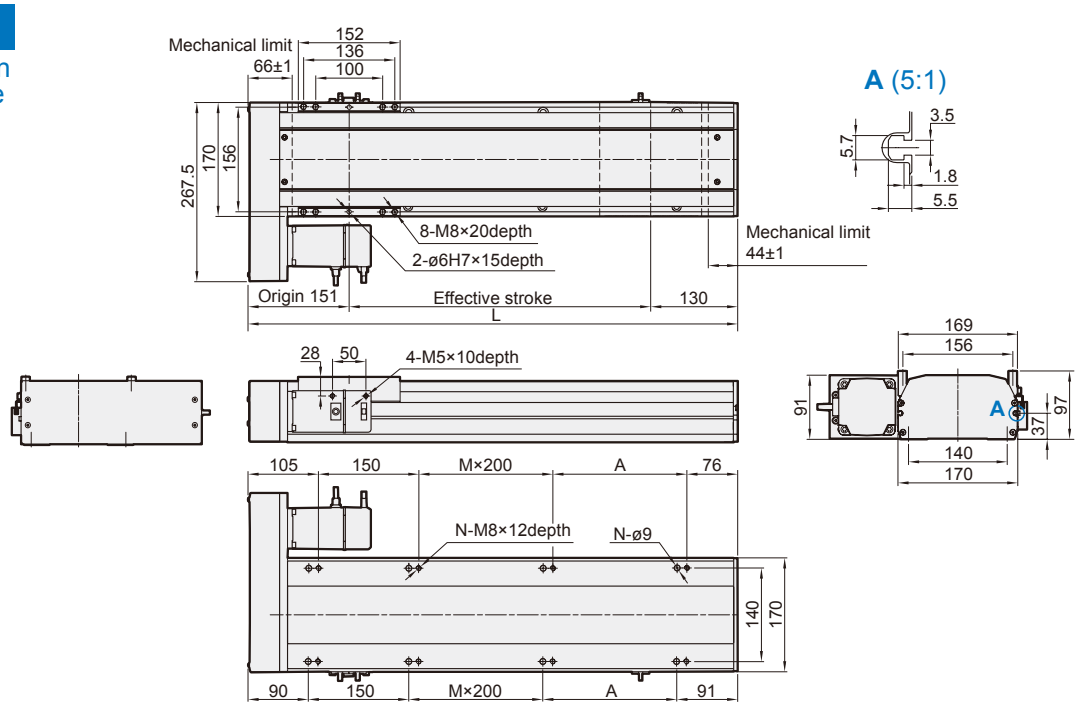
Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	506	556	606	656	706	756	806	856	906	956	1006	1056	1106	1156	1206	1256	1306	1356	1406	1456	1506	1556	1606	1656
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.89	11.67	12.45	13.22	14	14.78	15.55	16.33	17.11	17.88	18.66	19.44	20.22	20.99	21.77	22.55	23.33	24.1	24.88	25.66	26.44	27.21	27.99	28.77

METS-17 Dimensions – Servo motor 400W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

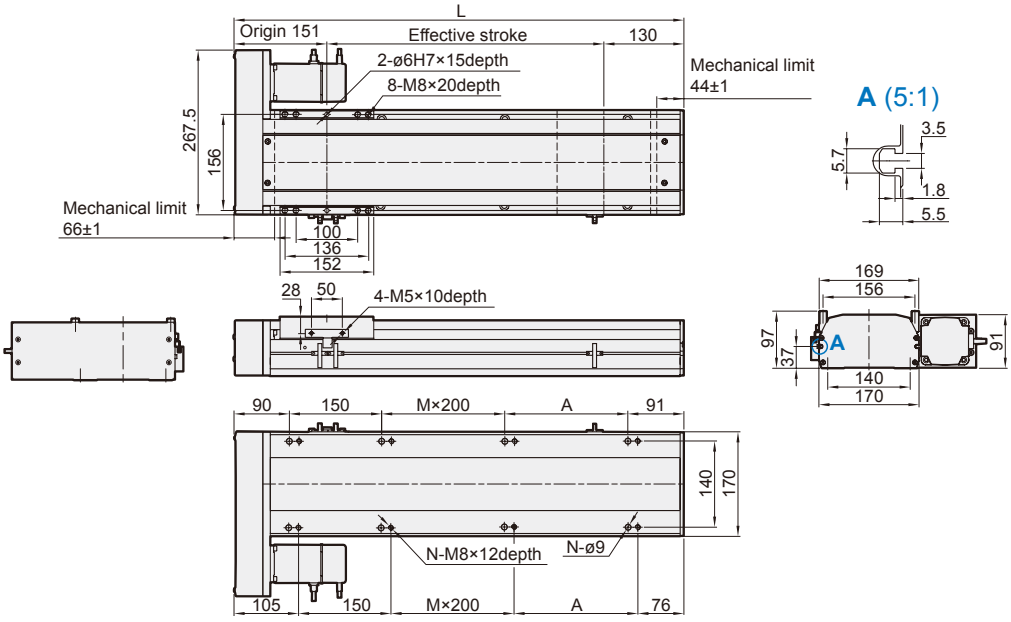
BL
Motor on left side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

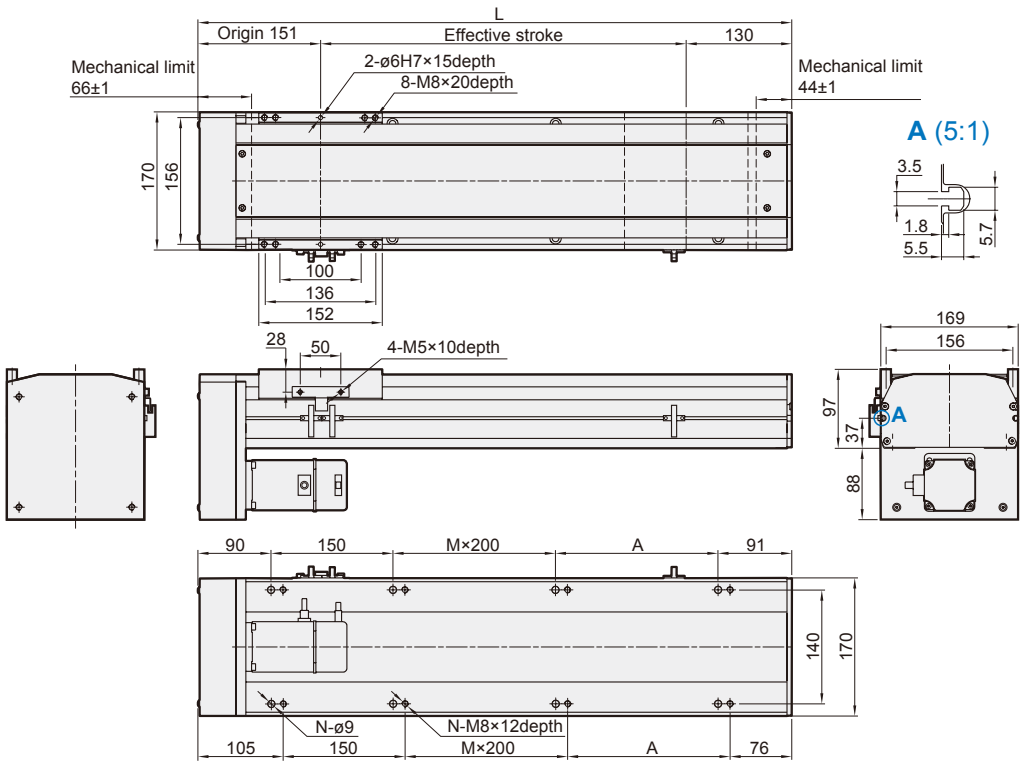
BR
Motor on right side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

BM
Motor on lower side



Unit: mm

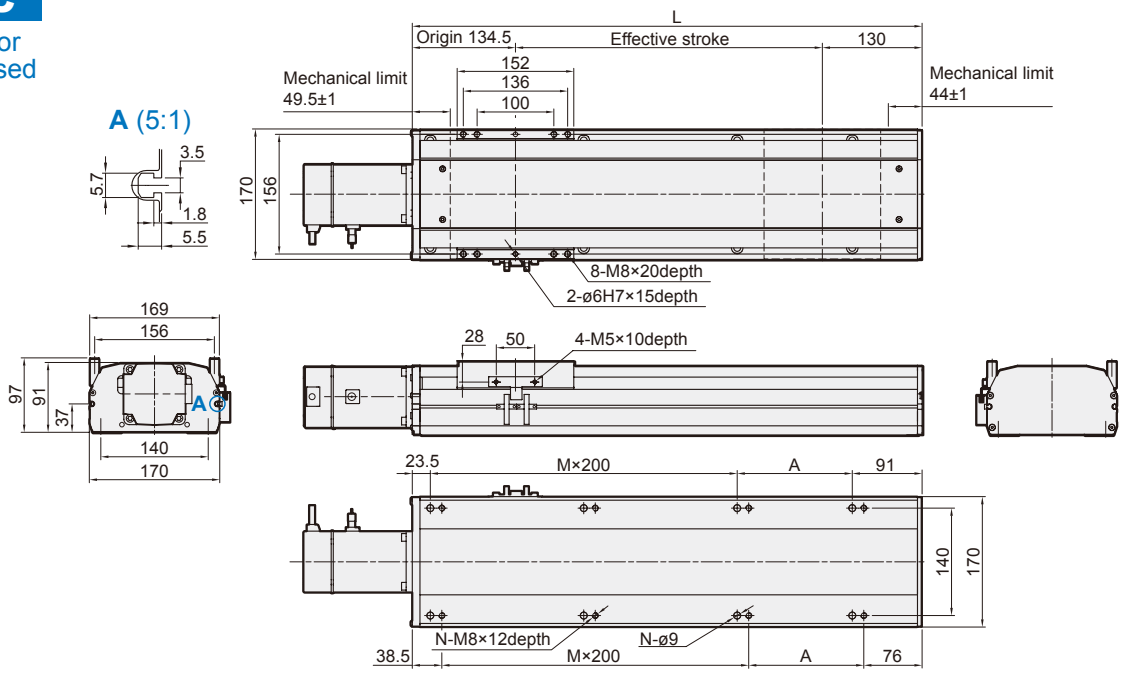
Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

METS-17 Dimensions – Servo motor 750W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

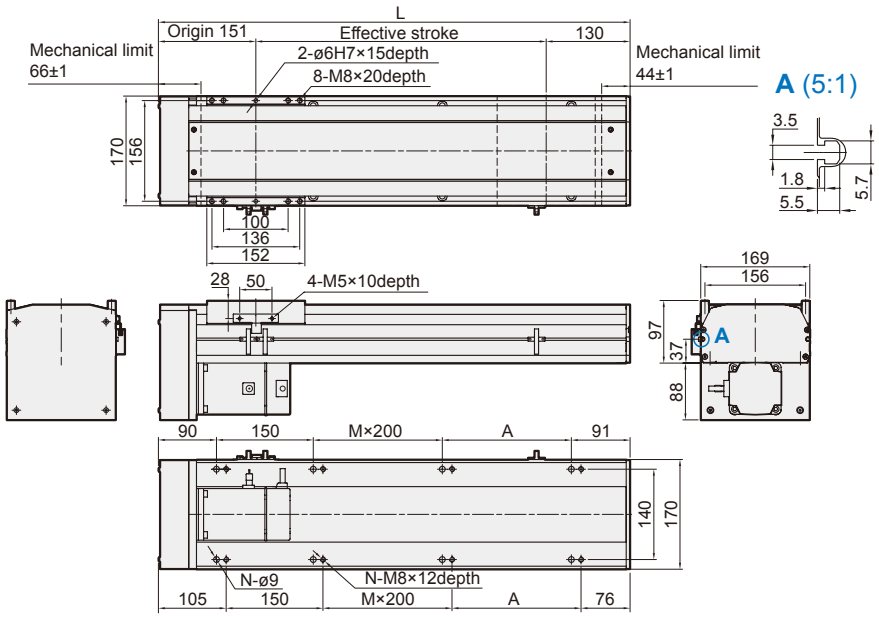
BC
Motor exposed



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	364.5	414.5	464.5	514.5	564.5	614.5	664.5	714.5	764.5	814.5	864.5	914.5	964.5	1014.5	1064.5	1114.5	1164.5	1214.5	1264.5	1314.5	1364.5	1414.5	1464.5	1514.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.02	10.79	11.57	12.34	13.11	13.88	14.65	15.42	16.19	16.96	17.73	18.5	19.28	20.5	20.82	21.59	22.36	23.13	23.9	24.67	25.44	26.21	26.98	27.75

BM
Motor built-in

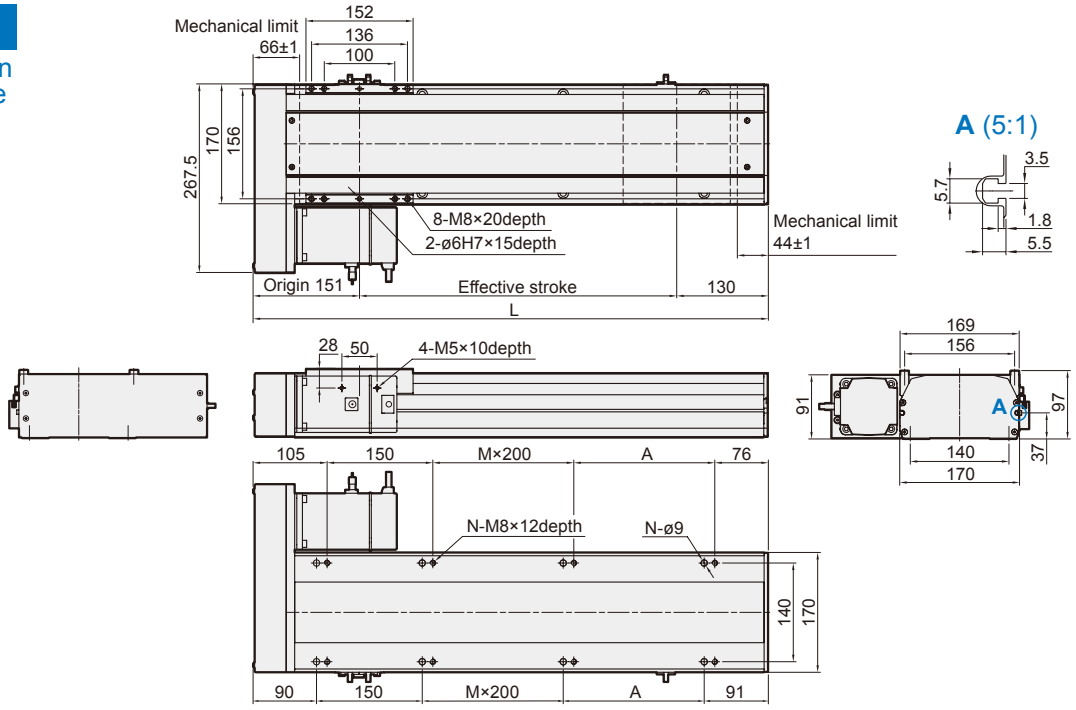


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

BL

Motor on left side

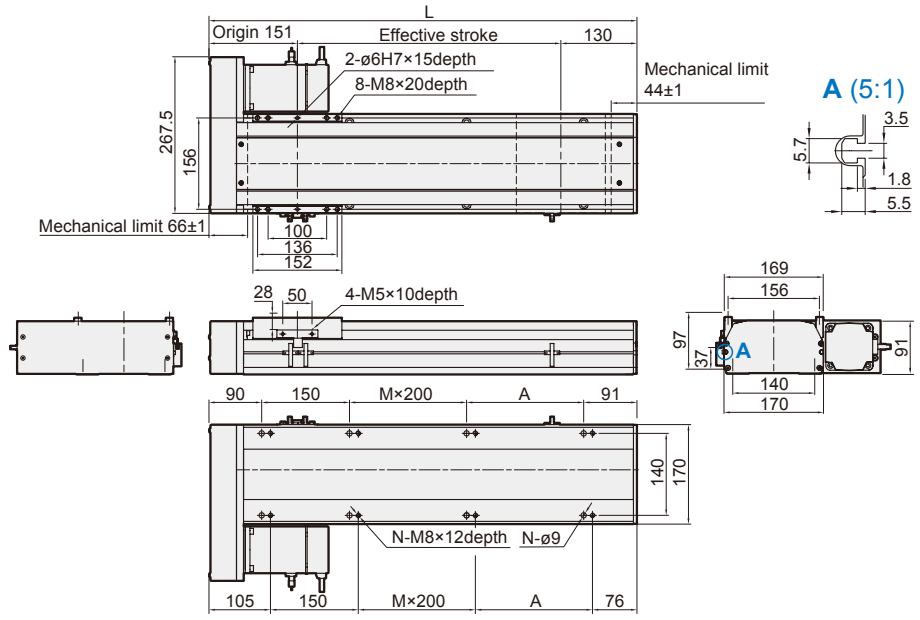


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

BR

Motor on right side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	381	431	481	531	581	631	681	731	781	831	881	931	981	1031	1081	1131	1181	1231	1281	1331	1381	1431	1481	1531
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
KG	10.3	11.07	11.84	12.61	13.38	14.15	14.92	15.69	16.47	17.24	18.01	18.78	19.55	20.32	21.09	21.86	22.63	23.4	24.18	24.95	25.72	26.49	27.26	28.03

METS-22 series

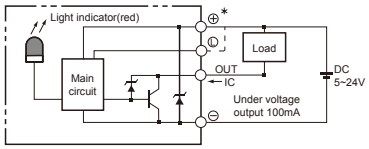
SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

Specification

Model		METS-22			
Repeatability (mm)		±0.01			
Belt lead (mm)		5	10	25	40
Max. speed		250	500	1250	2000
Servo motor		750W			
Max. payload (kg)	Horizontal	150	150	120	60
	Vertical	55	45	20	10
Rated thrust (N)		2563	1281	640	320
Stroke (mm)		100~1500 / 50 pitch			
Ball screw ø (mm)		C7ø25	C7ø25	C7ø25	C7ø20
High rigidity linear guide (mm)		W23×H18			
Coupling (mm)		17×19			12×19
Home sensor	Outside	EE-SX672 (NPN)			
	Built in	EE-SX674 (NPN)			

Sensor layout



Order example

METS-22 — L10 — 100 — M — M75B — C4 — 0001

Model | **Spec.** | **Stroke** | **Special order no.**

Stroke: 100~1500 mm, 50 mm pitch

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
25	25 mm
40	40 mm

Motor position

M	Built-in
BC	Exposed
BM	On lower side
BR	On right side
BL	On left side

Motor brand, power output, brakes

M	Mitsubishi	75	750W	B
P	Panasonic			
Y	Yaskawa			
T	Delta			

* Need not show **B** with no brake.

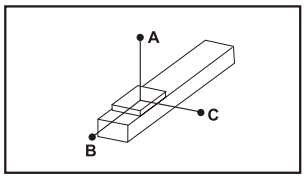
Home sensor

In side	
A	Motor side
B	Opposite motor side
Out side	
C	Motor side
D	Opposite motor side
No sensor	
E	None

Limit sensor

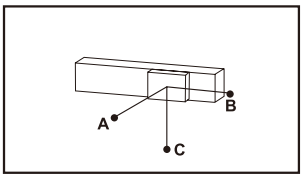
In side	
1	1 Pc
2	2 Pcs
Out side	
3	1 Pc
4	2 Pcs
No sensor	
5	None

Allowable overhang



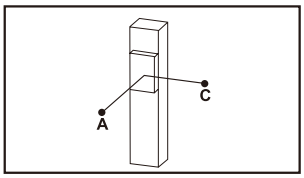
Unit: mm

Horizontal installation		A	B	C
Lead 5	60kg	3672	653	866
	100kg	3000	370	497
	150kg	2493	273	363
Lead 10	60kg	2652	899	994
	100kg	1775	526	593
	150kg	1396	317	267
Lead 25	50kg	2862	956	1191
	80kg	2412	581	773
	120kg	2025	373	556
Lead 40	10kg	4010	4010	3460
	30kg	3011	2003	1911
	60kg	2453	730	980



Unit: mm

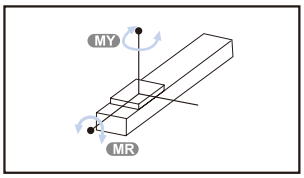
Wall installation		A	B	C
Lead 5	60kg	795	525	3657
	100kg	416	248	2993
	150kg	290	159	2479
Lead 10	60kg	982	815	2573
	100kg	569	442	1680
	150kg	337	232	1258
Lead 25	50kg	1207	879	2862
	80kg	779	504	2412
	120kg	515	295	2025
Lead 40	10kg	3057	4113	4113
	30kg	2112	2108	3387
	60kg	1020	668	2461



Unit: mm

Vertical installation		A	C
Lead 5	30kg	2688	2688
	50kg	1893	1893
	70kg	1640	1640
Lead 10	20kg	2297	2297
	30kg	1518	1518
	45kg	999	999
Lead 25	15kg	2767	2767
	20kg	2100	2100
	25kg	1702	1702
Lead 40	-	-	-
	-	-	-
	-	-	-

Static loading moment



Unit: N.m

MY	2052
MP	2052
MR	1810

Standard servo motors

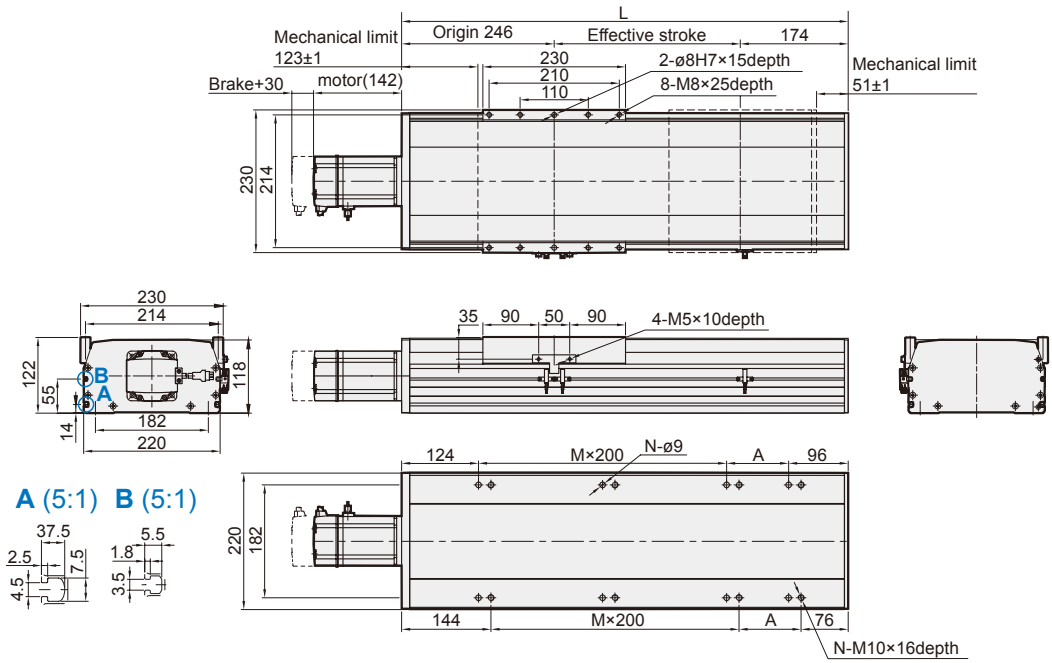
Brand	Mark	Brake	Watt	AC-Voltage	Motor model	Compatible driver model
Mitsubishi	M	No brake(Horizontal type)	750	220	HF-KP73	MR-J3-70A
		With brake(Vertical type)	750	220	HF-KP73B	MR-J3-70A
Panasonic	P	No brake(Horizontal type)	750	220	MHMD082P1S	MADDT3520
		With brake(Vertical type)	750	220	MHMD082P1T	MADDT3520
Delta	T	No brake(Horizontal type)	750	220	ECMA-C20807ES	ASD-B20721-B
		With brake(Vertical type)	750	220	ECMA-C20807FS	ASD-B20721-B

METS-22 Dimensions – Servo motor 750W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

mindman

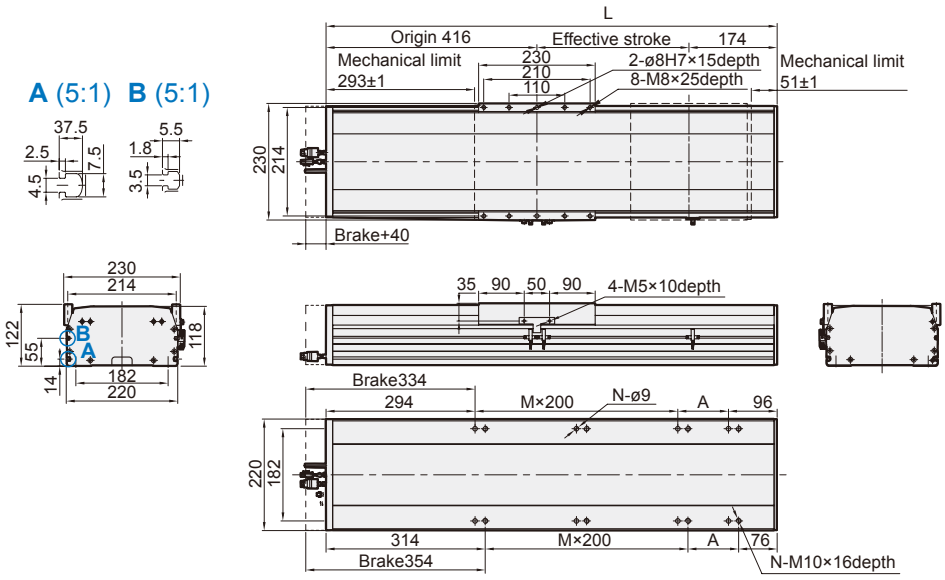
BC
Motor exposed



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
KG	26.86	28.32	29.78	31.24	32.7	34.16	35.62	37.08	38.54	40	41.46	42.92	44.38	45.84	47.3	48.76	50.22	51.68	53.14	54.6	56.06	57.52	58.98	60.44	61.9	63.36	64.82	66.28	67.74

M
Motor built-in

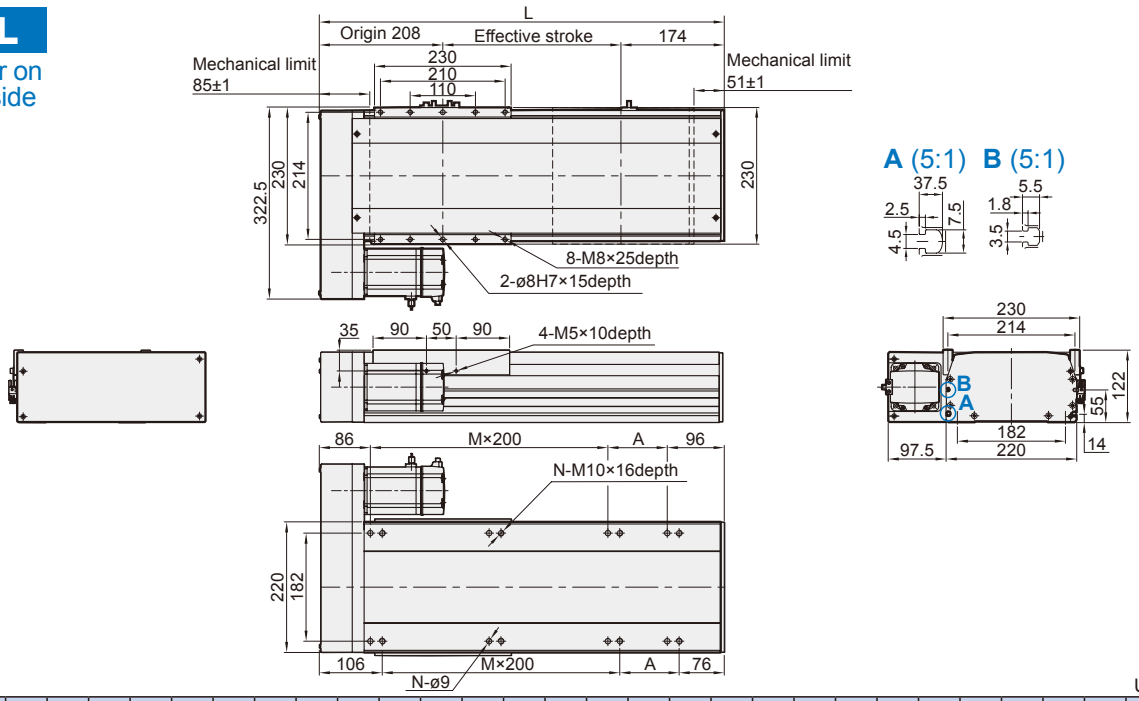


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690	1740	1790	1840	1890	1940	1990	2040	2090
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
KG	29.32	30.79	32.26	33.73	35.2	36.67	38.14	39.61	41.08	42.55	44.02	45.49	46.96	48.43	49.9	51.37	52.84	54.31	55.78	57.25	58.72	60.19	61.66	63.13	64.6	66.07	67.54	69.01	70.48

BL

Motor on left side

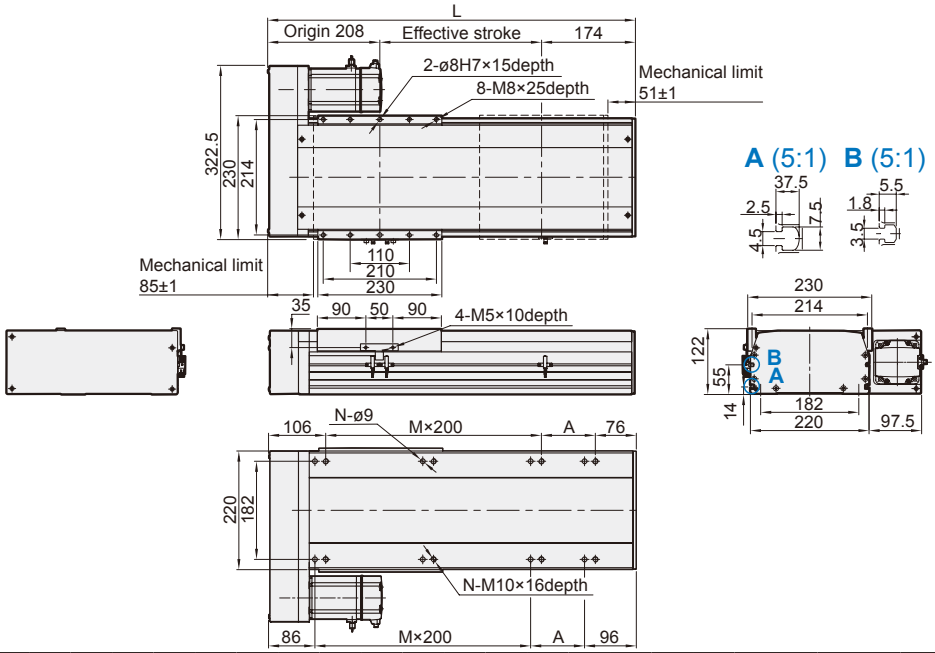


Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
KG	25.66	27.12	28.58	30.04	31.5	32.96	34.42	35.88	37.34	38.8	40.26	41.72	43.18	44.64	46.1	47.56	49.02	50.48	51.94	53.4	54.86	56.32	57.78	59.24	60.7	62.16	63.62	65.08	66.54

BR

Motor on right side



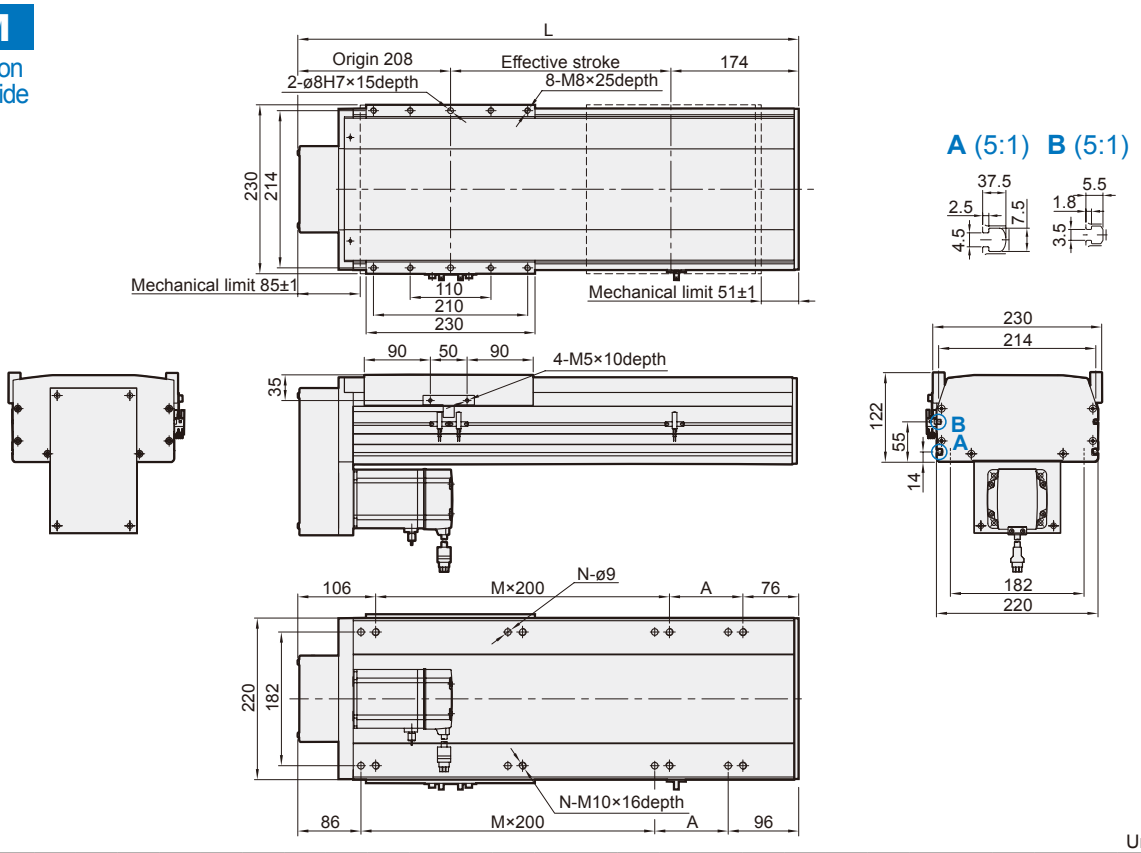
Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
KG	25.66	27.12	28.58	30.04	31.5	32.96	34.42	35.88	37.34	38.8	40.26	41.72	43.18	44.64	46.1	47.56	49.02	50.48	51.94	53.4	54.86	56.32	57.78	59.24	60.7	62.16	63.62	65.08	66.54

METS-22 Dimensions – Servo motor 750W

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITHOUT MOTOR)

BM
Motor on lower side



Unit: mm

Stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
KG	25.66	27.12	28.58	30.04	31.5	32.96	34.42	35.88	37.34	38.8	40.26	41.72	43.18	44.64	46.1	47.56	49.02	50.48	51.94	53.4	54.86	56.32	57.78	59.24	60.7	62.16	63.62	65.08	66.54

METGC-4 series

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

Specification

Model		METGC-4	
Repeatability (mm)		±0.01	
Ball screw lead (mm)		1	2.5
Max. speed (mm/s)	Horizontal	≤ 58	≤ 145
	Vertical	≤ 58	≤ 129
Max. payload (kg)	Horizontal	≤ 24	≤ 24
	Wall	≤ 24	≤ 24
	Vertical	≤ 3.5	≤ 7.5
Rated thrust (N)		2188	875
Stroke (mm)		50~500 / 50 pitch	
Motor dimension (mm)		□ 35	
Ball screw ø (mm)		C7ø8	

* When the stroke is over 200mm, the run-out of the ballscrew will occur. We recommend to low down the working speed under this circumstances.
* When max speed shown here is when software speed setting is 100%

Order example

METGC-4 — L01 — 100 — M — TC100 — 03 — N1 — 0001

Model: METGC-4
Spec.: L01

Ball screw brand

L	T-Standard MIT

Ball screw lead

01	1 mm
2.5	2.5 mm

Stroke

50~500 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Controller

TC100

* Please refer to page 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

I/O cable

—	I/O cable
N1	Shielded I/O cable

* Standard: 1.5 m

Special order no.: 0001

Order example of controller

TC100 — 03

Controller

TC100

Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

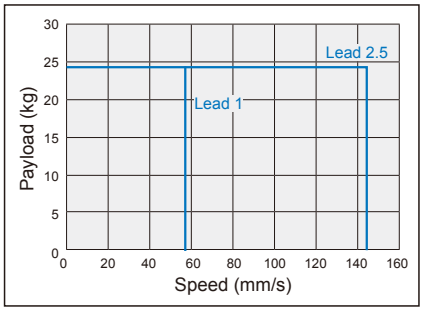
* Standard: 3 m

METGC-4 Performance charts

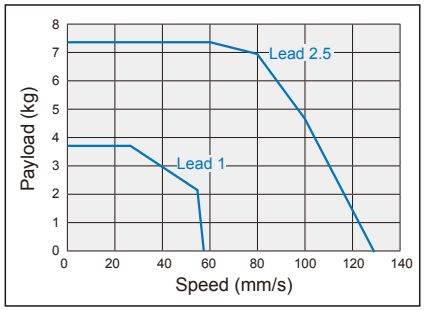
SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

Speed-payload curve diagram

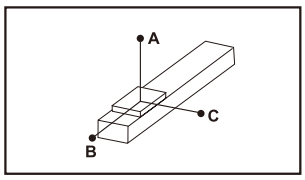
Horizontal



Vertical

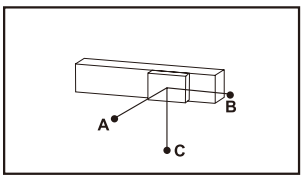


Allowable overhang



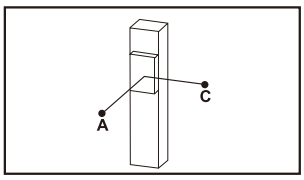
Unit: mm

Horizontal installation		A	B	C
Lead 1	12kg	540	54	144
	18kg	380	33	49
	24kg	230	23	34
Lead 2.5	10kg	570	57	83
	16kg	320	32	7
	24kg	190	19	27



Unit: mm

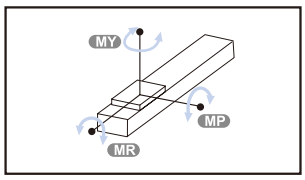
Wall installation		A	B	C
Lead 1	12kg	94	69	699
	18kg	56	44	411
	24kg	34	30	308
Lead 2.5	10kg	58	47	521
	15kg	40	34	343
	20kg	28	25	245



Unit: mm

Vertical installation		A	C
Lead 1	2.6kg	288	288
	3kg	254	254
	3.5kg	222	222
Lead 2.5	4kg	170	170
	7.1kg	100	100
	7.5kg	97	97

Static loading moment



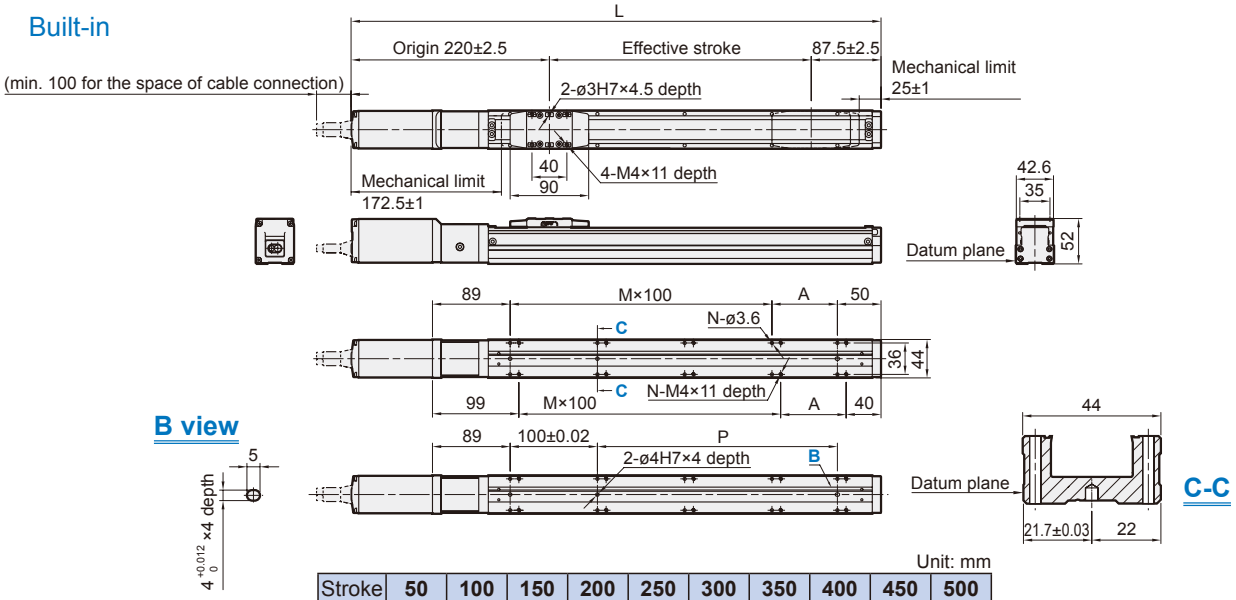
Unit: N.m

MY	79
MP	79
MR	116

- The torque value in the chart indicate the center of gravity.
- Operation life is 10000km when the product is using under the specified conditions.
- Data information is not for ceiling-mount inverse use.
  Contact us for the details if you want to apply ceiling-mount inverse usage.

M

Built-in



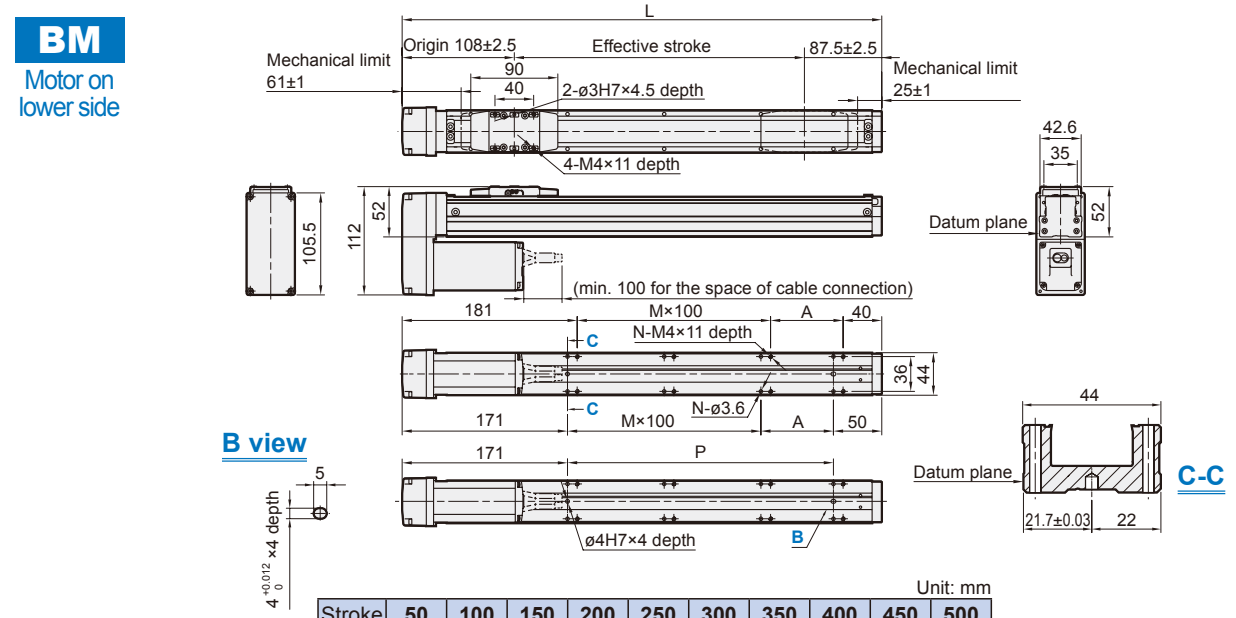
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	357.5	407.5	457.5	507.5	557.5	607.5	657.5	707.5	757.5	807.5
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG*	1.2	1.45	1.7	1.95	2.19	2.44	2.69	2.94	3.18	3.43

* Weight of model with motor.

BM

Motor on lower side



Unit: mm

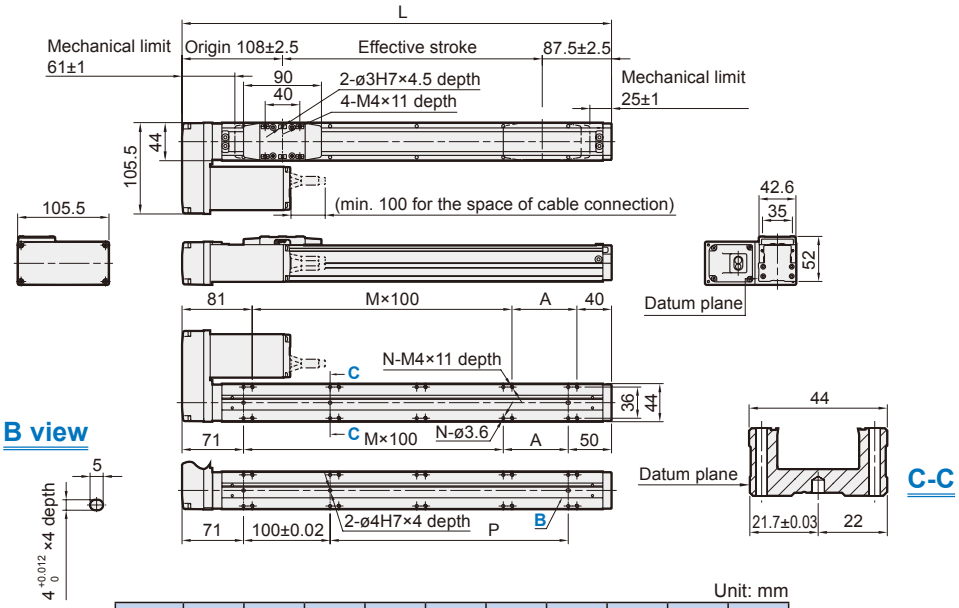
Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	0	0	1	1	2	2	3	3	4	4
N	4	4	6	6	8	8	10	10	12	12
P	25	75	125	175	225	275	325	375	425	475
KG*	1.46	1.71	1.96	2.2	2.45	2.7	2.95	3.19	3.44	3.69

* Weight of model with motor.

METGC-4 Dimensions

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

BL
Motor on left side

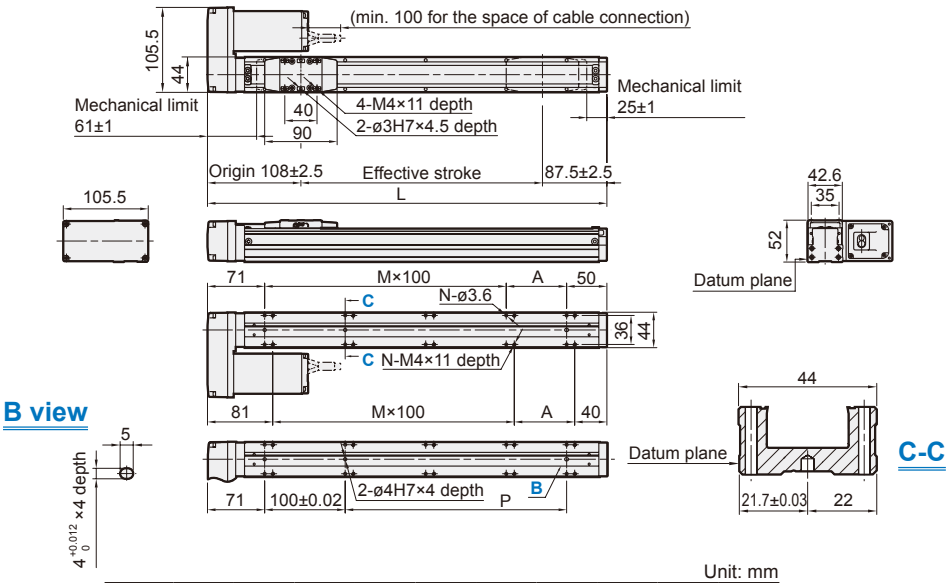


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG*	1.46	1.71	1.96	2.2	2.45	2.7	2.95	3.19	3.44	3.69

* Weight of model with motor.

BR
Motor on right side



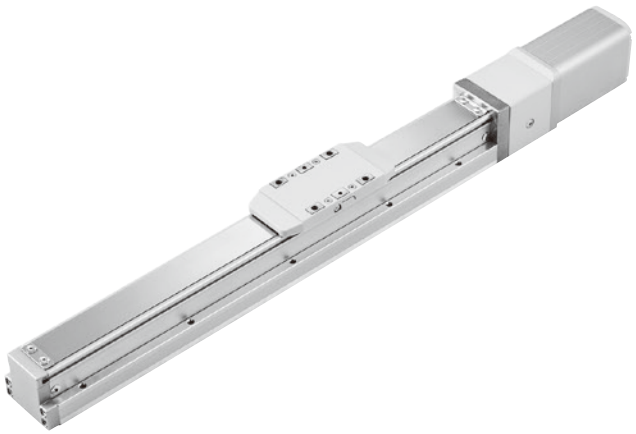
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	246	296	346	396	446	496	546	596	646	696
A	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5
N	6	6	8	8	10	10	12	12	14	14
P	25	75	125	175	225	275	325	375	425	475
KG*	1.46	1.71	1.96	2.2	2.45	2.7	2.95	3.19	3.44	3.69

* Weight of model with motor.

METGC-5 series

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)



Specification

Model		METGC-5			
Repeatability (mm)		±0.01			
Ball screw lead (mm)		2	5	10	20
Max. speed (mm/s)	Horizontal	≤ 113	≤ 288	≤ 508	≤ 917
	Vertical	≤ 113	≤ 288	≤ 383	≤ 700
Max. payload (kg)	Horizontal	≤ 40	≤ 40	≤ 40	≤ 13.5
	Wall	≤ 30	≤ 30	≤ 15	≤ 10
	Vertical	≤ 15	≤ 15	≤ 3.2	≤ 1.2
Rated thrust (N)		1147	459	229	115
Stroke (mm)		50~800 / 50 pitch			
Motor dimension (mm)		□42			
Ball screw ø (mm)		C7ø12			

* When the stroke is over 500mm, the run-out of the ballscrew will occur. We recommend to low down the working speed under this circumstances.
* When max speed shown here is when software speed setting is 100%

Order example

METGC-5 — L05 — 100 — M — TC100 — 03 — N1 — 0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

02	2 mm
05	5 mm
10	10 mm
20	20 mm

Stroke

50~800 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Controller

TC100

* Please refer to page 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

I/O cable

—	I/O cable
N1	Shielded I/O cable

* Standard: 1.5 m

Order example of controller

TC100 — 03

Controller

TC100

Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

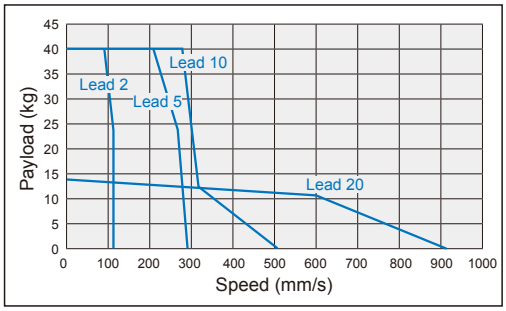
* Standard: 3 m

METGC-5 Performance charts

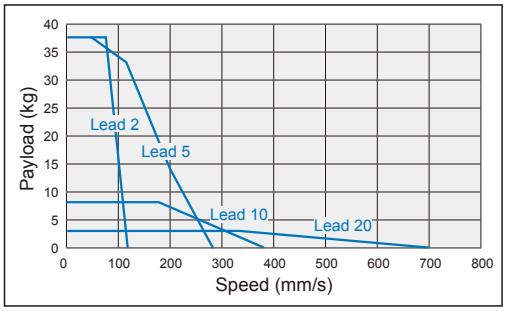
SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

Speed-payload curve diagram

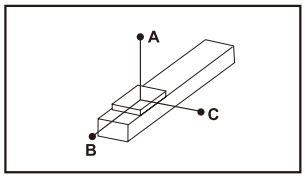
Horizontal



Vertical

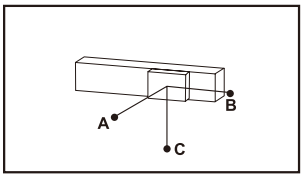


Allowable overhang



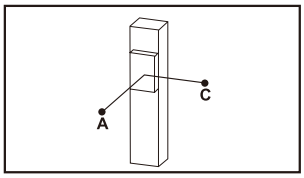
Unit: mm

Horizontal installation		A	B	C
Lead 2	20kg	430	43	61
	30kg	250	25	36
	40kg	170	17	25
Lead 5	24kg	260	26	35
	30kg	190	19	26
	40kg	130	13	18
Lead 10	15kg	470	47	63
	25kg	240	24	33
	40kg	110	11	15
Lead 20	4kg	801	164	194
	9kg	493	73	91
	13.5kg	580	58	78



Unit: mm

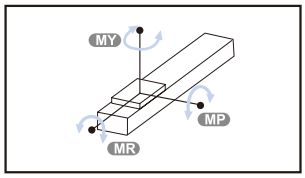
Wall installation		A	B	C
Lead 2	10kg	137	100	1100
	20kg	61	45	750
	30kg	36	26	550
Lead 5	10kg	100	75	650
	20kg	45	32	420
	30kg	25	19	275
Lead 10	5kg	180	145	600
	10kg	91	68	512
	15kg	60	42	550
Lead 20	4kg	211	173	990
	8kg	111	86	720
	10kg	97	73	930



Unit: mm

Vertical installation		A	C
Lead 2	7kg	158	158
	10.5kg	106	106
	15kg	77	77
Lead 5	7kg	140	140
	13.5kg	80	80
	15kg	75	75
Lead 10	0.8kg	1059	1059
	1.6kg	563	563
	3.2kg	298	298
Lead 20	0.4kg	1809	1809
	0.8kg	968	968
	1.2kg	706	706

Static loading moment



Unit: N.m

MY	103
MP	103
MR	144

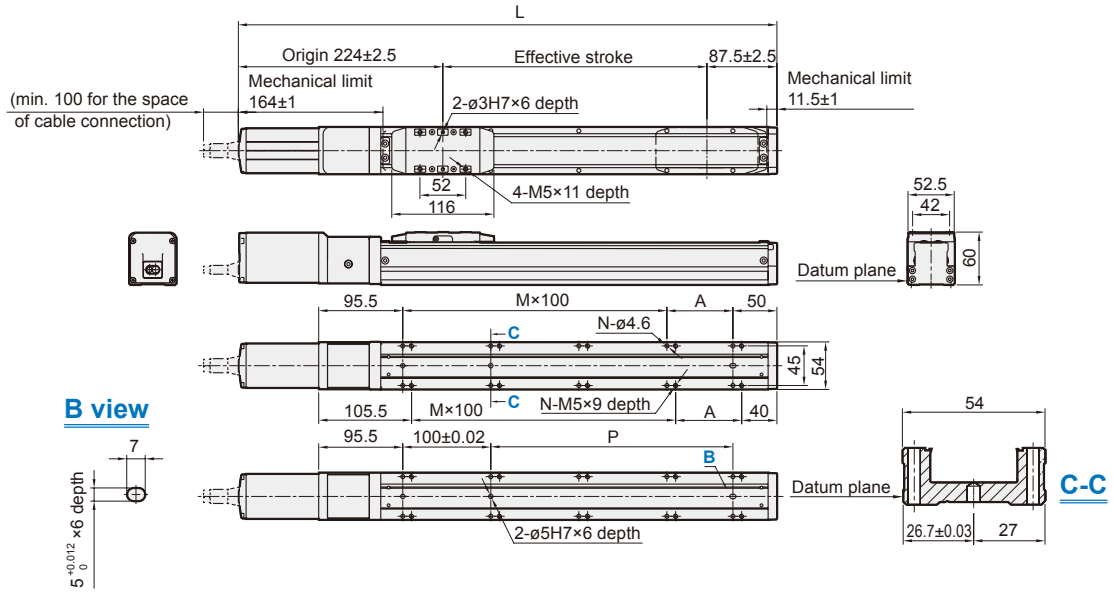
- The torque value in the chart indicate the center of gravity.
- Operation life is 10000km when the product is using under the specified conditions.
- Data information is not for ceiling-mount inverse use.
  Contact us for the details if you want to apply ceiling-mount inverse usage.

METGC-5 Dimensions

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

M

Built-in



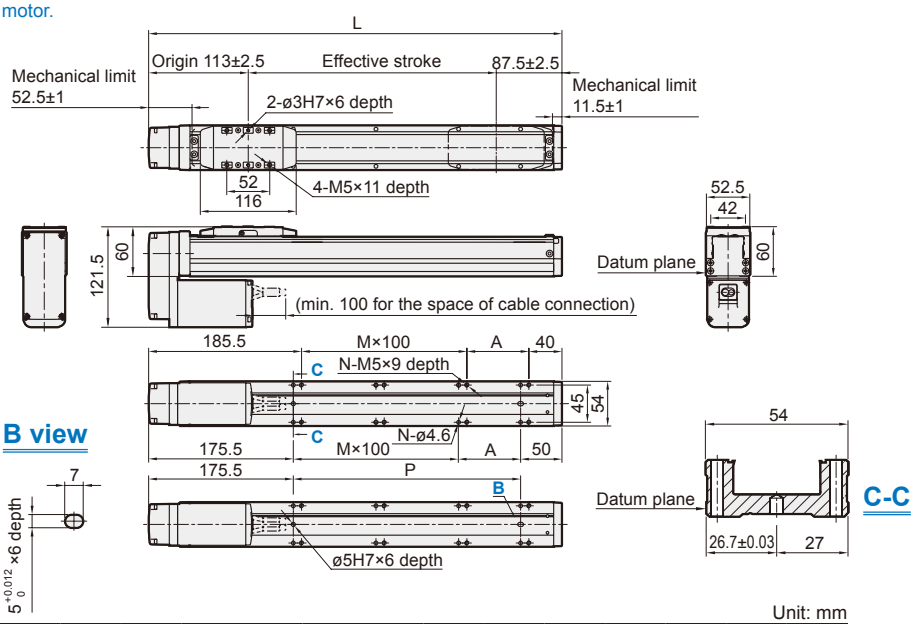
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	361.5	411.5	461.5	511.5	561.5	611.5	661.5	711.5	761.5	811.5	861.5	911.5	961.5	1011.5	1061.5	1111.5
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG*	1.97	2.18	2.4	2.62	2.83	3.05	3.27	3.48	3.7	3.92	4.13	4.35	4.57	4.78	5	5.22

* Weight of model with motor.

BM

Motor on lower side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	0	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7
N	4	4	6	6	8	8	10	10	12	12	14	14	16	16	18	18
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG*	2.34	2.54	2.73	2.93	3.13	3.32	3.52	3.72	3.91	4.11	4.31	4.5	4.7	4.9	5.09	5.29

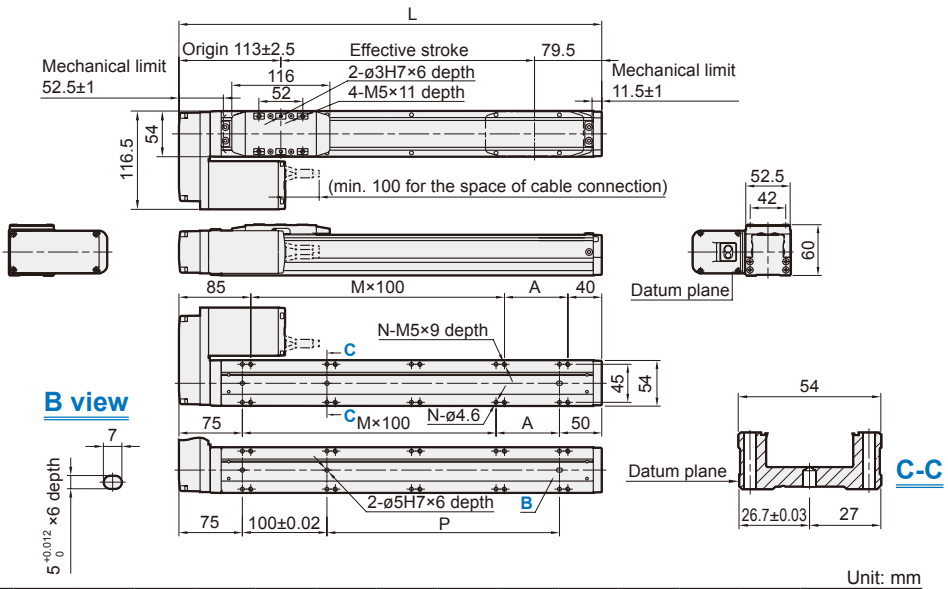
* Weight of model with motor.

METGC-5 Dimensions

SLIDER ELECTRIC CYLINDER - BUILT-IN GUIDEWAY BALL SCREW DRIVE (WITH MOTOR)

mindman

BL
Motor on left side

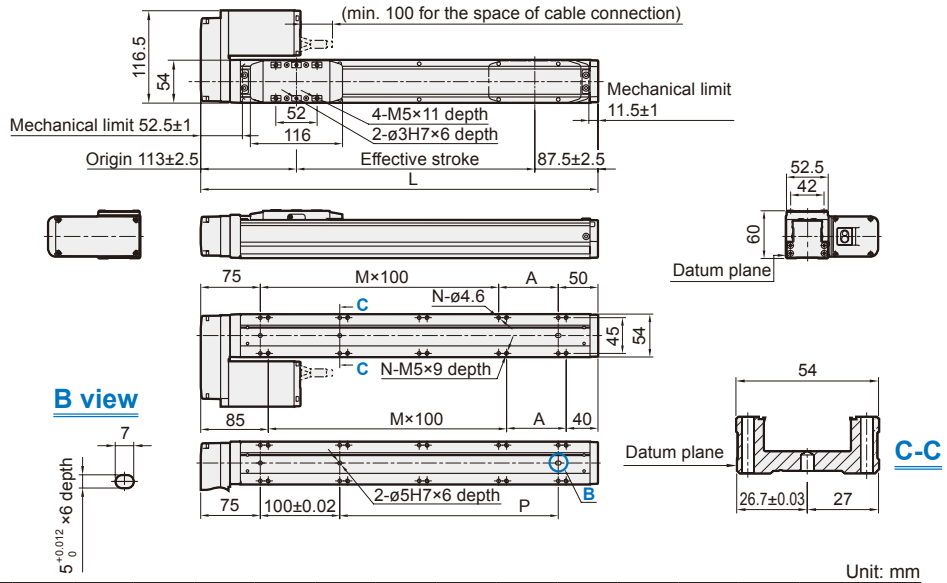


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG*	2.34	2.54	2.73	2.93	3.13	3.32	3.52	3.72	3.91	4.11	4.31	4.5	4.7	4.9	5.09	5.29

* Weight of model with motor.

BR
Motor on right side



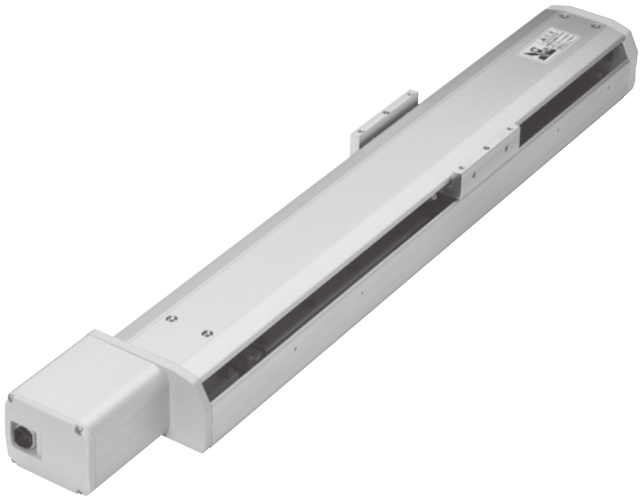
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
M	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
N	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
P	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
KG*	2.34	2.54	2.73	2.93	3.13	3.32	3.52	3.72	3.91	4.11	4.31	4.5	4.7	4.9	5.09	5.29

* Weight of model with motor.

METSC-10 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)



Specification

Model		METSC-10		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		≤250	≤500	≤1000
Maximum payload	Horizontal (kg)	≤50	≤30	≤15
	Vertical (kg)	≤12	≤8	≤4
Rated thrust (N)		565	283	141
Stroke / pitch (mm) (*2)		50~1050 / 50 Pitch		
Motor dimension (mm)		□42		
Ball screw spec (mm)		C7ø16		

*1.The maximum speed shown here is when software speed setting is 100%. When the stroke is over 750mm, the run-out of the ball screw will occur.

*2.We recommend to low down the working speed under this circumstances.

Order example of cylinder

METSC-10 — L05 — 100 — M — TC100 — 03 — A0001

Model | **Spec.** | **Special order no.**

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~1050 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

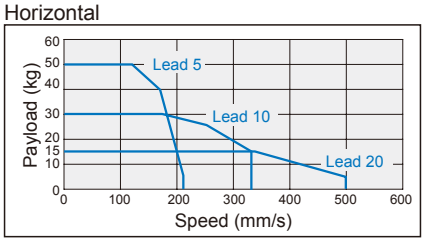
METSC-10 Performance charts

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

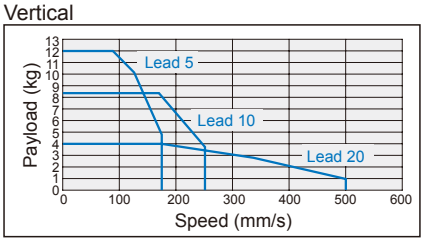
mindman

Speed-payload curve diagram

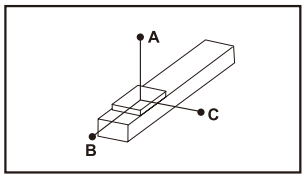
Horizontal



Vertical

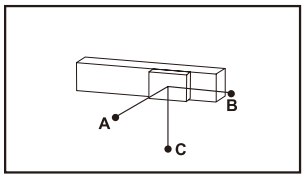


Allowable overhang



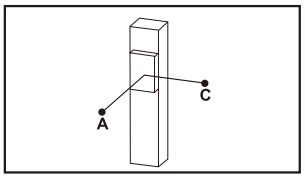
Unit: mm

Horizontal installation		A	B	C
Lead 5	10kg	900	55	55
	30kg	680	40	40
	50kg	420	23	23
Lead 10	10kg	650	75	75
	20kg	450	60	60
	30kg	350	40	40
Lead 20	5kg	550	130	120
	10kg	400	90	90
	15kg	300	70	65



Unit: mm

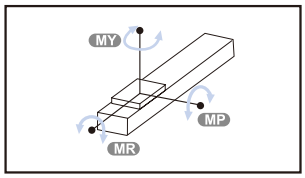
Wall installation		A	B	C
Lead 5	10kg	65	65	1000
	30kg	55	55	900
	50kg	45	45	750
Lead 10	10kg	80	80	700
	20kg	60	60	500
	30kg	40	40	350
Lead 20	5kg	60	60	280
	10kg	40	45	185
	15kg	30	30	140



Unit: mm

Vertical installation		A	C
Lead 5	8kg	200	200
	10kg	160	160
	12kg	130	130
Lead 10	4kg	300	300
	6kg	200	200
	8kg	160	160
Lead 20	2kg	520	520
	3kg	350	350
	4kg	250	250

Static loading moment

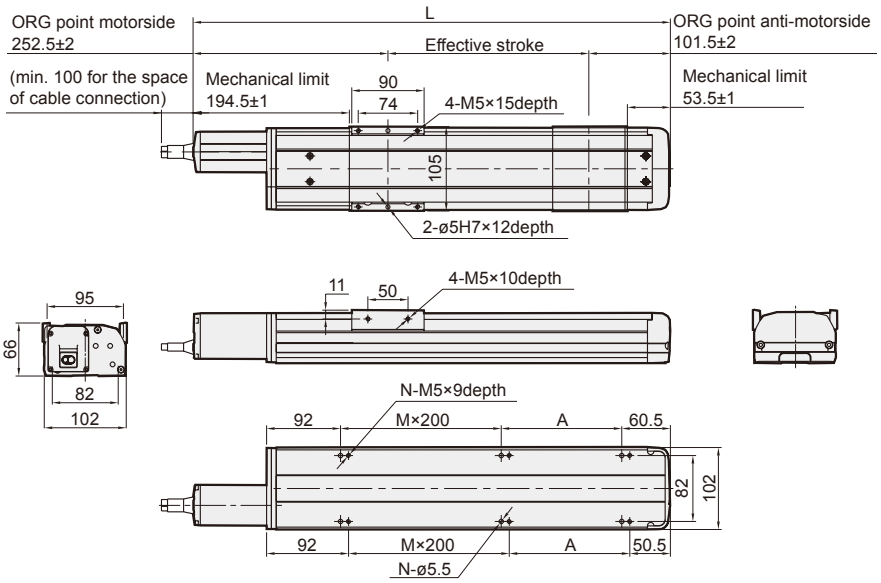


Unit: N.m

MY	110
MP	110
MR	120

M

Motor built-in

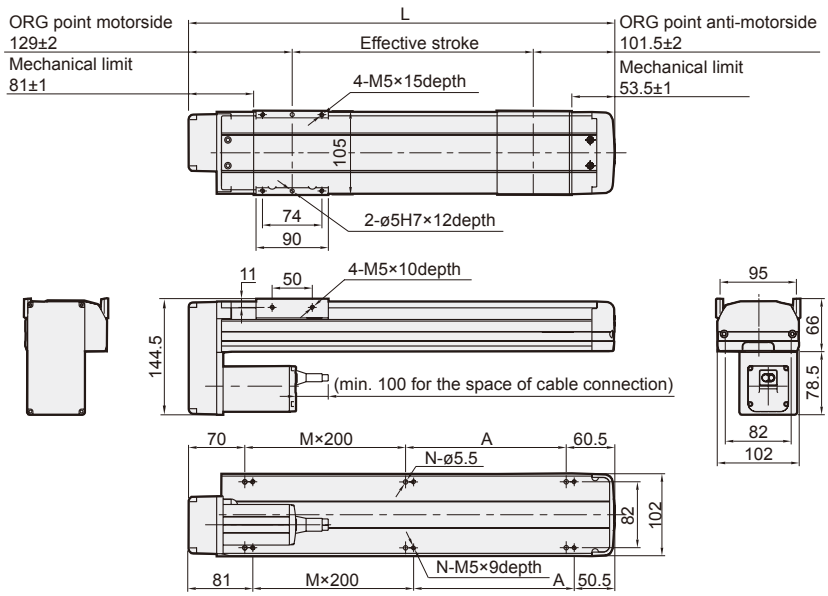


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	394	444	494	544	594	644	694	744	794	844	892	944	994	1044	1094	1144	1194	1244	1294	1344	1394
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.06	5.44	5.82	6.21	6.59	6.98	7.36	7.75	8.13	8.52	8.9	9.29	9.67	10.06	10.44	10.83	11.21	11.6	11.98	12.37	12.75

BM

Motor on lower side



Unit: mm

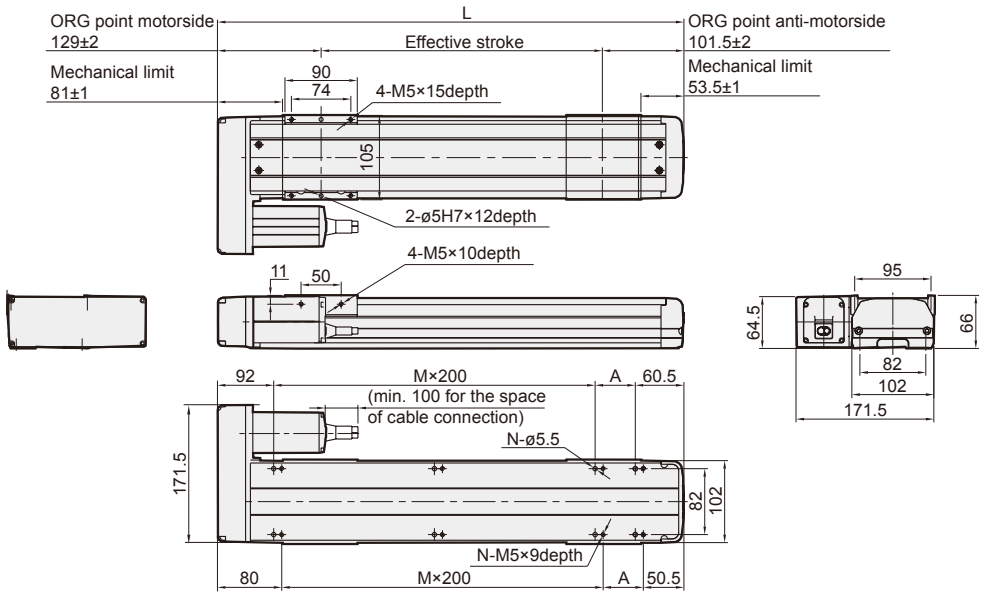
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	280.5	330.5	380.5	430.5	480.5	530.5	580.5	630.5	680.5	730.5	780.5	830.5	880.5	930.5	980.5	1030.5	1080.5	1130.5	1180.5	1230.5	1280.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.27	5.66	6.05	6.43	6.82	7.2	7.59	7.97	8.36	8.74	9.13	9.51	9.9	10.28	10.67	11.05	11.44	11.82	12.21	12.59	12.98

METSC-10 Dimensions

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

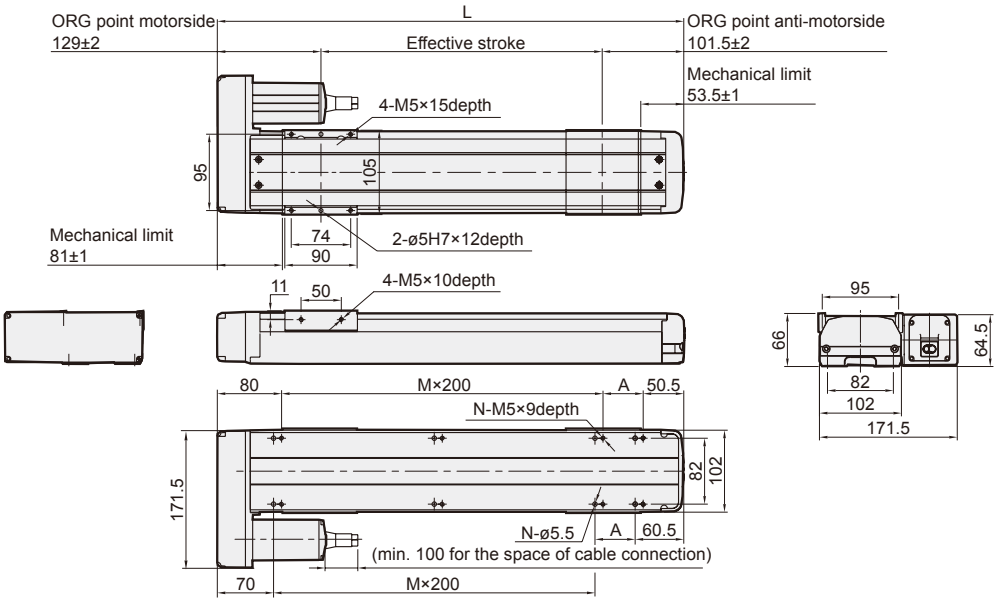
BL
Motor on left side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	394	444	494	544	594	644	694	744	794	844	892	944	994	1044	1094	1144	1194	1244	1294	1344	1394
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.06	5.44	5.82	6.21	6.59	6.98	7.36	7.75	8.13	8.52	8.9	9.29	9.67	10.06	10.44	10.83	11.21	11.6	11.98	12.37	12.75

BR
Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	280.5	330.5	380.5	430.5	480.5	530.5	580.5	630.5	680.5	730.5	780.5	830.5	880.5	930.5	980.5	1030.5	1080.5	1130.5	1180.5	1230.5	1280.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.27	5.66	6.05	6.43	6.82	7.2	7.59	7.97	8.36	8.74	9.13	9.51	9.9	10.28	10.67	11.05	11.44	11.82	12.21	12.59	12.98

METSC-12 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

Specification

Model		METSC-12		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		≤250	≤500	≤1000
Maximum payload	Horizontal (kg)	≤50	≤30	≤18
	Vertical (kg)	≤12	≤8	≤4
Rated thrust (N)		565	283	141
Stroke / pitch (mm) (*2)		50~1050 / 50 Pitch		
Motor dimension (mm)		□42		
Ball screw spec (mm)		C7ø16		

*1.The maximum speed shown here is when software speed setting is 100%. When the stroke is over 750mm, the run-out of the ball screw will occur.

*2.We recommend to low down the working speed under this circumstances.

Order example of cylinder

METSC-12 — L05 — 100 — M — TC100 — 03 — A0001

Model | **Spec.** | **Special order no.**

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~1050 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

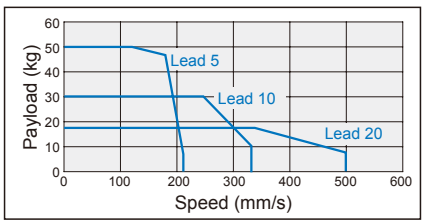
METSC-12 Performance charts

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

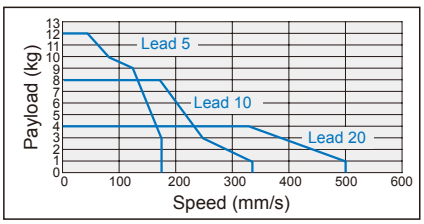
mindman

Speed-payload curve diagram

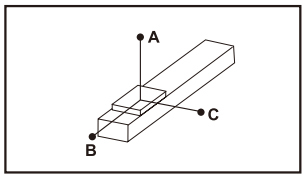
Horizontal



Vertical

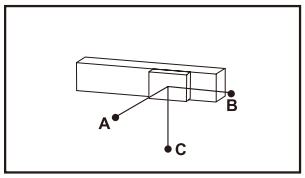


Allowable overhang



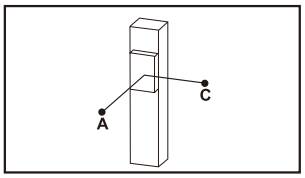
Unit: mm

Horizontal installation		A	B	C
Lead 5	30kg	1000	70	85
	40kg	800	45	50
	50kg	650	35	40
Lead 10	15kg	1050	110	70
	25kg	880	100	115
	30kg	550	60	70
Lead 20	8kg	1000	240	250
	12kg	650	150	160
	18kg	400	90	95



Unit: mm

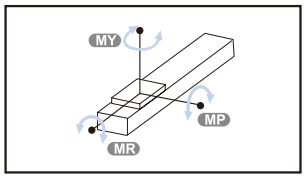
Wall installation		A	B	C
Lead 5	30kg	75	65	950
	40kg	50	40	700
	50kg	35	30	500
Lead 10	15kg	150	140	950
	20kg	110	95	800
	30kg	65	55	500
Lead 20	8kg	180	180	750
	12kg	145	140	570
	18kg	90	85	375



Unit: mm

Vertical installation		A	C
Lead 5	8kg	300	300
	10kg	260	260
	12kg	220	220
Lead 10	4kg	680	680
	6kg	450	450
	8kg	320	320
Lead 20	1kg	1000	1000
	2kg	800	800
	4kg	600	600

Static loading moment

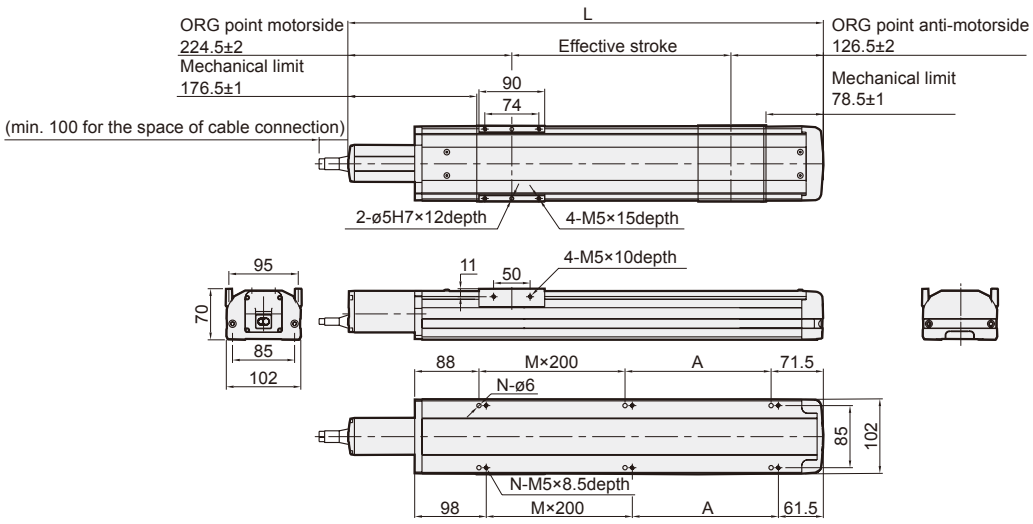


Unit: N.m

MY	150
MP	150
MR	130

M

Motor built-in

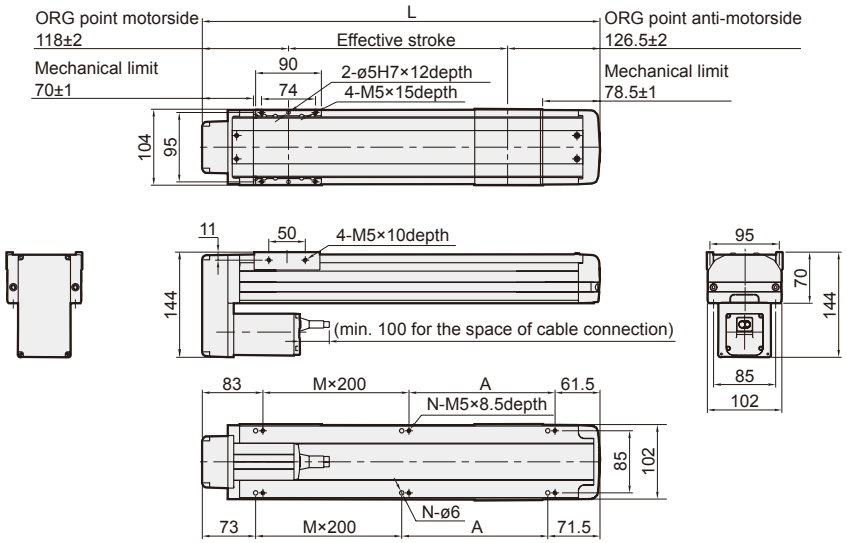


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	401	451	501	551	601	651	701	751	801	851	901	951	1001	1051	1101	1151	1201	1251	1301	1351	1401
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.48	5.87	6.26	6.64	7.03	7.42	7.81	8.2	8.58	8.97	9.36	9.75	10.14	10.52	10.91	11.3	11.69	12.08	12.46	12.85	13.24

BM

Motor on lower side



Unit: mm

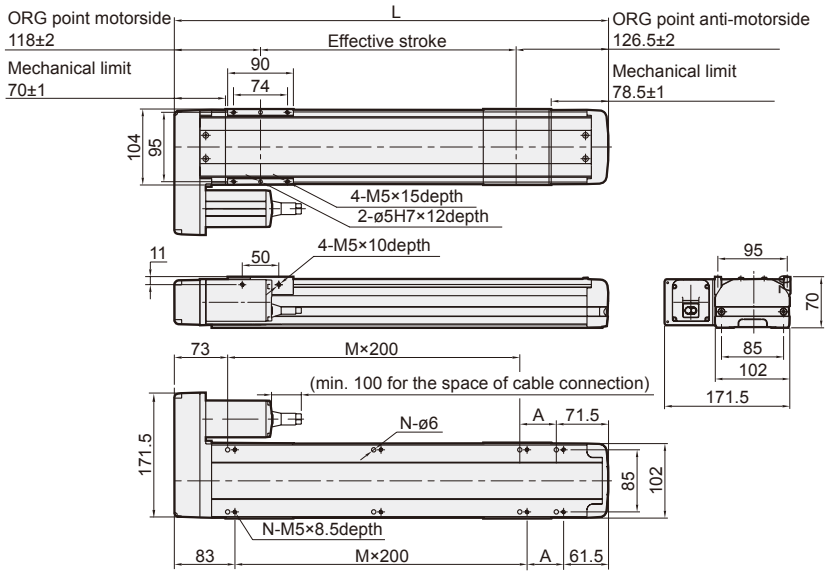
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	294.5	344.5	394.5	444.5	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5	1194.5	1244.5	1294.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.86	6.25	6.64	7.03	7.41	7.8	8.19	8.57	8.96	9.35	9.74	10.12	10.51	10.9	11.28	11.67	12.06	12.44	12.83	13.22	13.61

METSC-12 Dimensions

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

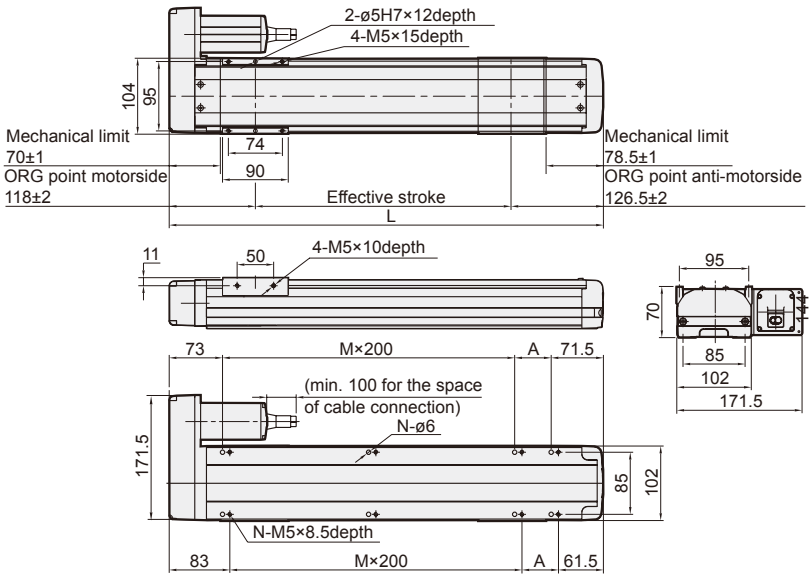
BL
Motor on left side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	294.5	344.5	394.5	444.5	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5	1194.5	1244.5	1294.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.86	6.25	6.64	7.03	7.41	7.8	8.19	8.57	8.96	9.35	9.74	10.12	10.51	10.9	11.28	11.67	12.06	12.44	12.83	13.22	13.61

BR
Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	294.5	344.5	394.5	444.5	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5	1194.5	1244.5	1294.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
KG	5.86	6.25	6.64	7.03	7.41	7.8	8.19	8.57	8.96	9.35	9.74	10.12	10.51	10.9	11.28	11.67	12.06	12.44	12.83	13.22	13.61

METSC-13 series

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

Specification

Model		METSC-13		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		≤250	≤500	≤1000
Maximum payload	Horizontal (kg)	≤70	≤47	≤24
	Vertical (kg)	≤12	≤8	≤5
Rated thrust (N)		565	283	141
Stroke / pitch (mm) (*2)		50~1050 / 50 Pitch		
Motor dimension (mm)		□42		
Ball screw spec (mm)		C7ø16		

*1.The maximum speed shown here is when software speed setting is 100%. When the stroke is over 750mm, the run-out of the ball screw will occur.

*2.We recommend to low down the working speed under this circumstances.

Order example of cylinder

METSC-13 — L05 — 100 — M — TC100 — 03 — A0001

Model | **Spec.** | **Special order no.**

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~1050 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

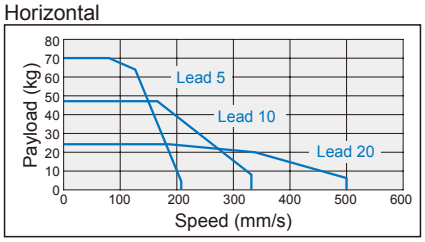
METSC-13 Performance charts

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

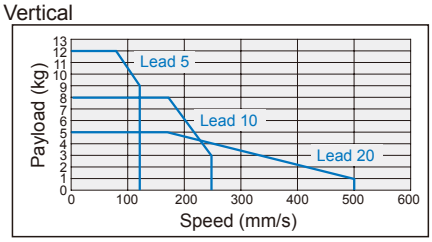
mindman

Speed-payload curve diagram

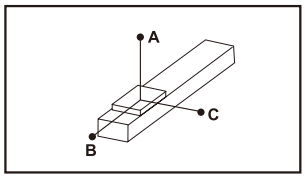
Horizontal



Vertical

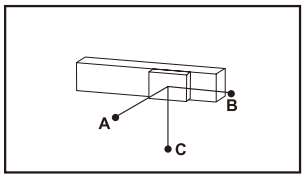


Allowable overhang



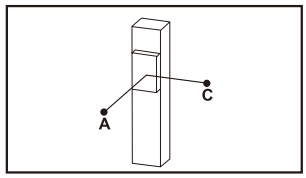
Unit: mm

Horizontal installation		A	B	C
Lead 5	40kg	1200	70	250
	55kg	800	45	165
	70kg	625	35	125
Lead 10	25kg	850	100	300
	35kg	620	70	225
	47kg	450	50	150
Lead 20	5kg	1200	290	680
	15kg	620	150	350
	24kg	390	90	215



Unit: mm

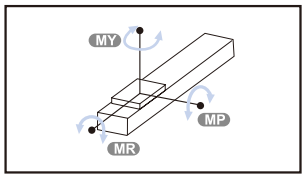
Wall installation		A	B	C
Lead 5	40kg	220	65	1050
	55kg	180	50	850
	70kg	130	35	650
Lead 10	25kg	335	105	850
	35kg	220	75	620
	47kg	160	50	450
Lead 20	5kg	800	350	1500
	15kg	350	150	620
	24kg	220	90	375



Unit: mm

Vertical installation		A	C
Lead 5	8kg	375	375
	10kg	300	300
	12kg	250	250
Lead 10	4kg	700	700
	6kg	450	450
	8kg	350	350
Lead 20	3kg	750	750
	4kg	550	550
	5kg	450	450

Static loading moment

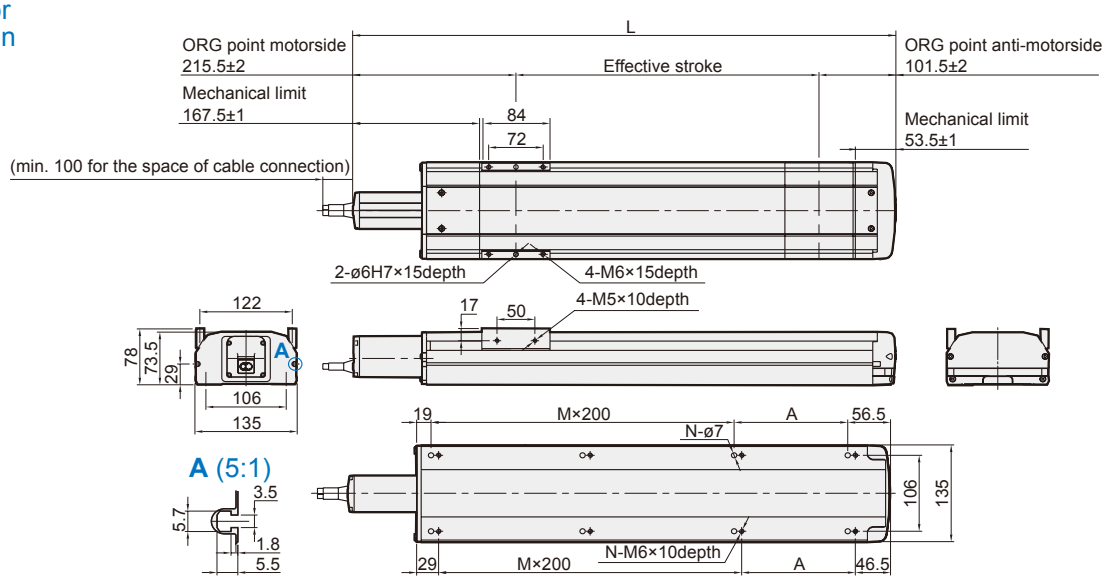


Unit: N.m

MY	174
MP	175
MR	153

M

Motor built-in

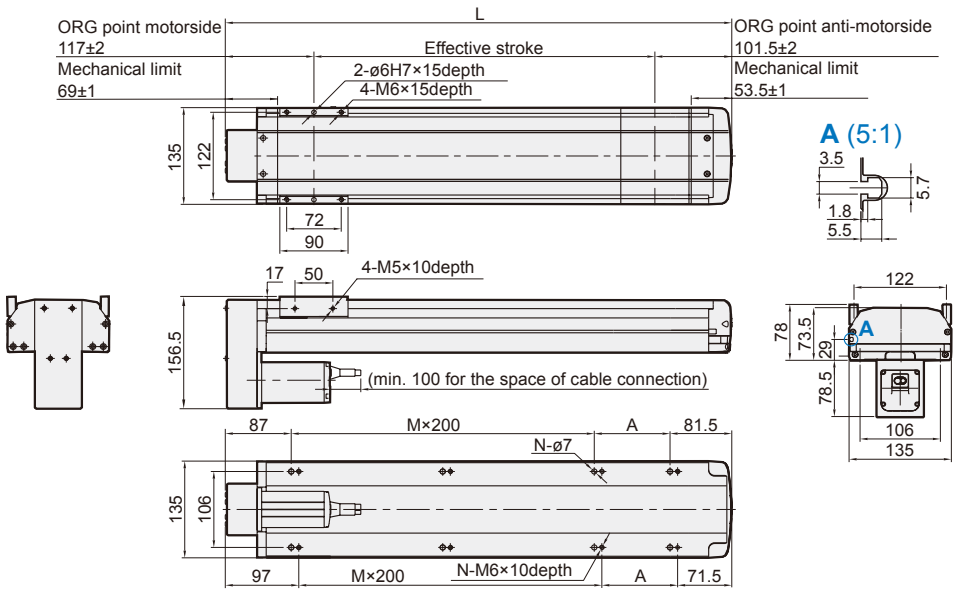


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	367	417	476	517	567	617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
KG	8.2	8.76	9.32	9.88	10.44	11	11.56	12.12	12.68	13.24	13.8	14.36	14.92	15.48	16.04	16.6	17.16	17.72	18.28	18.84	19.4

BM

Motor on lower side



Unit: mm

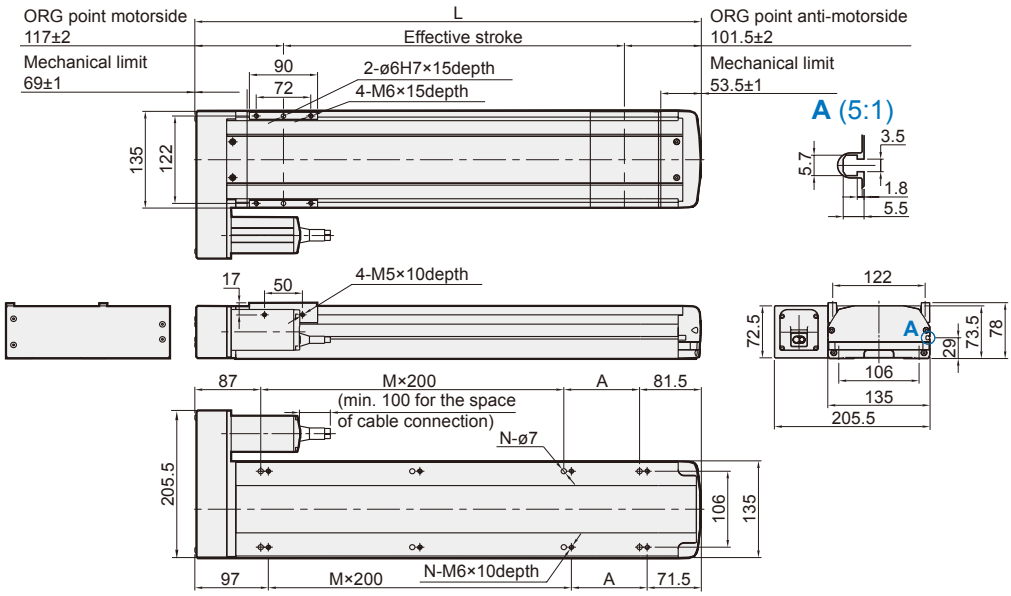
Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	268.5	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.74	9.3	9.86	10.42	10.98	11.54	12.1	12.66	13.22	13.78	14.34	14.9	15.46	16.02	16.58	17.14	17.7	18.26	18.82	19.38	19.94

METSC-13 Dimensions

SLIDER ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

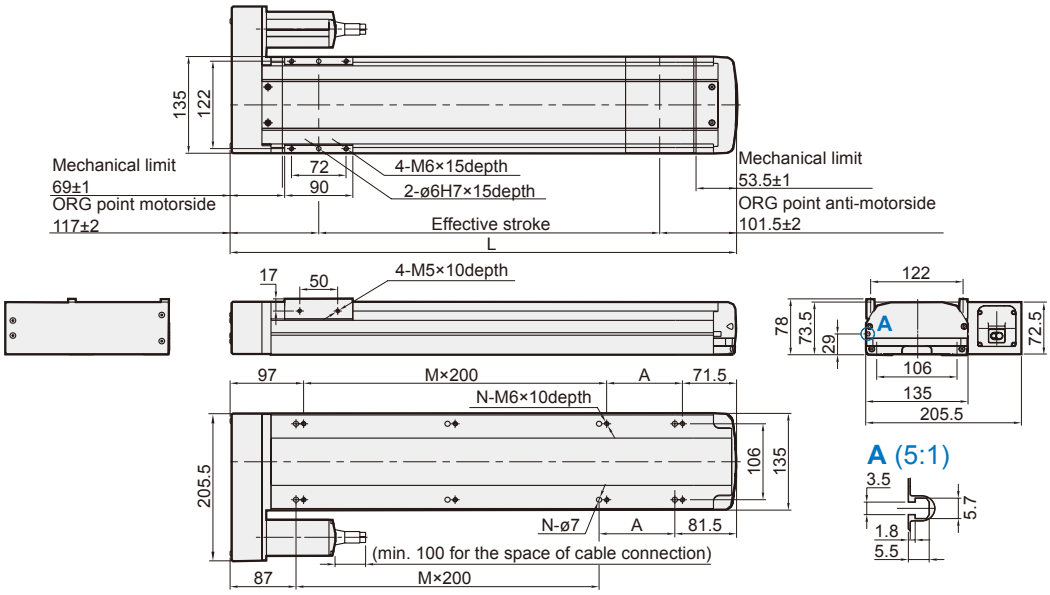
BL
Motor on left side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	268.5	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.74	9.3	9.86	10.42	10.98	11.54	12.1	12.66	13.22	13.78	14.34	14.9	15.46	16.02	16.58	17.14	17.7	18.26	18.82	19.38	19.94

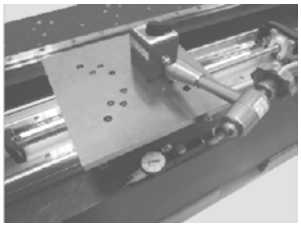
BR
Motor on right side



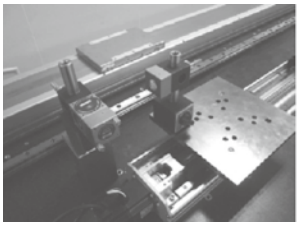
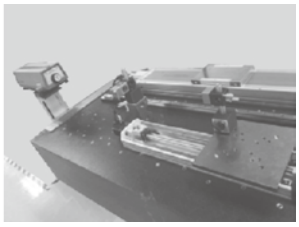
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	268.5	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
KG	8.74	9.3	9.86	10.42	10.98	11.54	12.1	12.66	13.22	13.78	14.34	14.9	15.46	16.02	16.58	17.14	17.7	18.26	18.82	19.38	19.94

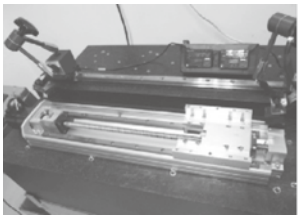
Measuring tools

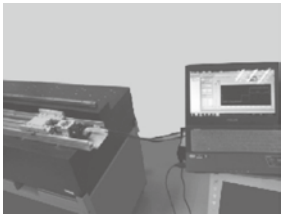
1. Parallelism testing / Height testing	
Measuring tools	Dial gauge and Dial indicator
Measuring methods	1. Fix the actuator on granite. 2. Fix the measuring tools on the actuator's slider. 3. As photo display. 4. Record it as a reference.

2. Absolute straightness accuracy testing	
Measuring tools	Laser interferometer detection
Measuring methods	1. Fix the actuator on granite. 2. Fix the measuring tools on the actuator's slider. 3. As photo display. 4. Print the test report as a recorder.




3. Absolute straightness accuracy testing	
Measuring tools	Laser position detection
Measuring methods	1. Fix the actuator on granite. 2. Use laser to align the slider's slide to the repeatability accuracy. 3. As photo display. 4. Record it as a reference.

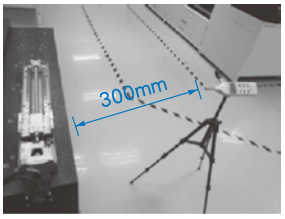


4. Power drive situation testing by motor electric current	
Measuring tools	Mitsubishi servo driver 100W, 200W, 400W
Measuring methods	1. Fix the actuator on granite. 2. Fix the measuring tools on the actuator's slider. 3. As photo display. 4. Record it as a reference.

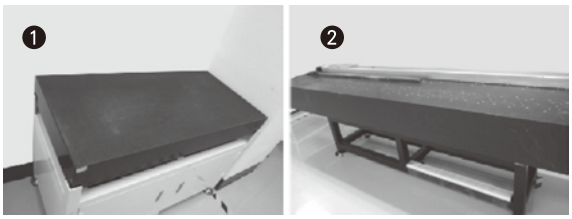
5. Smoothness testing	
Measuring tools	Pull tension gauge
Measuring methods	1. Fix the actuator on granite. 2. Push the slider using pull tension gauge. 3. As photo display. 4. Record it as a reference.

Measuring tools

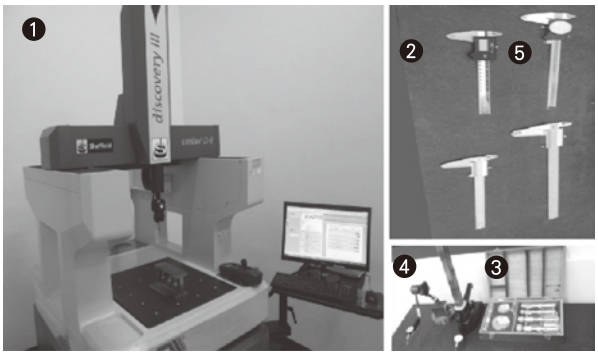
6.Belt tension testing	
Measuring tools	Pull tension gauge
Measuring methods	1. Fix the actuator on granite. 2. Use belt tension gauge to test the vibration of the belt. 3. As photo display. 4. Record it on shipping testing.



7.Decibel testing	
Measuring tools	Decibel meter
Measuring methods	1. Fix the actuator on granite. 2. Decibel meter put at the distance of 300mm. 3. Use motor to drive actuator in high speed. 4. As photo display. 5. Record it on shipping testing report.



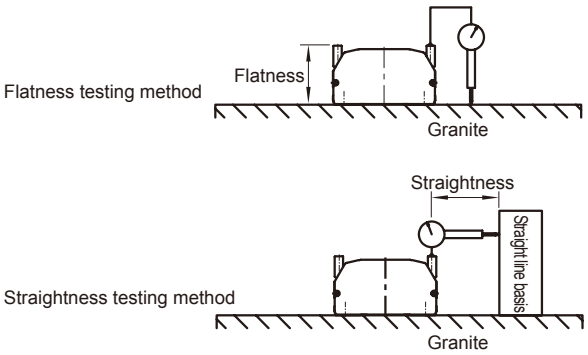
8.Measuring tool- Granite platform	
Granite specifications	1. Size 1295mm*600mm*140mm 2. Size 4020mm*800mm*300mm

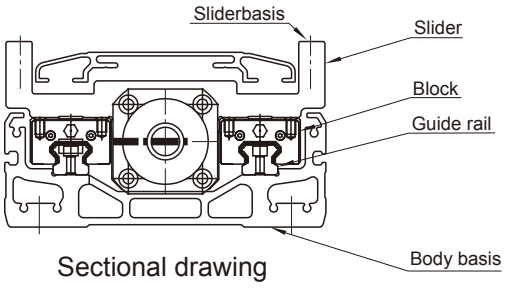


9.Material tools	
Measuring tools	1. 3D Inspection testing machine. 2. Electronic vernier caliper, vernier caliper. 3. Inside micrometer, outside micrometer. 4. Altimeter, vertical meter. 5. Electronic level meter. 6. Dial gauge, Dial indicator. 7. Steel tape, Steel ruler.
Measuring tools calibration standards	Block gauge, ring gauge (regularly qualified) QC Room 1. Control temperature and humidity to keep the stability of the measurement. 2. Measuring tools calibrate regularly.

Flatness and straightness standard

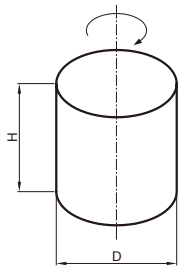
Flatness standard=The parallelism of body basis and slider basis is less then 0.05mm/M
Straightness standard=The parallelism of slider basis and straight line basis is less then 0.05mm/M





Equation of moment of inertia calculation

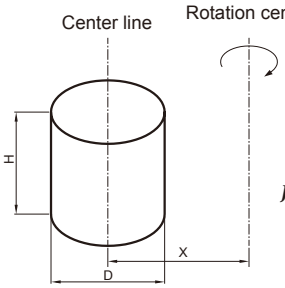
Usually the load is not simple form, and the calculation of the moment of inertia is not easy. As a method, load is replaced with several factors that resemble a simple form for which the moment of inertia can be calculated. The total of the moment of inertia for these factors is the obtained. The objects and equations often used for the calculation of the moment of inertia are shown below.



1.Moment of inertia for cylinder
The moment of inertia(J) for a cylinder having a rotation center such as shown below is given by

$$J=\frac{P\pi D^4h}{32\times980}=\frac{WD^2}{8g}\ (kgf\cdot cm\cdot sec^2)$$
$$=\frac{mD^2}{8}\ (Kgm^2)$$

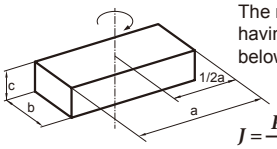
P = Density (kg/cm^3)
g = Gravitational acceleration (cm/sec^2)
W =Weight of cylinder (kgf)
m = Mass of cylinder (kg)



3.When the object's center line is offset from the rotation center
The moment of inertia(J) for a cylinder having a rotation center such as shown below is given by

$$J=\frac{P\pi D^4h}{32}+\frac{P\pi D^4h}{4}=\frac{WD^2}{8g}+\frac{WX^2}{G}\ (kgf\cdot cm\cdot sec^2)$$
$$=\frac{mD^2}{8}+mX^2(Kgm^2)$$

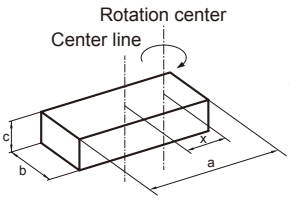
P = Density (kg/cm^3)
g = Gravitational acceleration (cm/sec^2)
W =Weight of cylinder (kgf)
m = Mass of cylinder (kg)



2.Moment of inertia for rectangular parallelepiped
The moment of inertia(J) for a cylinder having a rotation center such as shown below is given by

$$J=\frac{Pabc(a^2+b^2)}{12}=\frac{W(a^2+b^2)}{12g}\ (kgf\cdot cm\cdot sec^2)$$
$$=\frac{M(a^2+b^2)}{12}\ (Kgm^2)$$

P = Density (kg/cm^3)
g = Gravitational acceleration (cm/sec^2)
W =Weight of cylinder (kgf)
m = Mass of cylinder (kg)

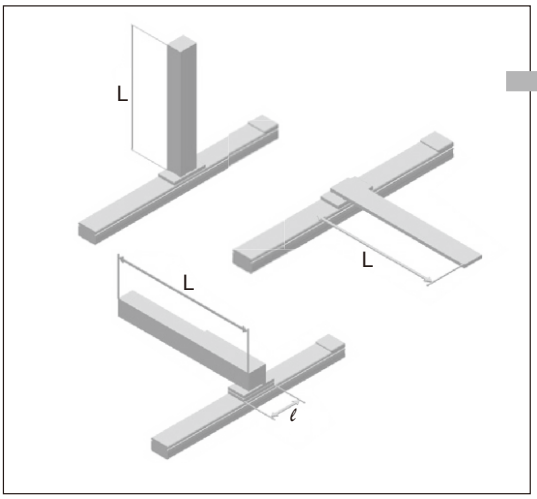


$$J=\frac{Pabc(a^2+b^2)}{12}+\frac{PabcX^2}{G}$$
$$=\frac{W(a^2+b^2)}{12g}+\frac{WX^2}{G}\ (kgf\cdot cm\cdot sec^2)$$
$$=\frac{M(a^2+b^2)}{12}+mX^2(Kgm^2)$$

W =Weight of prism (kgf)
m = Mass of prism (kg)

Overhang load length

An overhang load length is specified for a slider-type actuator to indicate the length of overhang (offset) from the actuator. When the length of an object mounted to the slider actuator exceeds this length, it will generate vibration and increase the setting time. So, pay attention to the allowable overhang length as well as the allowable dynamic moment.



The allowable overhang load length is determined by the slider length.

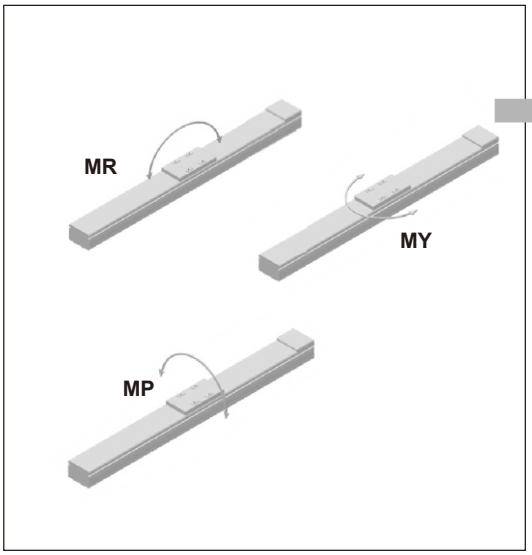
An overhang that exceeds the allowable overhang length will generate vibration and increase settling time.

L/ℓ =5 Within
* Between 3 to 4 for acamera equipped measuring machine.

- For example
L/ℓ =1.2 Mechanical machine
L/ℓ =3 Mechanical machine
L/ℓ =5 Robot

Allowable dynamic moment

The allowable dynamic moment is the maximum offset load exerted on the slider, calculated from the guide life. The direction in which force is exerted on the guide is categorized into 3 directions-MP(pitch), MY(yaw), MR(roll)-the tolerance for each of which are set for each actuator. Applying a moment exceeding the allowable value will reduce the service life of the actuator. Use an auxiliary guide when working within or in excess of these tolerances.



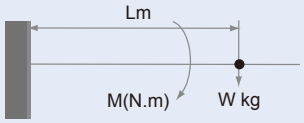
The allowable dynamic moment is calculated from the service life of the guide.

Over the moment would reduce the life of actuator.

*Moment is based on the following basis

M(N.m)=W(kg)×L(m)×9.8

W(kg)=Load
L(m)=Distance from work point to the center of gravity of payload.



Lead accuracy

PMI's precision ground ball screws are controlled in accordance with JIS B 1192.
The permissible values and each part of definitions are shown below.

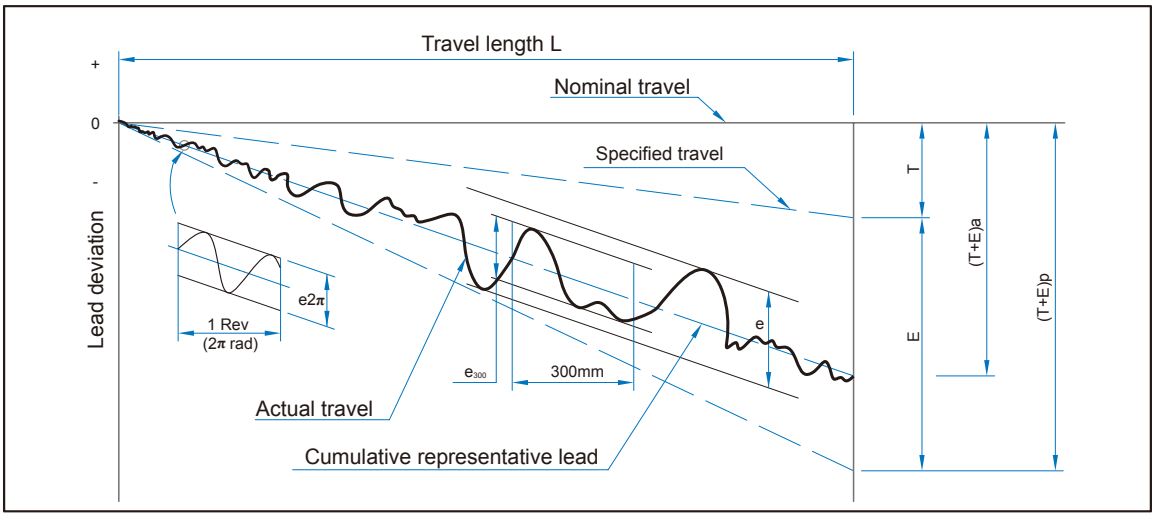


Fig.1 Technical terms concerning the lead

■ Table 1 Terms

T+E	Cumulative representative lead	Cumulative representative lead. A straight line representing the tendency of the cumulative actual lead. This is obtained by least square method and measured by laser system.
P		Permissible value.
a		Actual value.
T	Specified travel specify the target value	Specified travel. This value is determined by customer and maker as it depends on different application requirements.
E	Cumulative representative lead error	Accumulated reference lead deviation. This is allowable deviation of specified travel. It is decided by both of the accuracy grade and effective thread length.
e	Change	Total relative lead variation maximum width of variation over the travel length.
e_{300}		Lead deviation in random 300 mm.
$e_{2\pi}$		Lead deviation in random 1 revolution 2π rad.

■ Table 2 Accumulated reference lead deviation (±E) and total relative variation (e)

Effective thread length(mm)		Grade	C0		C1		C2		C3		C4		C5		C6	C7	C8
		Over up to	E	e	E	e	E	e	E	e	E	e	E	e	±0.025	±0.050	±0.120
	315		4	3.5	6	5	5	7	12	8	12	12	23	18	/	/	/
315	400		5	3.5	7	5	7	7	13	10	14	12	25	20	300mm	300mm	300mm
400	500		6	4	8	5	8	7	15	10	16	12	27	20			
500	630		6	4	9	6	9	7	16	12	18	14	30	23			
630	800		7	5	10	7	10	7	18	13	20	14	35	25			
800	1000		8	6	11	8	11	8	21	15	22	16	40	27			
1000	1250		9	6	13	9	13	9	24	16	25	18	46	30			
1250	1600		11	7	15	10	15	10	29	18	29	20	54	35			
1600	2000				18	11	18	11	35	21	35	22	65	40			
2000	2500				22	12	21	13	41	24	41	25	77	46			
2500	3150				26	15	25	15	50	29	50	29	93	54			
3150	4000				32	18	30	18	62	35	62	35	115	65			
4000	5000						36	21	76	41	76	41	140	77			
5000	6300								85	50	85	50	170	96			
6300	8000								106	62	106	62	213	115			
8000											132	75	265	140			

■ Table 3 Accuracy grade

Variation in random 300mm (e_{300}) and wobble ($e_{2\pi}$)

α_{522}

Grade	C0	C1	C2	C3	C4	C5	C6	C7	C10
JIS	3.5	5		8		18		50	210
PMI	3.5	5	7	8	12	18	25	50	210

$\alpha_{4\pi}$

Grade	C0	C1	C2	C3	C4	C5
JIS	3	4		6		8
PMI	3	4	4	6	8	8

MEQYC-50 series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

Specification

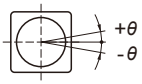
Model	MEQYC-50	
Repeatability (mm)	±0.01	
Ball screw lead (mm)	5	10
Maximum speed (mm/s) *1	250	500
Maximum payload Horizontal (kg)	30	15
Maximum payload Vertical (kg)	15	12
Rated thrust (N)	565	283
Stroke / pitch (mm) *2	50~300 / 50 Pitch	
Motor dimension (mm)	□42	
Ball screw spec (mm)	C7ø12	
Anti-rotating accuracy (θ)*3	±1°	

*1.The maximum speed shown here is when software speed setting is 100%.

*2.When the stroke is over 200mm, the run-out of the ball screw will occur. We recommend to low down the working speed under this circumstances.

*3.Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod. This may cause deformation of the anti-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Anti-rotating accuracy of rod



Order example of cylinder

MEQYC-50 — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm

Stroke

50~300 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BW	On upper side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

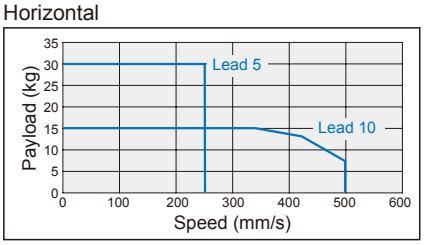
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

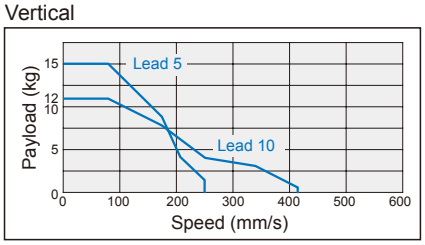
* Standard: 3 m

Speed-payload curve diagram

Horizontal



Vertical

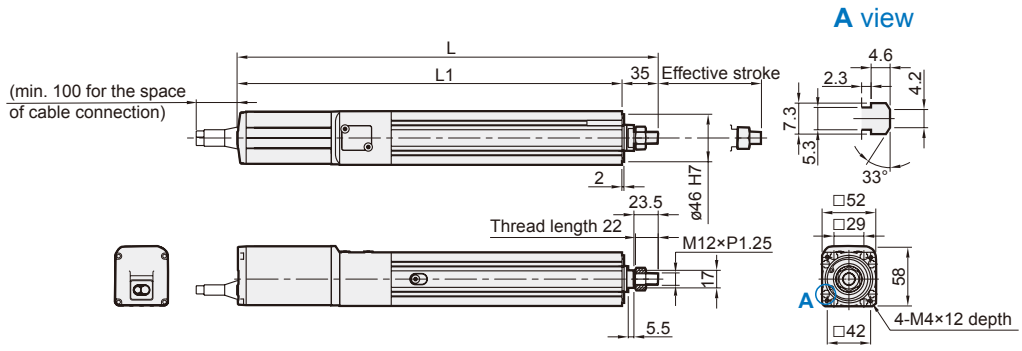


MEQYC-50 Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

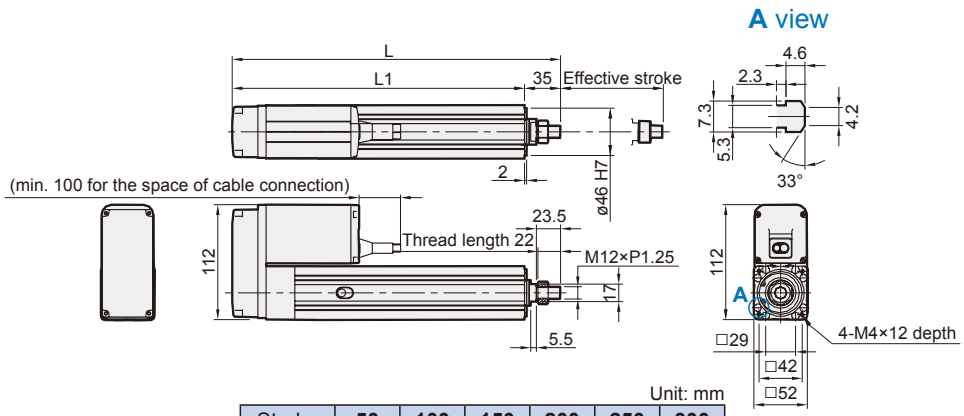
M
Motor built-in



Unit: mm

Stroke	50	100	150	200	250	300
L	358	408	458	508	558	608
L1	323	373	423	473	523	573
KG	2.62	2.88	3.14	3.4	3.67	3.84

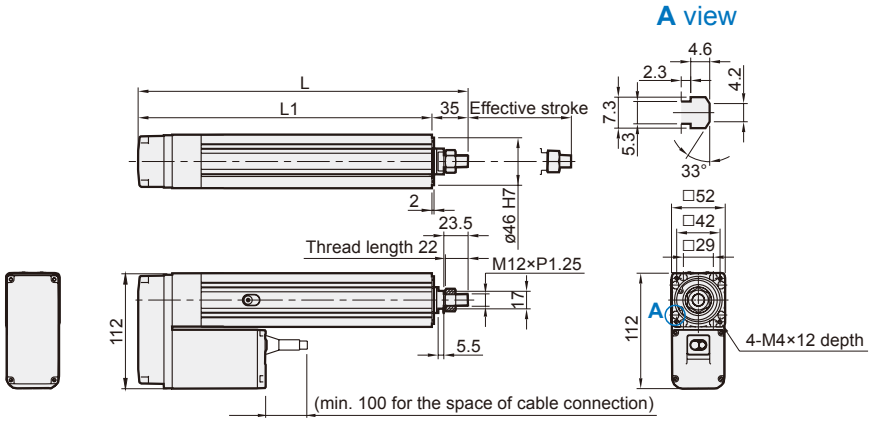
BW
Motor on upper side



Unit: mm

Stroke	50	100	150	200	250	300
L	260	310	360	410	460	510
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

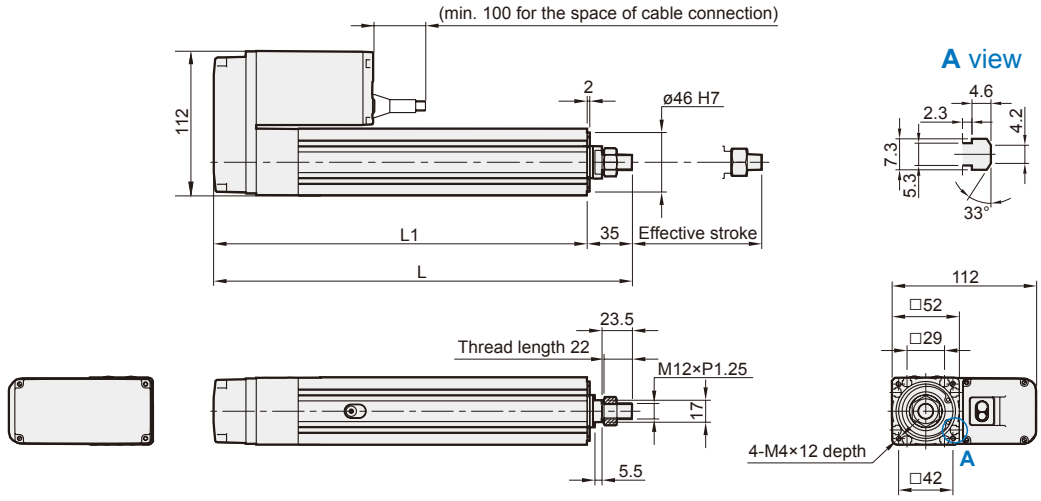
BM
Motor on lower side



Unit: mm

Stroke	50	100	150	200	250	300
L	260	310	360	410	460	510
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

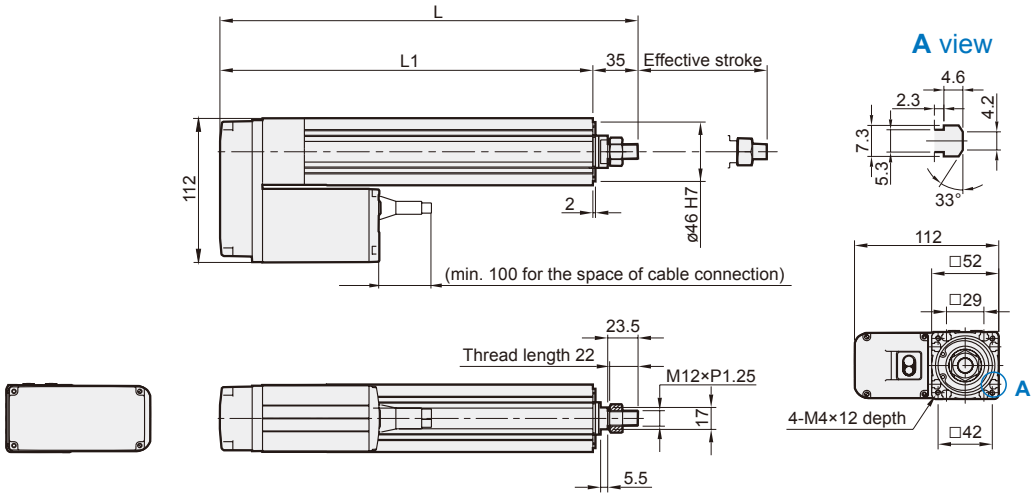
BR
Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300
L	260	310	360	410	460	510
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

BL
Motor on left side



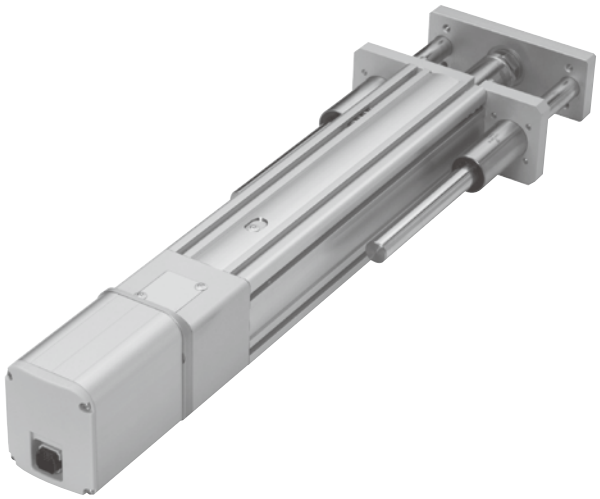
Unit: mm

Stroke	50	100	150	200	250	300
L	260	310	360	410	460	510
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

MEQYC-50D series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

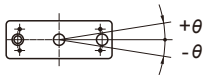


Specification

Model	MEQYC-50D	
Repeatability (mm)	±0.01	
Ball screw lead (mm)	5	10
Maximum speed (mm/s) (*1)	250	500
Maximum payload Horizontal (kg)	30	15
Maximum payload Vertical (kg)	15	12
Rated thrust (N)	565	283
Stroke / pitch (mm) (*2)	50~300 / 50 Pitch	
Motor dimension (mm)	□42	
Ball screw spec (mm)	C7ø12	
Anti-rotating accuracy (θ) (*3)	±0.05°	

*1.The maximum speed shown here is when software speed setting is 100%.
*2.When the stroke is over 200mm, the run-out of the ball screw will occur.
We recommend to low down the working speed under this circumstances.

*3. Anti-rotating accuracy of plate



Order example of cylinder

MEQYC-50D — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm

Stroke

50~300 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BW	On upper side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

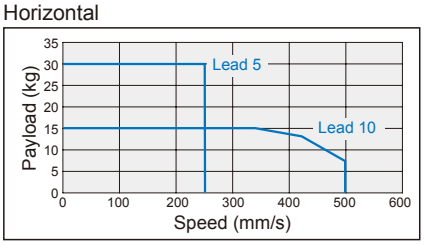
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

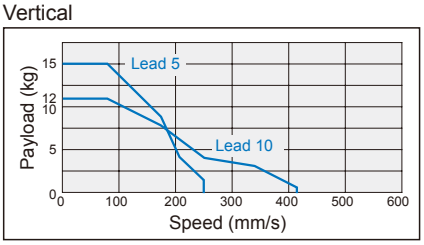
* Standard: 3 m

Speed-payload curve diagram

Horizontal

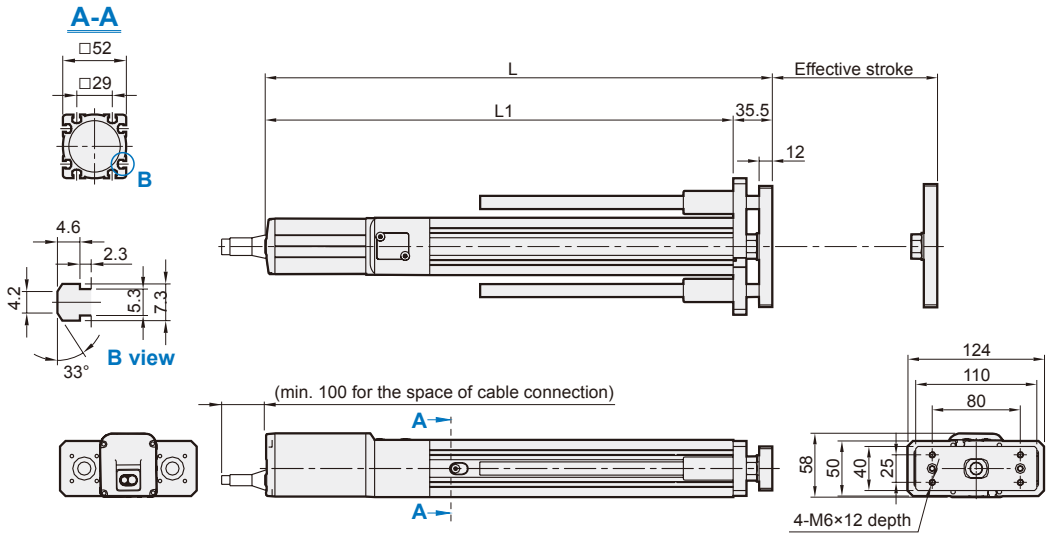


Vertical



M

Motor built-in

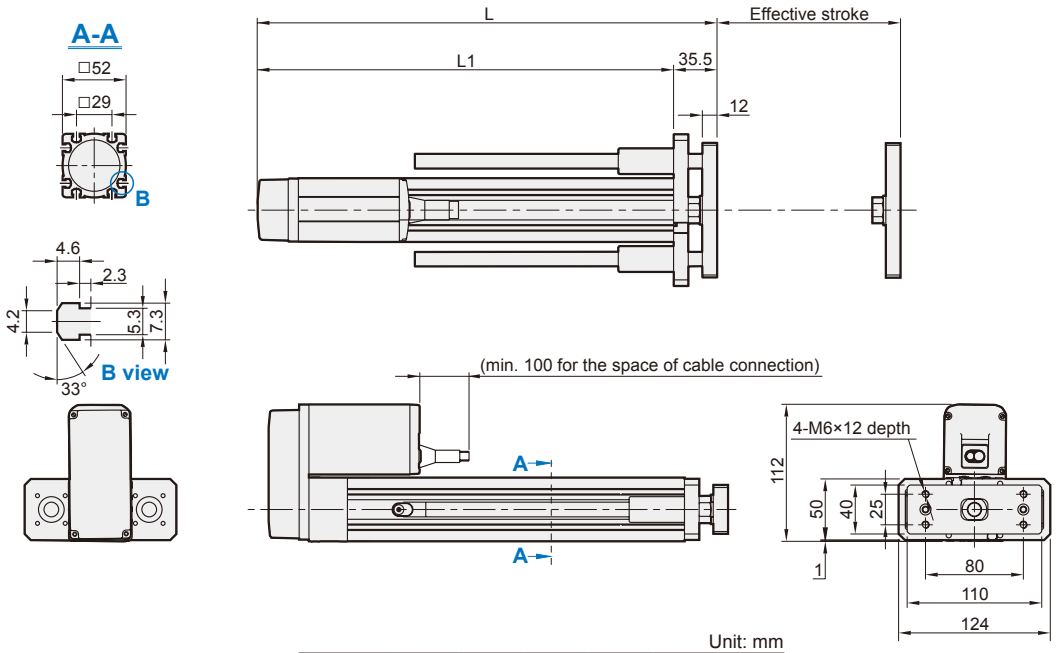


Unit: mm

Stroke	50	100	150	200	250	300
L	358.5	408.5	458.5	508.5	558.5	608.5
L1	323	373	423	473	523	573
KG	3.43	3.68	3.94	4.2	4.47	4.64

BW

Motor on upper side



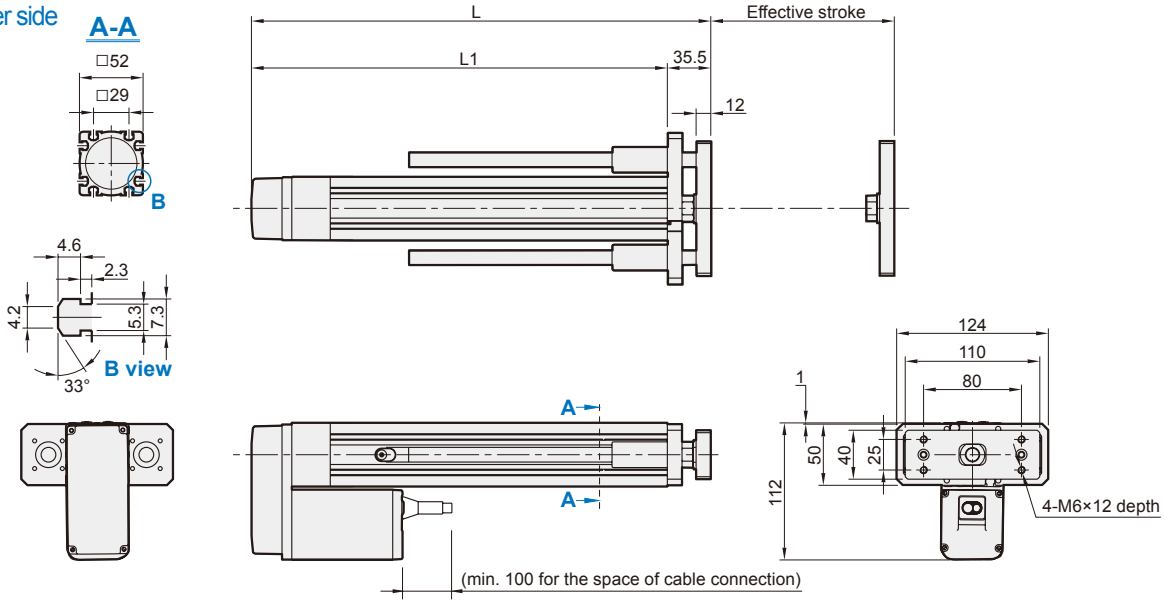
Unit: mm

Stroke	50	100	150	200	250	300
L	260.5	310.5	360.5	410.5	460.5	510.5
L1	225	275	325	375	425	475
KG	3.92	4.18	4.44	4.7	4.97	5.14

MEQYC-50D Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

BM
Motor on lower side

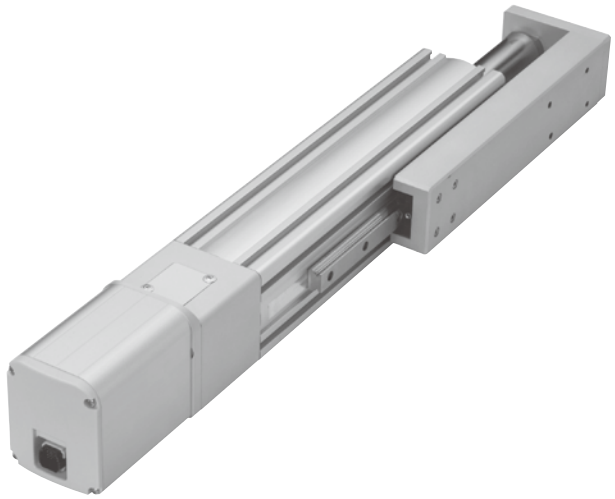


Unit: mm

Stroke	50	100	150	200	250	300
L	260.5	310.5	360.5	410.5	460.5	510.5
L1	225	275	325	375	425	475
KG	3.92	4.18	4.44	4.7	4.97	5.14

MEQYC-50L series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

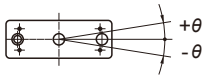


Specification

Model		MEQYC-50L	
Repeatability (mm)		±0.01	
Ball screw lead (mm)		5	10
Maximum speed (mm/s) (*1)		250	500
Maximum payload	Horizontal (kg)	30	15
	Vertical (kg)	15	12
Rated thrust (N)		565	283
Stroke / pitch (mm) (*2)		50~300 / 50 Pitch	
Motor dimension (mm)		□42	
Ball screw spec (mm)		C7ø12	
Anti-rotating accuracy (θ) (*3)		±0.05°	

*1.The maximum speed shown here is when software speed setting is 100%.
*2.When the stroke is over 200mm, the run-out of the ball screw will occur.
We recommend to low down the working speed under this circumstances.

*3. Anti-rotating accuracy of plate



Order example of cylinder

MEQYC-50L — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm

Stroke

50~300 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

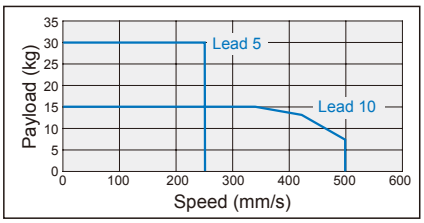
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

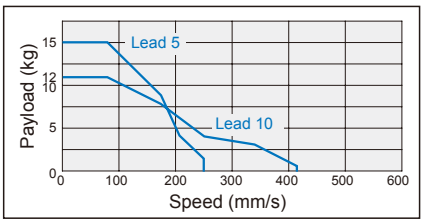
* Standard: 3 m

Speed-payload curve diagram

Horizontal



Vertical



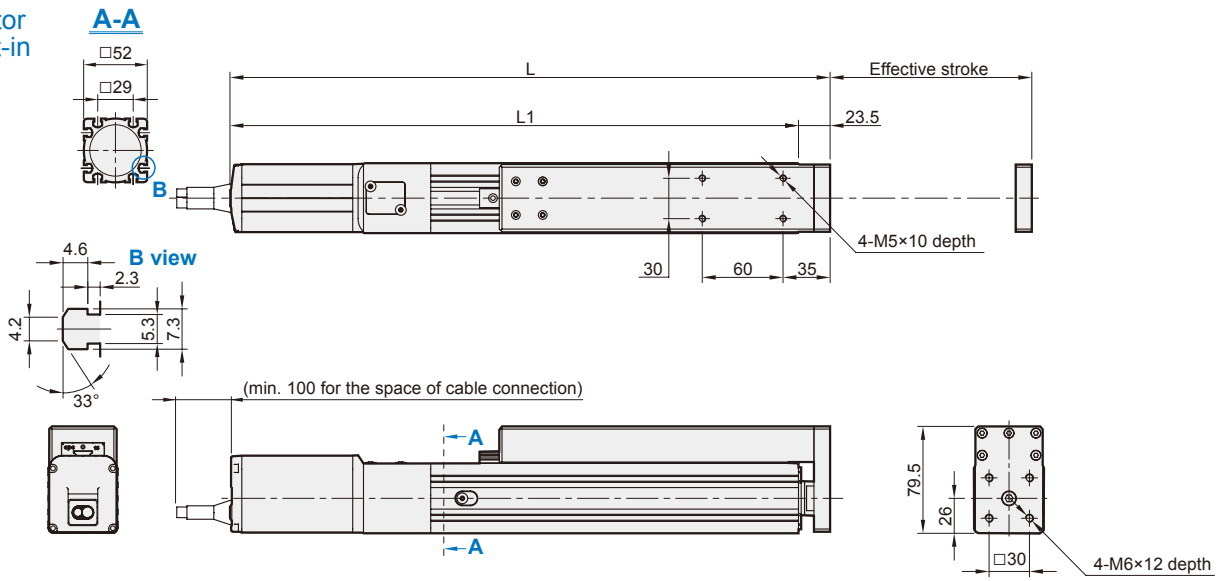
MEQYC-50L Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

M

Motor built-in

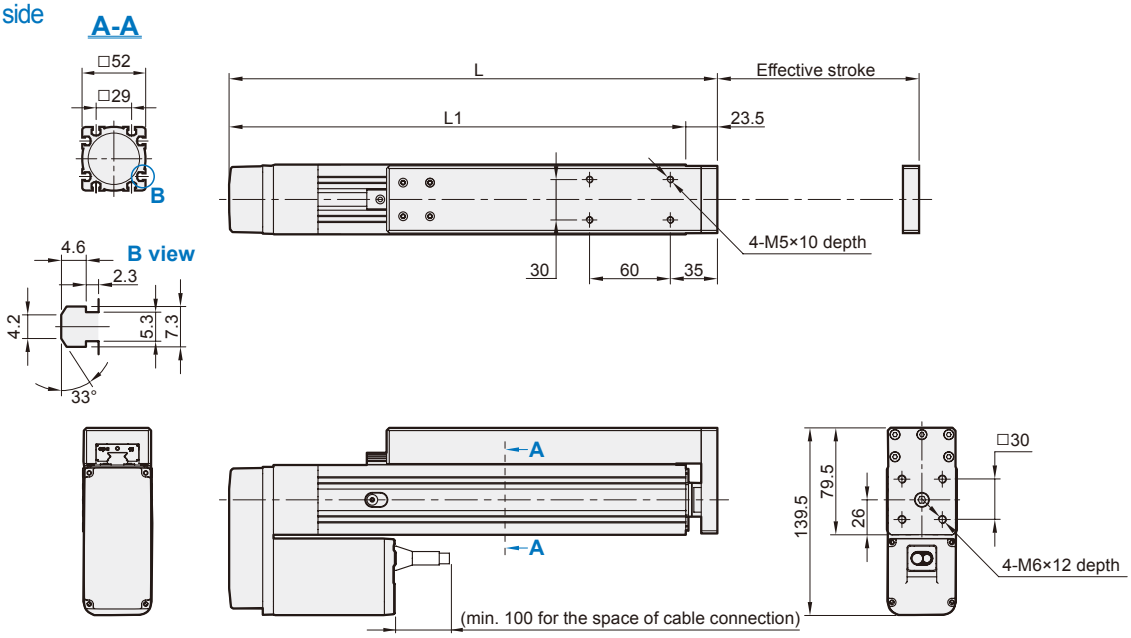


Unit: mm

Stroke	50	100	150	200	250	300
L	346.5	396.5	446.5	496.5	546.5	596.5
L1	323	373	423	473	523	573
KG	3.12	3.38	3.64	3.9	4.17	4.34

BM

Motor on lower side

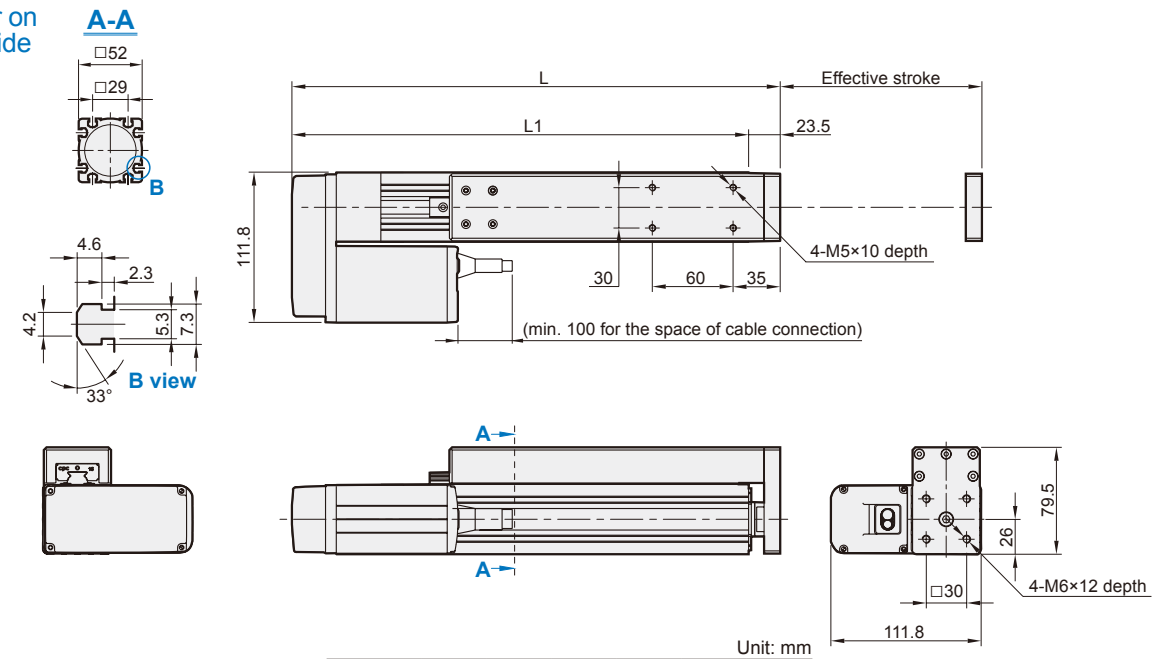


Unit: mm

Stroke	50	100	150	200	250	300
L	248.5	298.5	348.5	398.5	448.5	498.5
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

BL

Motor on left side

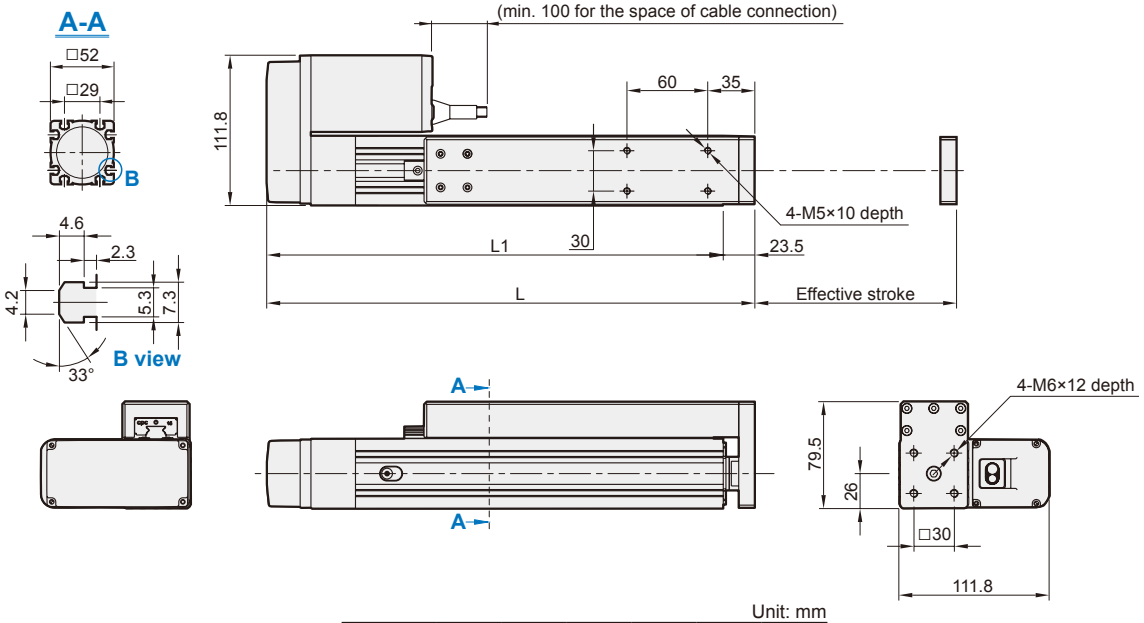


Unit: mm

Stroke	50	100	150	200	250	300
L	248.5	298.5	348.5	398.5	448.5	498.5
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

BR

Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300
L	248.5	298.5	348.5	398.5	448.5	498.5
L1	225	275	325	375	425	475
KG	3.62	3.88	4.14	4.4	4.67	4.84

MEQYC-65 series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

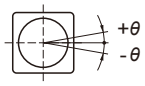
Specification

Model		MEQYC-65		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		250	500	1000
Maximum payload	Horizontal (kg)	110	88	40
	Vertical (kg)	30	20	10
Rated thrust (N)		791	395	197
Stroke / pitch (mm) (*2)		50~500 / 50 Pitch		
Motor dimension (mm)		□56		
Ball screw spec (mm)		C7ø16		
Anti-rotating accuracy (θ) (*3)		±1°		

*1.The maximum speed shown here is when software speed setting is 100%.
*2.When the stroke is over 300mm, the run-out of the ball screw will occur. We recommend to low down the working speed under this circumstances.

*3.Avoid using the electric actuator in such a way that rotational torque would be applied to the piston rod. This may cause deformation of the anti-rotating guide, abnormal responses of the auto switch, play in the internal guide or an increase in the sliding resistance.

Anti-rotating accuracy of rod



Order example of cylinder

MEQYC-65 — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~500 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BW	On upper side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

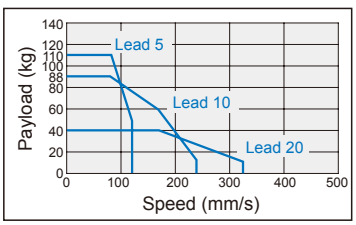
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

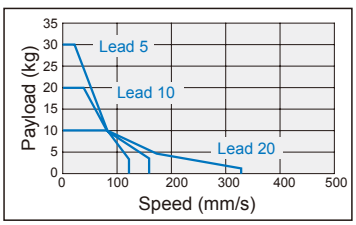
* Standard: 3 m

Speed-payload curve diagram

Horizontal

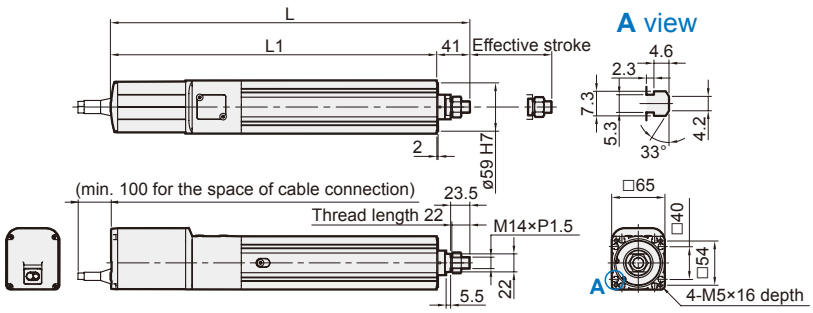


Vertical



M

Motor built-in

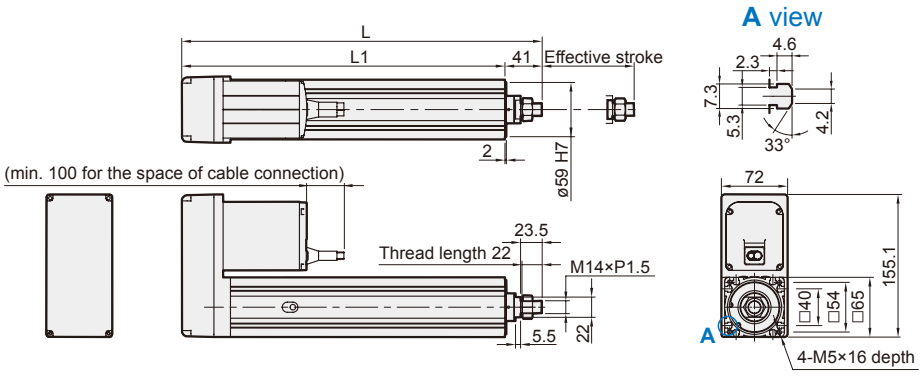


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	389	439	489	539	589	639	689	739	789	839
L1	348	398	448	498	548	598	648	698	748	798
KG	4	4.26	4.52	4.78	5.03	5.29	5.55	5.81	6.07	6.32

BW

Motor on upper side

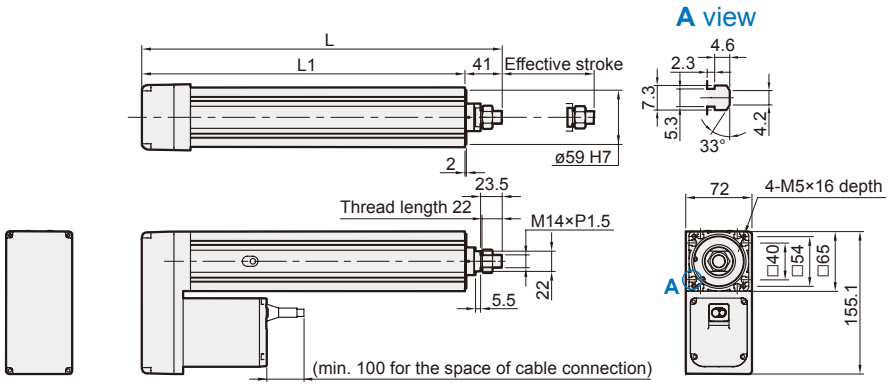


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	282	332	382	432	482	532	582	632	682	732
L1	241	291	341	391	441	491	541	591	641	691
KG	5	5.26	5.52	5.78	6.03	6.29	6.55	6.81	7.07	7.32

BM

Motor on lower side



Unit: mm

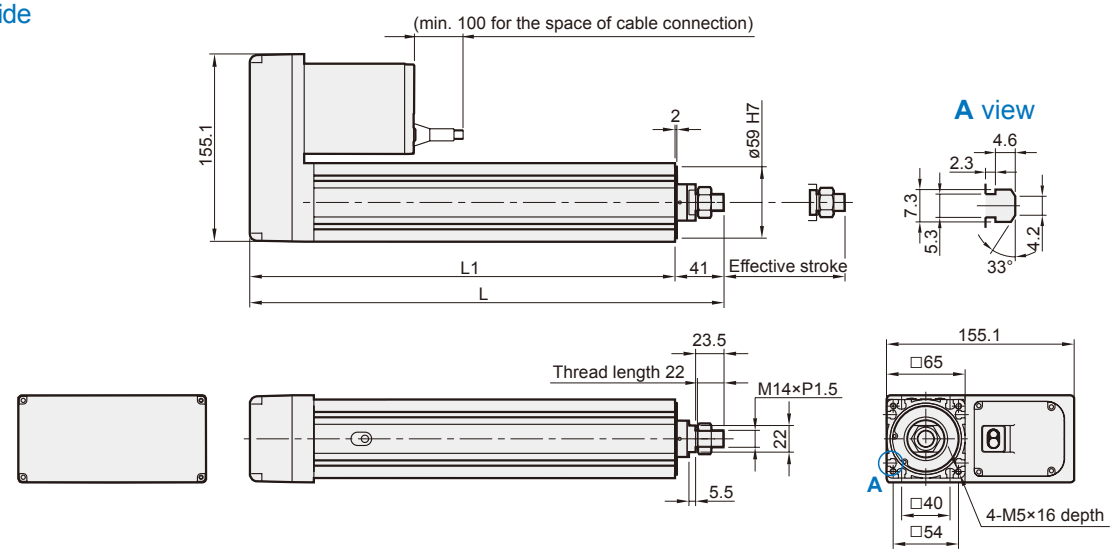
Stroke	50	100	150	200	250	300	350	400	450	500
L	282	332	382	432	482	532	582	632	682	732
L1	241	291	341	391	441	491	541	591	641	691
KG	5	5.26	5.52	5.78	6.03	6.29	6.55	6.81	7.07	7.32

MEQYC-65 Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

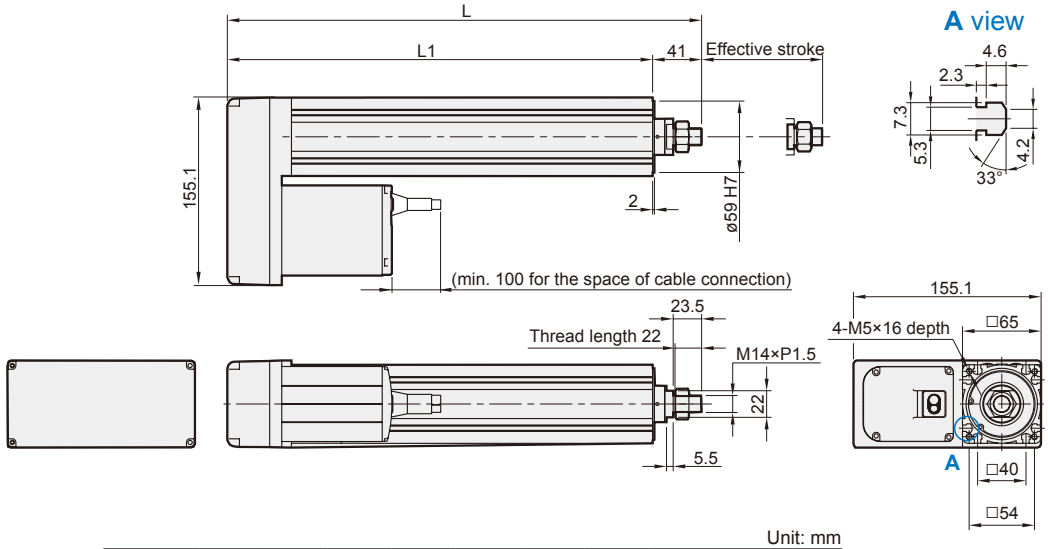
BR
Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	282	332	382	432	482	532	582	632	682	732
L1	241	291	341	391	441	491	541	591	641	691
KG	5	5.26	5.52	5.78	6.03	6.29	6.55	6.81	7.07	7.32

BL
Motor on left side

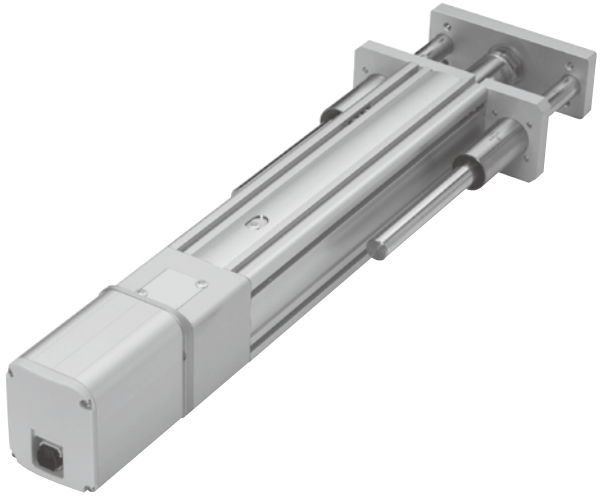


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	282	332	382	432	482	532	582	632	682	732
L1	241	291	341	391	441	491	541	591	641	691
KG	5	5.26	5.52	5.78	6.03	6.29	6.55	6.81	7.07	7.32

MEQYC-65D series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

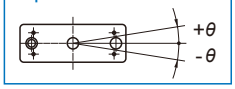


Specification

Model		MEQYC-65D		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		250	500	1000
Maximum payload	Horizontal (kg)	110	88	40
	Vertical (kg)	30	20	10
Rated thrust (N)		791	395	197
Stroke / pitch (mm) (*2)		50~500 / 50 Pitch		
Motor dimension (mm)		□56		
Ball screw spec (mm)		C7ø16		
Anti-rotating accuracy (θ) (*3)		±0.05°		

*1.The maximum speed shown here is when software speed setting is 100%.
*2.When the stroke is over 300mm, the run-out of the ball screw will occur.
We recommend to low down the working speed under this circumstances.

*3. Anti-rotating accuracy of plate



Order example of cylinder

MEQYC-65D — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~500 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BW	On upper side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

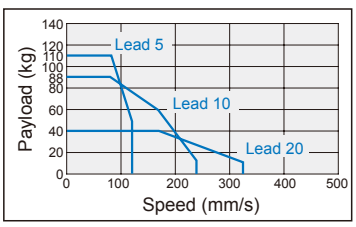
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

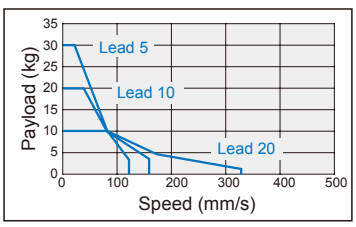
* Standard: 3 m

Speed-payload curve diagram

Horizontal



Vertical

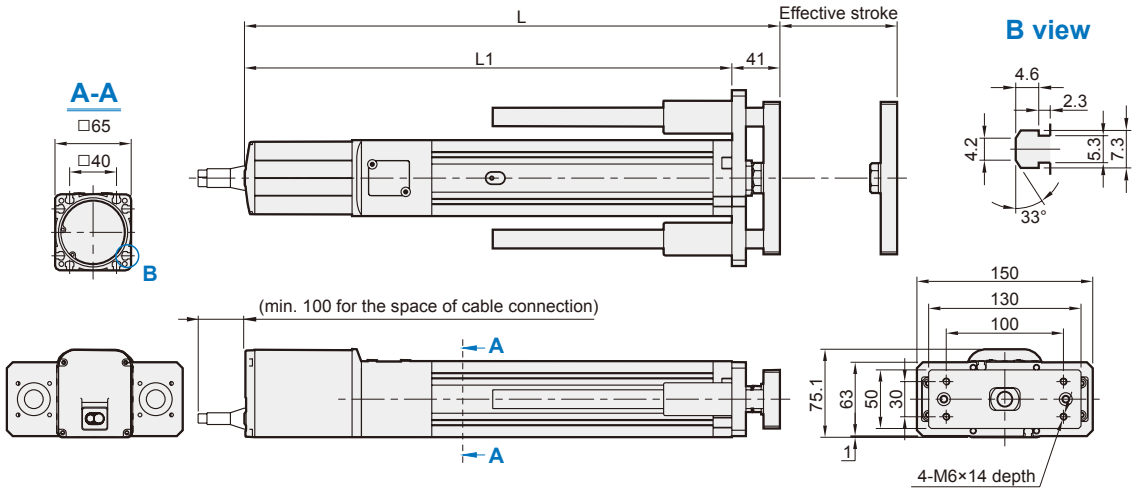


MEQYC-65D Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

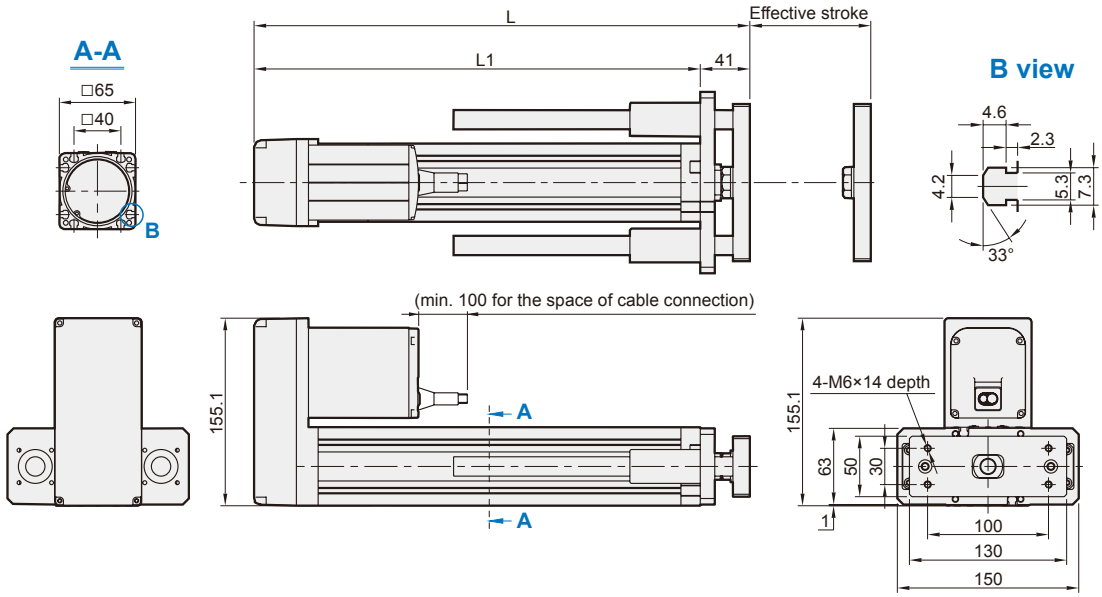
M
Motor built-in



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	405	455	505	555	605	655	705	755	805	855
L1	364	414	464	514	564	614	664	714	764	814
KG	6	6.26	6.52	6.78	7.03	7.29	7.55	7.81	8.07	8.32

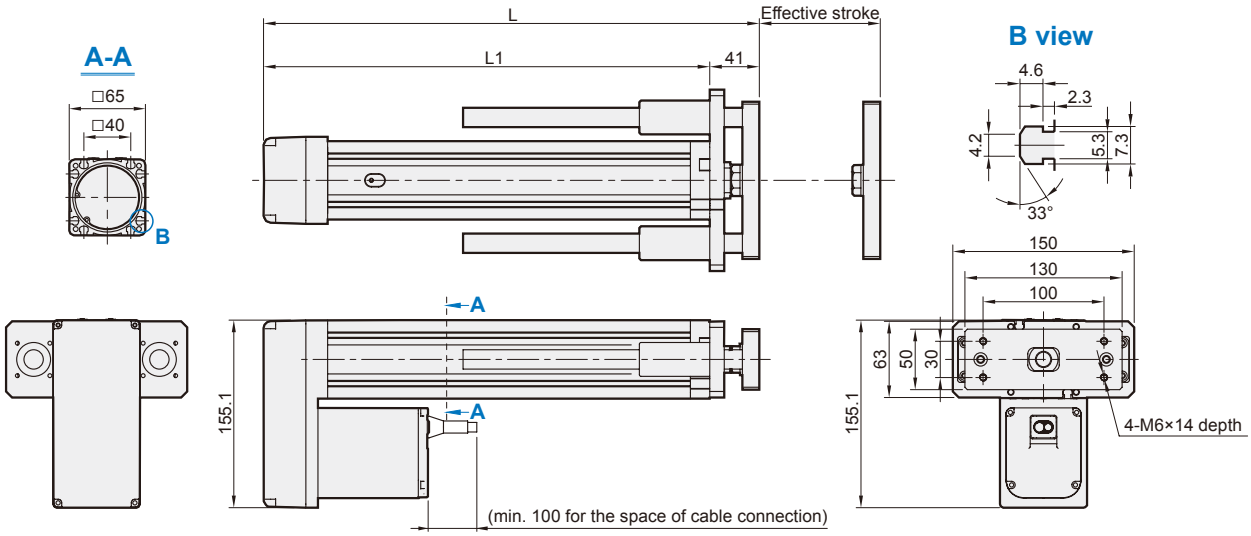
BW
Motor on upper side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	298	348	398	448	498	548	598	648	698	748
L1	257	307	357	407	457	507	557	607	657	707
KG	6.5	6.76	7.02	7.28	7.53	7.79	8.05	8.31	8.57	8.82

BM
Motor on lower side



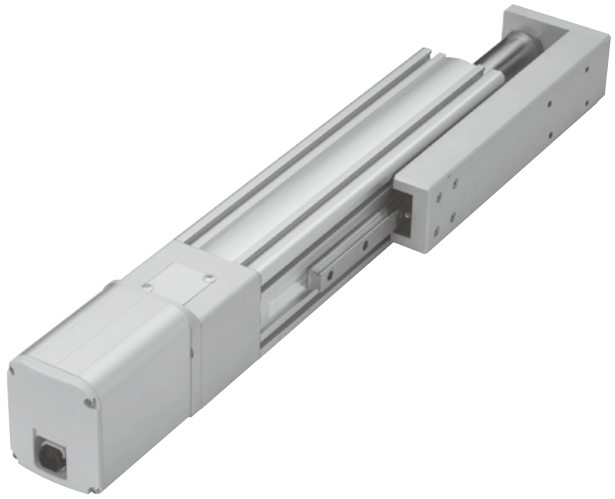
Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	298	348	398	448	498	548	598	648	698	748
L1	257	307	357	407	457	507	557	607	657	707
KG	6.5	6.76	7.02	7.28	7.53	7.79	8.05	8.31	8.57	8.82

MEQYC-65L series

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

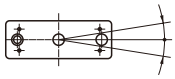


Specification

Model		MEQYC-65L		
Repeatability (mm)		±0.01		
Ball screw lead (mm)		5	10	20
Maximum speed (mm/s) (*1)		250	500	1000
Maximum payload	Horizontal (kg)	110	88	40
	Vertical (kg)	30	20	10
Rated thrust (N)		791	395	197
Stroke / pitch (mm) (*2)		50~500 / 50 Pitch		
Motor dimension (mm)		□56		
Ball screw spec (mm)		C7ø16		
Anti-rotating accuracy (θ) (*3)		±0.05°		

*1.The maximum speed shown here is when software speed setting is 100%.
*2.When the stroke is over 300mm, the run-out of the ball screw will occur.
We recommend to low down the working speed under this circumstances.

*3. Anti-rotating accuracy of plate



Order example of cylinder

MEQYC-65L — L05 — 100 — M — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

05	5 mm
10	10 mm
20	20 mm

Stroke

50~500 mm
50 mm pitch

Motor position

M	Built-in
BM	On lower side
BR	On right side
BL	On left side

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

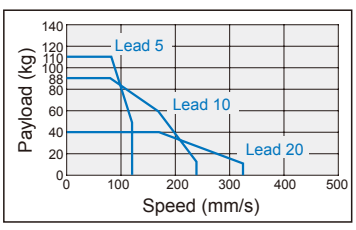
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

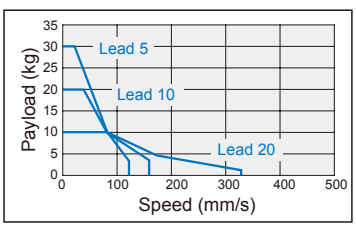
* Standard: 3 m

Speed-payload curve diagram

Horizontal

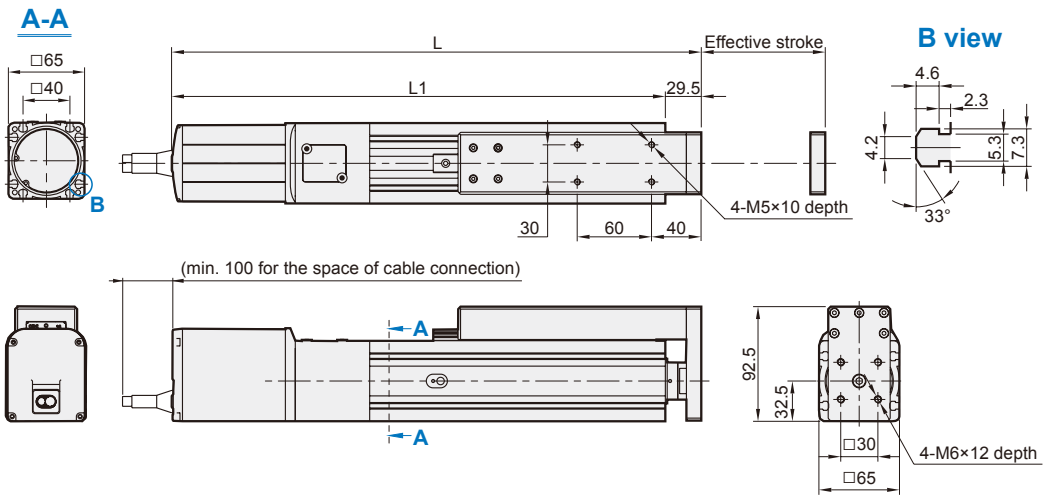


Vertical



M

Motor built-in

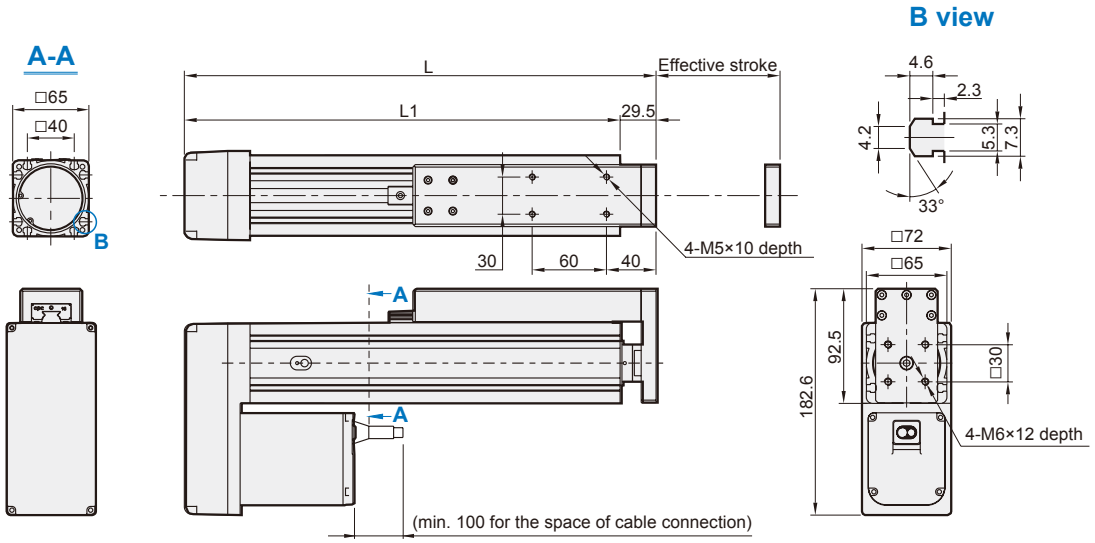


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	377.5	427.5	477.5	527.5	577.5	627.5	677.5	727.5	777.5	827.5
L1	348.5	398.5	448.5	498.5	548.5	598.5	648.5	698.5	748.5	798.5
KG	5.5	5.76	6.02	6.28	6.53	6.79	7.05	7.31	7.57	7.82

BM

Motor on lower side



Unit: mm

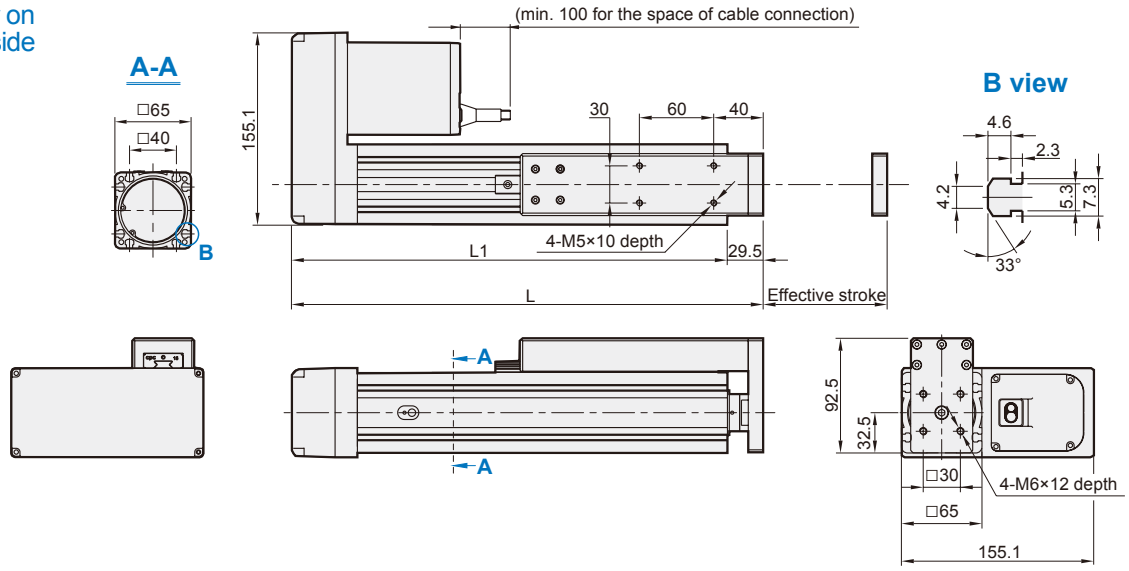
Stroke	50	100	150	200	250	300	350	400	450	500
L	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5
L1	241	291	341	391	441	491	541	591	641	691
KG	6	6.26	6.52	6.78	7.03	7.29	7.55	7.81	8.07	8.32

MEQYC-65L Dimensions

ROD ELECTRIC CYLINDER - BALL SCREW DRIVE (WITH MOTOR)

mindman

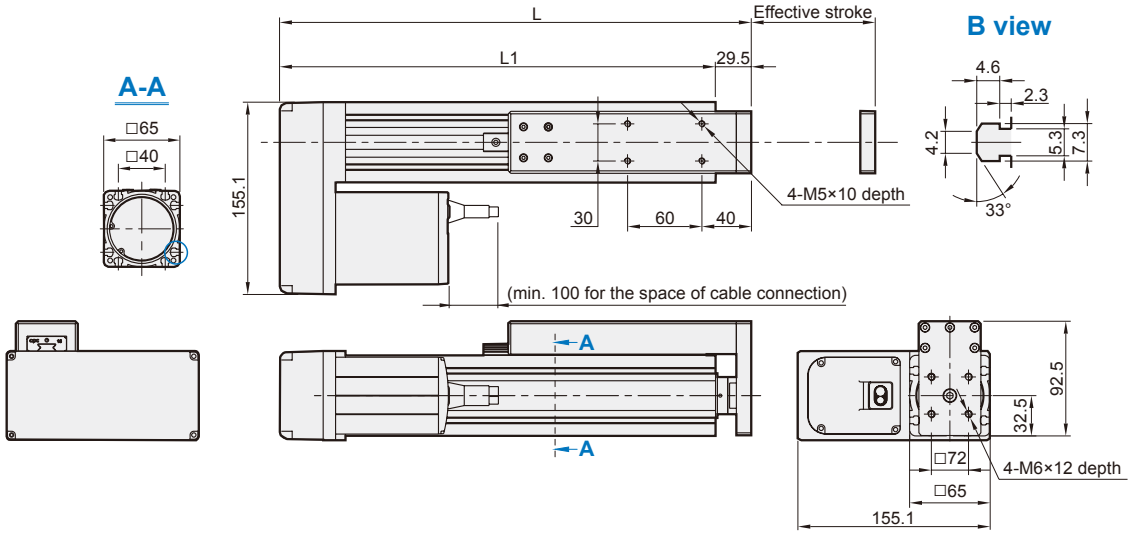
BR
Motor on right side



Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5
L1	241	291	341	391	441	491	541	591	641	691
KG	6	6.26	6.52	6.78	7.03	7.29	7.55	7.81	8.07	8.32

BL
Motor on left side

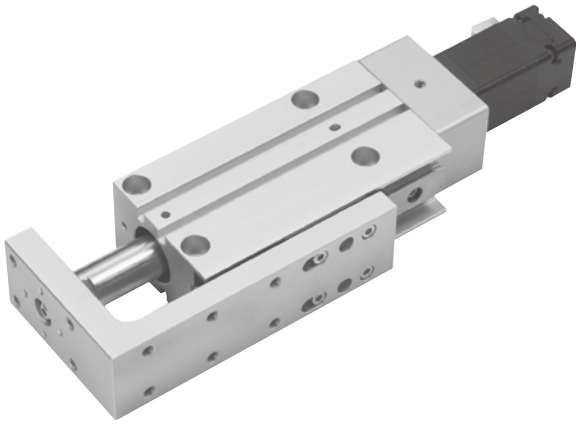


Unit: mm

Stroke	50	100	150	200	250	300	350	400	450	500
L	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5
L1	241	291	341	391	441	491	541	591	641	691
KG	6	6.26	6.52	6.78	7.03	7.29	7.55	7.81	8.07	8.32

MESH-20 series

MINIATURE ELECTRIC CYLINDER (WITH MOTOR)



Specification

Model		MESH-20	
Repeatability (mm)		±0.02	
Ball screw lead (mm)		1	6
Maximum speed (mm/s)*		50	250
Maximum payload	Horizontal (kg)	6	2
	Vertical (kg)	2	0.5
Rated thrust (N)		466	75
Stroke (mm)		30 / 50	
Motor dimension (mm)		□25	
Ball screw spec (mm)		C10ø6	

* The maximum speed shown here is when software speed setting is 100%.

Order example of cylinder

MESH-20 — L06 — 50 — TC100 — 03 — A0001

Model: MESH-20

Spec.: L06

Special order no.: A0001

Ball screw brand

L	T-Standard MIT

Ball screw lead

01	1 mm
06	6 mm

Stroke

10	10 mm
30	30mm
50	50mm

* Stroke can be customized

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

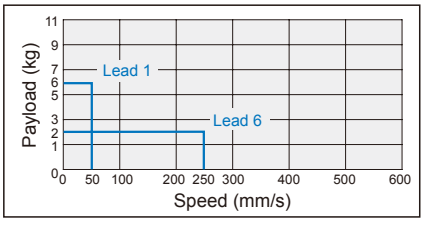
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

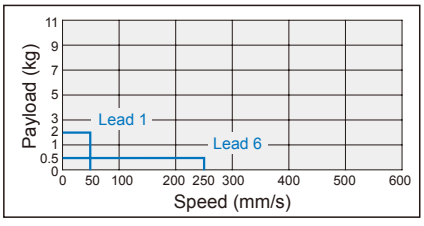
* Standard: 3 m

Speed-payload curve diagram

Horizontal

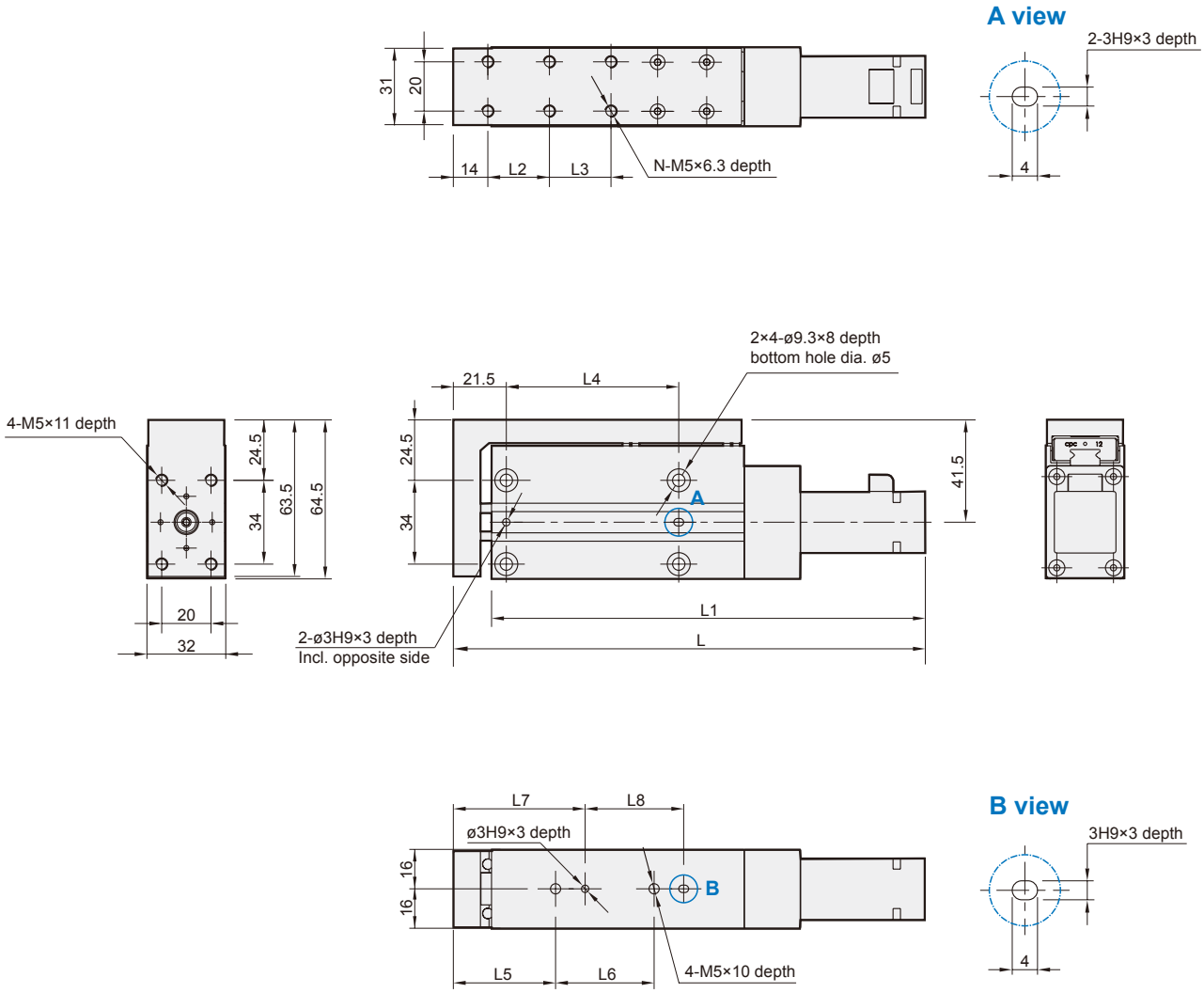


Vertical



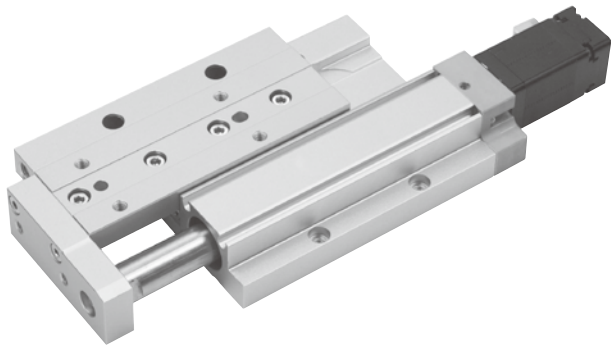
MESH-20 Dimensions

MINIATURE ELECTRIC CYLINDER (WITH MOTOR)



Unit: mm

Stroke	N	L	L1	L2	L3	L4	L5	L6	L7	L8	Weight(g)
10	4	151.5	136	10	0	20	21.5	30	33.5	30	506
30	4	171.5	156	30	0	40	31.5	30	43.5	30	724
50	6	191.5	176	25	25	70	41.5	40	53.5	40	1035



Specification

Model		MESF-20	
Repeatability (mm)		±0.02	
Ball screw lead (mm)		1	6
Maximum speed (mm/s)*		50	250
Maximum payload	Horizontal (kg)	6	2
	Vertical (kg)	2	0.5
Rated thrust (N)		466	75
Stroke (mm)		30 / 50	
Motor dimension (mm)		□25	
Ball screw spec (mm)		C10ø6	

* The maximum speed shown here is when software speed setting is 100%.

Order example of cylinder

MESF-20 — L06 — 50 — TC100 — 03 — A0001

- MESF-20: Model
- L06: Spec.
- A0001: Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

01	1 mm
06	6 mm

Stroke

30	30 mm
50	50 mm

* Stroke can be customized

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

- TC100: Controller
- 03: Cable length

Controller

TC100

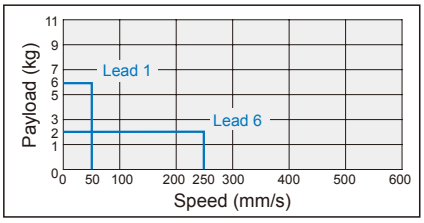
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

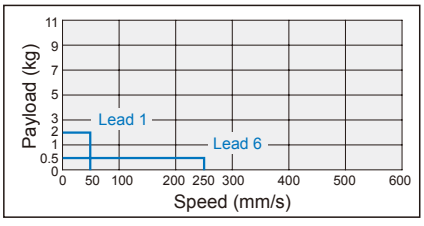
* Standard: 3 m

Speed-payload curve diagram

Horizontal

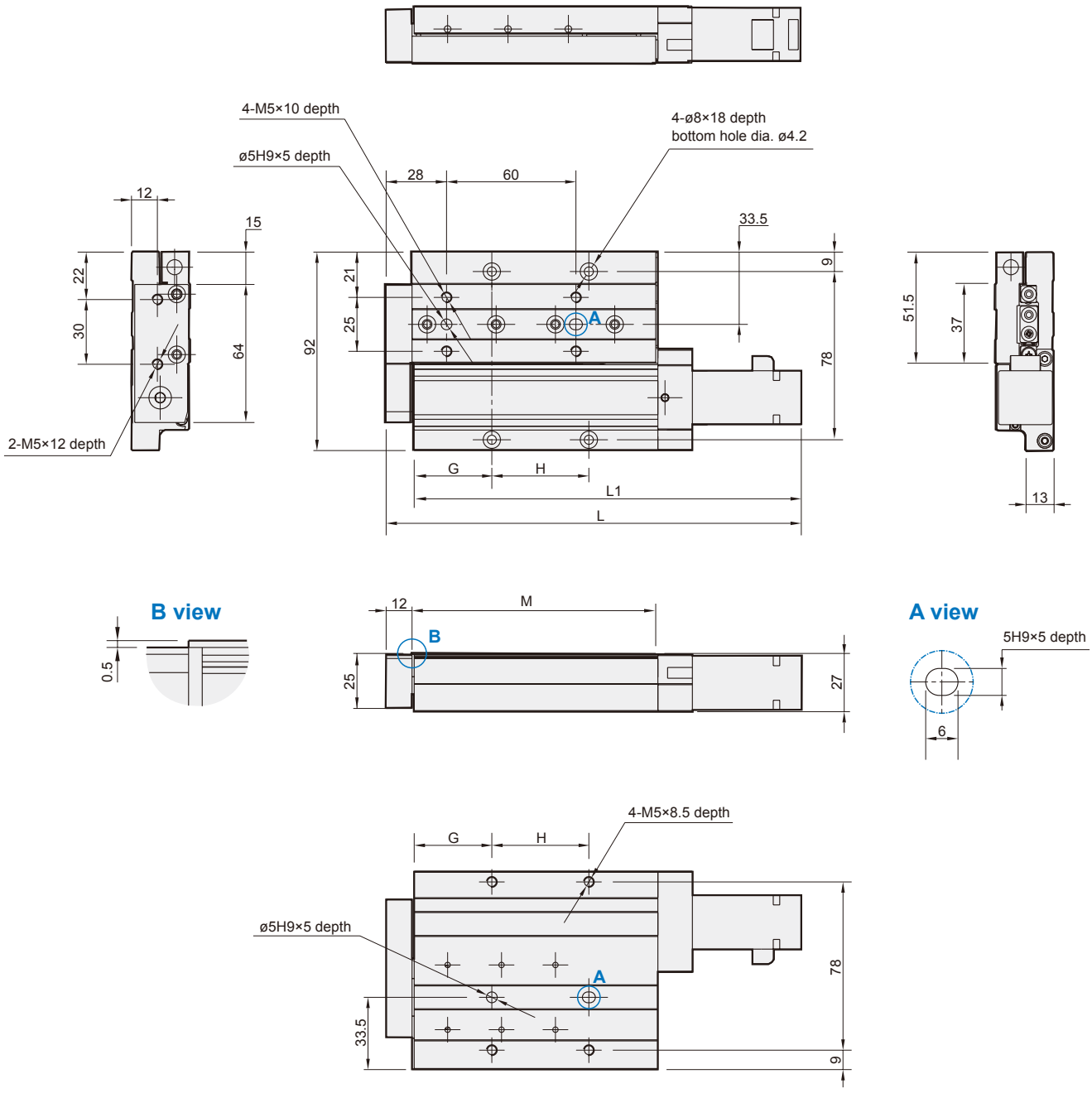


Vertical



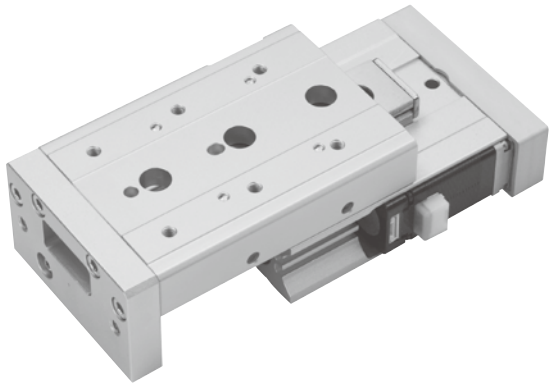
MESF-20 Dimensions

MINIATURE ELECTRIC CYLINDER (WITH MOTOR)



Unit: mm

Stroke	L	L1	G	H	M	Weight (g)
30	170.5	157.5	29	30	91	742
50	192.5	179.5	36	45	113	1058



Specification

Model		MESS-20	
Repeatability (mm)		±0.02	
Ball screw lead (mm)		1	6
Maximum speed (mm/s)*		50	250
Maximum payload	Horizontal (kg)	6	2
	Vertical (kg)	2	0.5
Rated thrust (N)		466	75
Stroke (mm)		30 / 50	
Motor dimension (mm)		□25	
Ball screw spec (mm)		C10ø6	

* The maximum speed shown here is when software speed setting is 100%.

Order example of cylinder

MESS-20 — L06 — 50 — TC100 — 03 — A0001

Model | Spec. | Special order no.

Ball screw brand

L	T-Standard MIT

Ball screw lead

01	1 mm
06	6 mm

Stroke

30	30 mm
50	50 mm

* Stroke can be customized

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

TC100

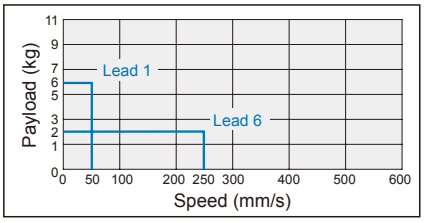
Cable length

Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

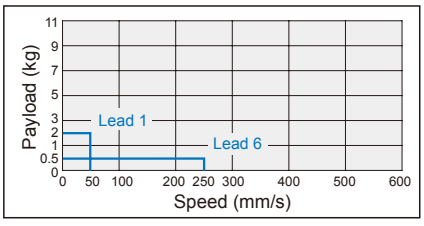
* Standard: 3 m

Speed-payload curve diagram

Horizontal

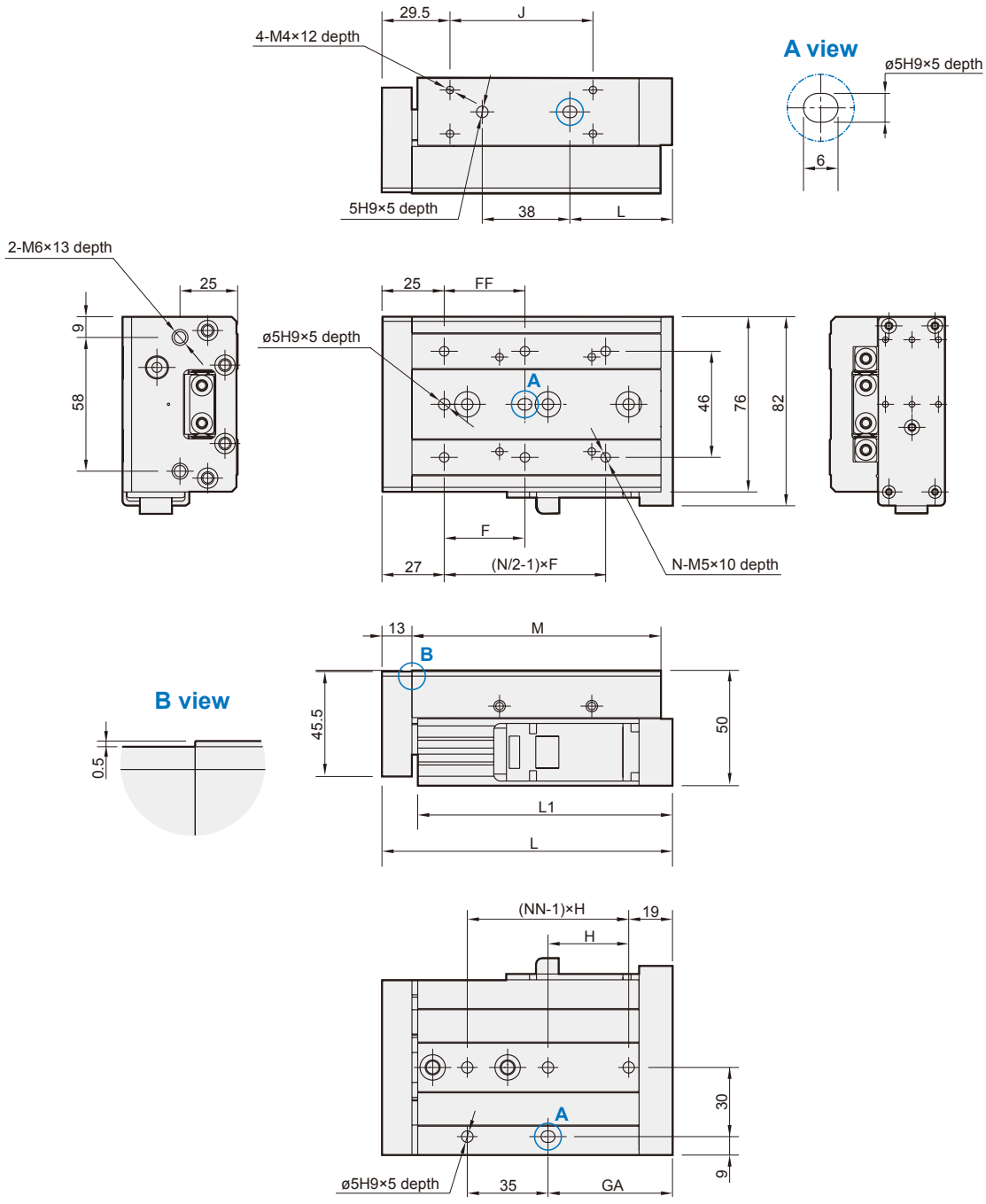


Vertical



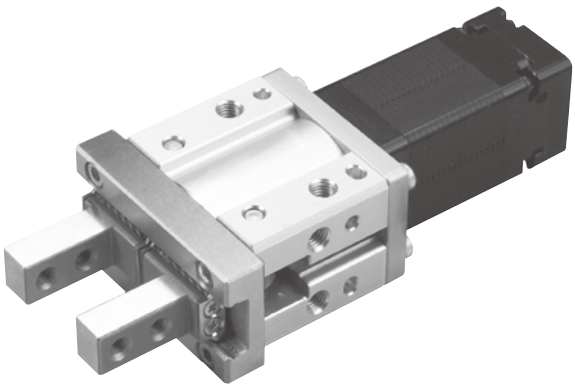
MESS-20 Dimensions

MINIATURE ELECTRIC CYLINDER (WITH MOTOR)



Unit: mm

Stroke	L	L1	F	FF	N	H	NN	GA	J	L	M	Weight(g)
30	101	85.5	50	40	4	45	2	29	37	19.5	83	1046
50	126	110.5	35	35	6	35	3	54	62	44.5	108	1495



Specification

Model	MEHC-20
Gripper force (N)	22~98
Open and close stroke (mm) (*1)	10
Open and close speed (mm/s)	5~50
Position repeatability (mm)	±0.02
Guide structure	Linear guide
Operating temperature range	0~+40°C
Operating humidity range (%)	Below RH90
Motor dimension (mm)	□25
Weight (g) (*2)	368

*1. Total stroke of both sides.
*2. Weight of model with motor.

Order example of gripper

MEHC-20 — S10 — TC100 — 03 — A0001

Model | Spec. | Special order no.

Type

S10	Standard type
N10	Narrow type

Corresponding controller

TC100

* Please refer to 4-118.

Cable length

01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

Controller

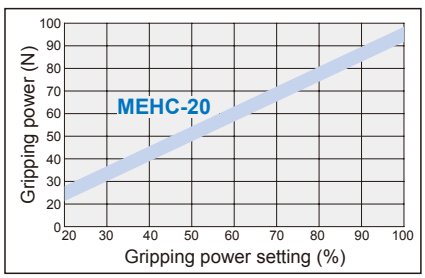
TC100

Cable length

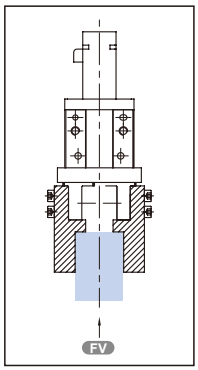
Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

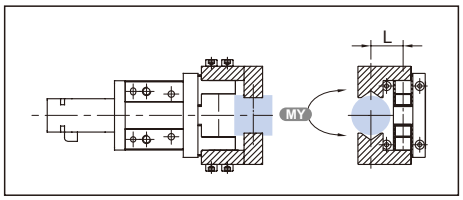
* Standard: 3 m

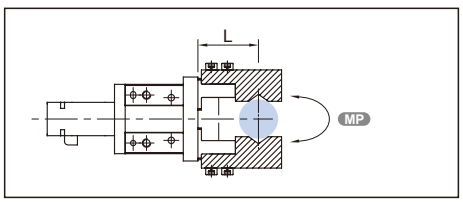
Gripping power VS. Gripping power setting

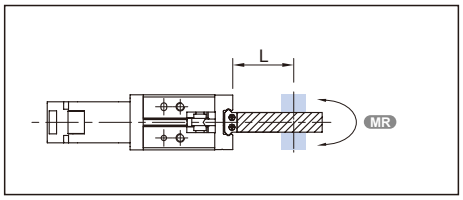


Allowable moment and force (N.m / N)









Maximum moment	
MY	1.32 (N.m)
MP	1.32 (N.m)
MR	2.65 (N.m)
Maximum force	
FV	147 (N)

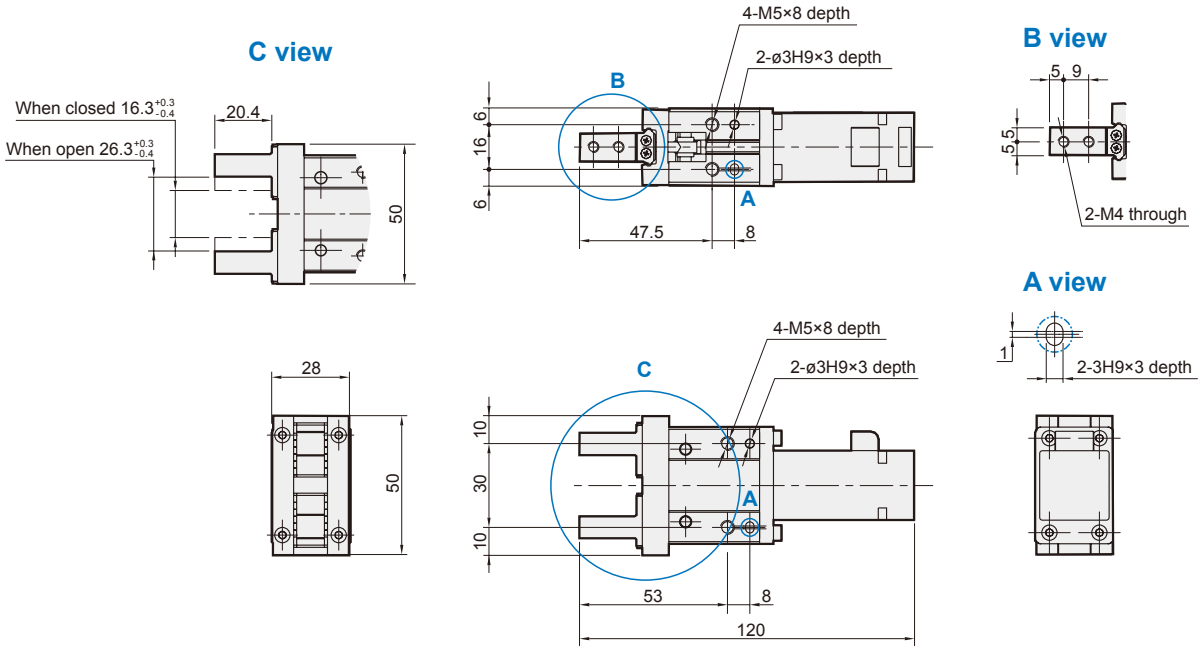
*MY:Allowable yawing moment
*MP: Allowable pitching moment
*MR: Allowable rolling moment
*FV: Vertical maximum force

*L: Distance to the loading location (mm).

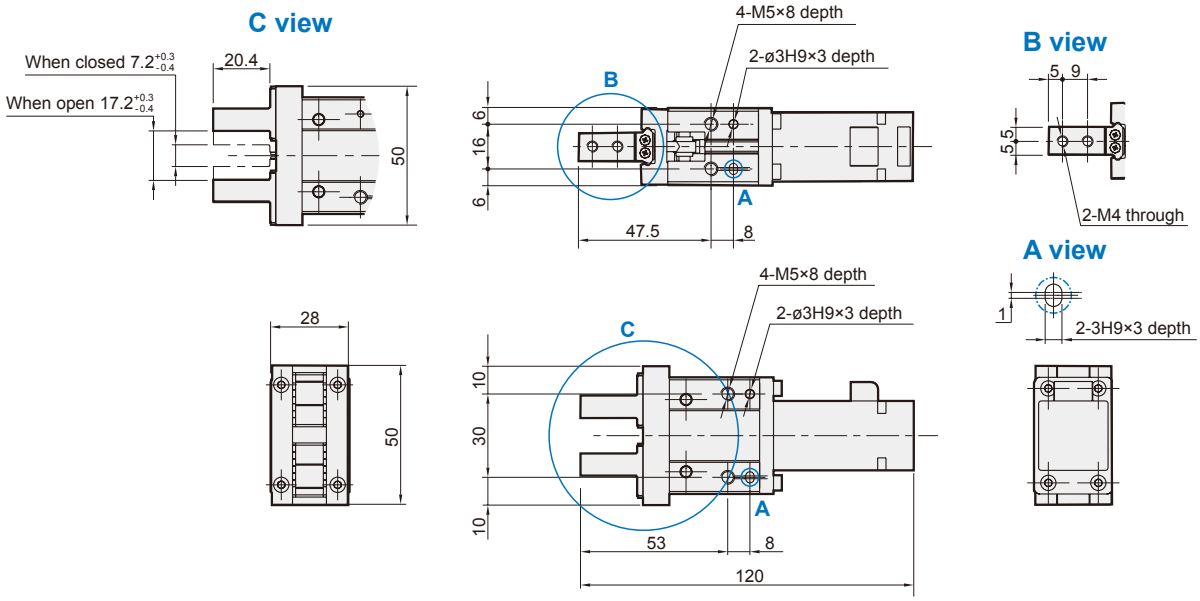
MEHC-20 Dimensions

ELECTRIC GRIPPER (WITH MOTOR)

S10 Standard type

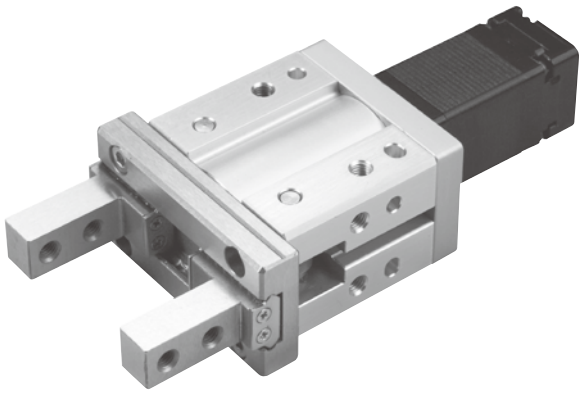


N10 Narrow type



MEHC-25 series

ELECTRIC GRIPPER (WITH MOTOR)



Specification

Model	MEHC-25
Gripper force (N)	22~98
Open and close stroke (mm) (*1)	14
Open and close speed (mm/s)	5~50
Position repeatability (mm)	±0.02
Guide structure	Linear guide
Operating temperature range	0~+40°C
Operating humidity range (%)	Below RH90
Motor dimension (mm)	□25
Weight (g) (*2)	552

*1. Total stroke of both sides.
*2. Weight of model with motor.

Order example of gripper

MEHC-25 — S14 — TC100 — 03 — A0001

Model | Spec. | Type | Corresponding controller | Cable length | Special order no.

Type	
S14	Standard type
N14	Narrow type

Corresponding controller
TC100

* Please refer to 4-118.

Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

* Standard: 3 m

Order example of controller

TC100 — 03

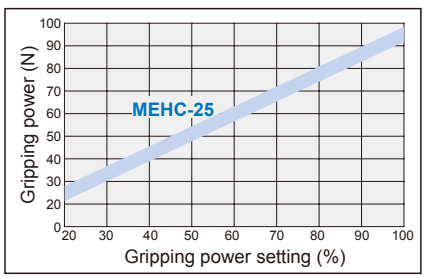
Controller | Cable length

Controller
TC100

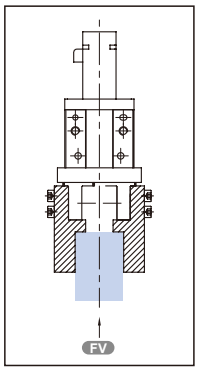
Cable length	
Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

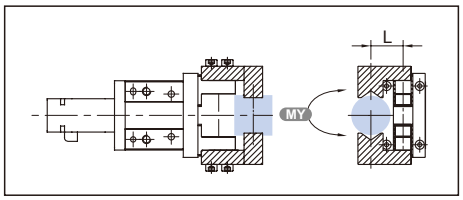
* Standard: 3 m

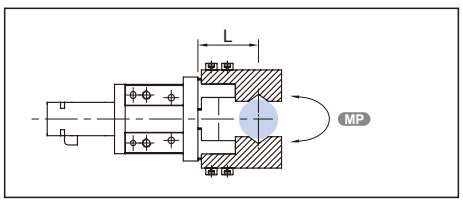
Gripping power VS. Gripping power setting

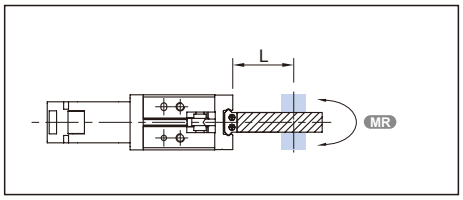


Allowable moment and force (N.m / N)









Maximum moment	
MY	1.94 (N.m)
MP	1.94 (N.m)
MR	3.88 (N.m)
Maximum force	
FV	255 (N)

*MY:Allowable yawing moment
*MP: Allowable pitching moment
*MR: Allowable rolling moment
*FV: Vertical maximum force

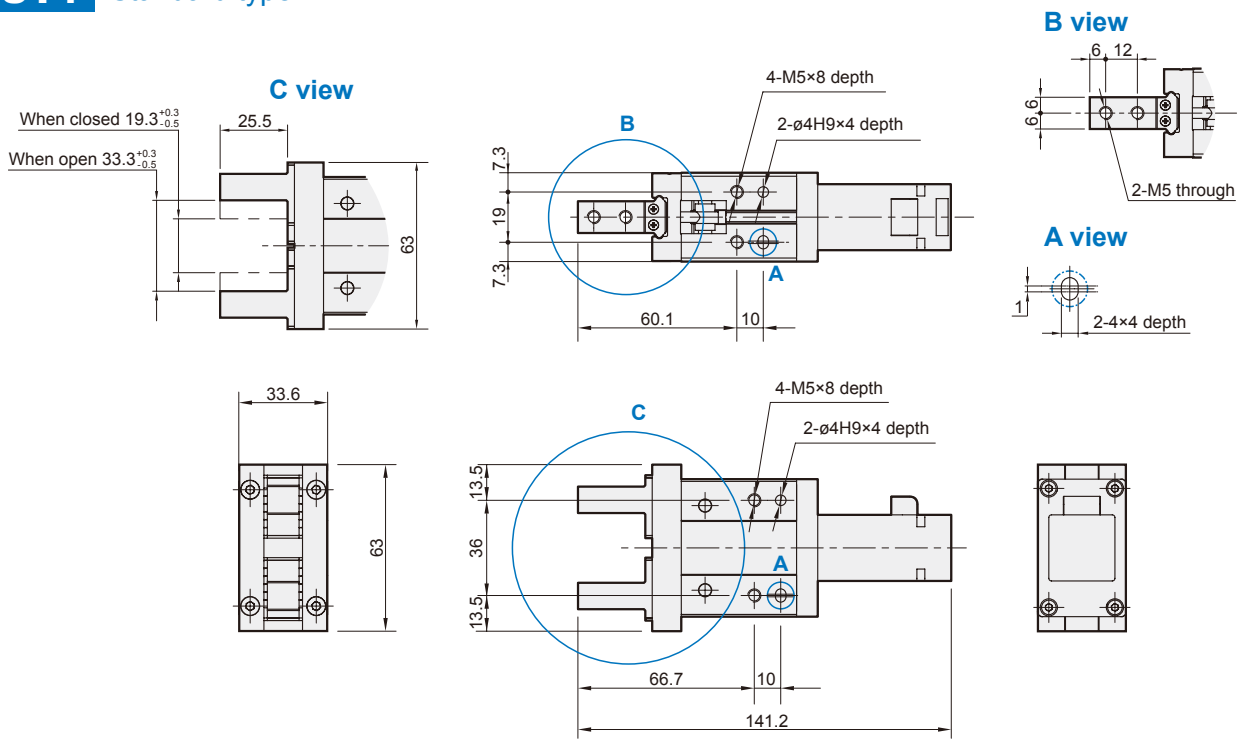
*L: Distance to the loading location (mm).

MEHC-25 Dimensions

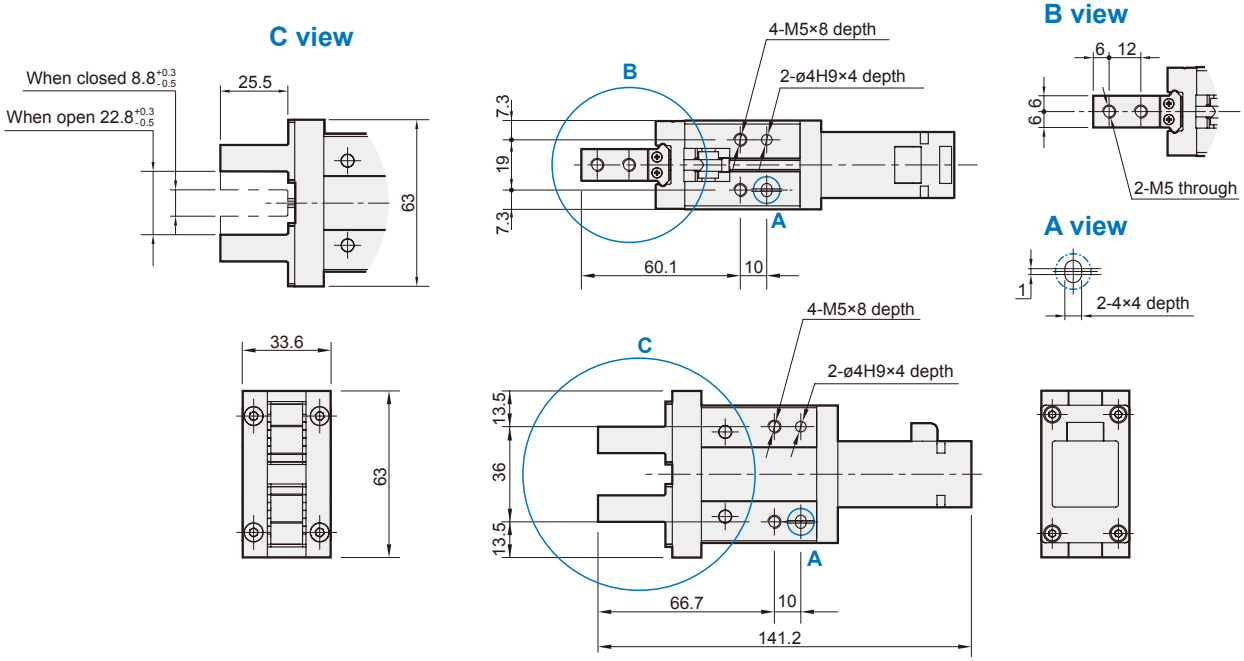
ELECTRIC GRIPPER (WITH MOTOR)

mindman

S14 Standard type



N14 Narrow type



TC100 Features

ELECTRIC CYLINDER CONTROLLER

Perfect combination of actuator and controller
(Servo cylinder series controller)

Applicable model			
			
METGC series	**METSC** series	**MEQYC** series	

Applicable model			
			
MESH series	**MESF** series	**MESS** series	**MEHC** series

The controller which is the first and innovative in the industry can simultaneously support 3 different control modes and the controller can do the outputting signal of the motor encoder (optional) to the host control unit.
(Pulse / I/O / Communication)

Abundant collocation

The same controller which is compatible to various modules and cables. It can be easily set up and adjusted and reduce the cost for repairing spare parts.

- Slider cylinder: METGC, METSC series
- Rod cylinder: MEQYC series
- Miniature cylinder: MES* series
- Electric gripper: MEHC series

Easy-to-use UI software

Support Traditional Chinese / English / Japaneuse use interfaces.

- Position teaching
- Software edition
- Operation monitoring
- Parameter setting
- Error log
- Data backup and reading

Operational current auto setting

Operational current is the main factor determining the efficiency and lifetime of the robot. If the operational current is set too high, the extra performance will be wasted, or even the motor might be burnt. TC series controller can adjust operational current automatically based on the moving load, motor output and lifetime of the rail.

Flexible control interface

One single unit can support 3 different control interfaces.

- Pulse control: Support line driver and open collector Max. pulse receiving speed: 500K/200K Hz.
- I/O control: By I/O control, max. 127 positioning points can be executed.
- Communication control: Use MODBUS as the interface of RS485 (connect max. 16 controllers) and 1 set mini USB (special for single)

Various control mode

Following control modes can be combined randomly to maximize the action mode.

- Position control
- Speed control
- Gripping force control (Electric gripper only)
- Measure control (Electric gripper only)
- Pushing force control

Possible to connect 16 stations via RS485

The user can connect PC, PLC or other devices which can transfer data via RS485 to TC100 controller. It is very convenient to do the setting, controlling and monitoring up to 16 units of TC100 at once.

Excellent performance

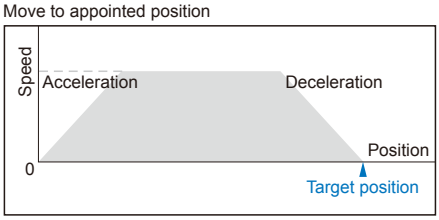
Smooth operation

- High performance closed circuit stepping motor with encoder will not be out of steps even with high speed movement.
- Smoother movement and more accurate positioning.
- The speed can be increased 20% (depending on aircraft types) by switching the power voltage to DC48V, normally use DC24V.

Main operation modes

■ ABS mode

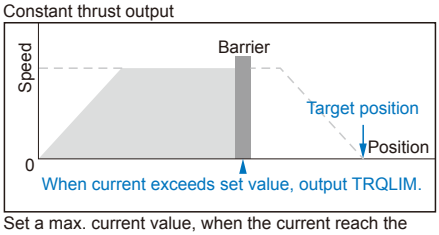
Move to appointed position



Use ORG as origin, move to the appointed position.

■ +/- TSL thrust mode

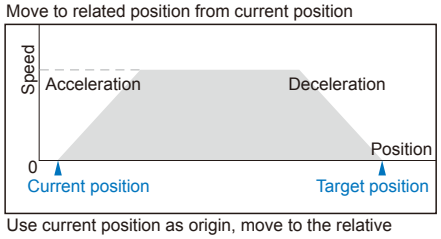
Constant thrust output



Set a max. current value, when the current reach the value, it will not proceed further.

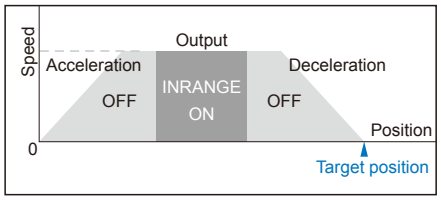
■ INC mode

Move to related position from current position



Use current position as origin, move to the relative position.

■ Output signal in specified mode



Set up a special range. The “INRANGE” signal will be output when moving in the range. The “OFF” signal will be output when it is outside of the range.

Adjustable data settings

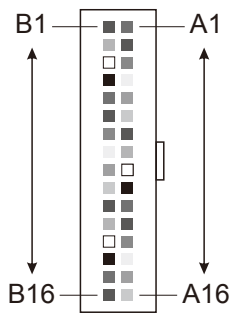
Setting	Content
Operation mode	Position setting mode, total 5 types including INC and ABS...etc.
Moving position	Set absolute position or moving amount
Moving speed	Set speed of movement (%)
Torque limit	Set operational current limit
Minimum value of trigger range	Set the max and min value of the trigger range
Maximum value of trigger range	
Dowel time	Set dowel time after movement.
Next item number	Jump to the next operational item after current one has ended.

Specification and connectors

■ Specification

Item		Specification
Number of controlled axis		Single axis
Compatible product series		METGC / METSC / MEQYC / MESH / MESF / MESS / MEHC
Dimension (mm)		W30*H153*D74.5
Weight (kg)		≈0.2
Input power	Control power	DC24V ±10%
	Power supply	DC24V ±10%, DC48V ±10%
Operation mode		Pulse control, I/O controller, Communication control
Motor controlling method		Close loop vector control
Position detection method		Encoder
Motor resolution		□25= 9600ppr; □42, □56= 16000ppr
Homing method		Torque / Sensor to select one
Motion control mode		ABS mode
		INC mode
		TSL thrust mode
		Continuous mode
Position	Total number of points	1~127 points
	Points setting method	Communication / I/O / Software
Pulse	Connection method	Line driver / Open collector (500K/200K Hz)
	Input method	CW/CWW ; Pulse / dir ; A phase / B phase
Communication		USB (visual COM port): mini USB RS485 (half-duplex): RJ45
Software		Single
Operation temperature, humidity		0~50°C, 85% RH max. (Dew free)
Storage temperature, humidity		-20~85°C, 85% RH max. (Dew free)
Surrounding environment		Indoor without direct sun shine, free from corrosive or flammable gas, oil mist or massive dusts.

■ I/O plug



Dimension and terminal

■ Ordering model

TC100 *1 — 03 *2

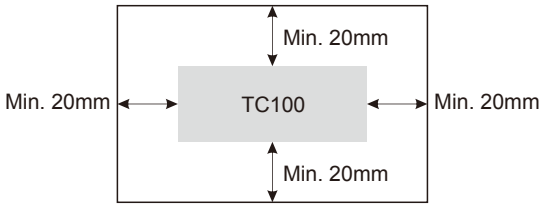
Controller set

Cable length

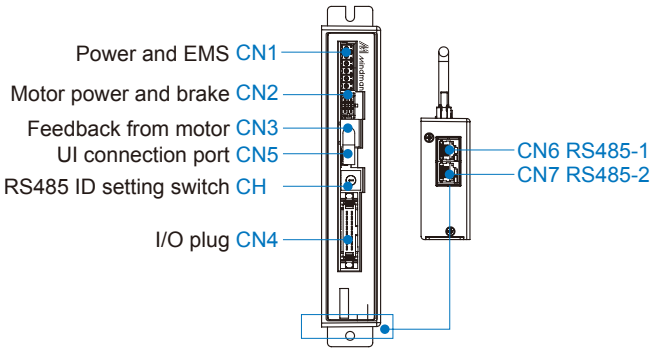
Blank	No cable
01	1 m
03	3 m
05	5 m
10	10 m

*1. Standard length of I/O cable is 1.5 meter.
*2. Standard: 3m

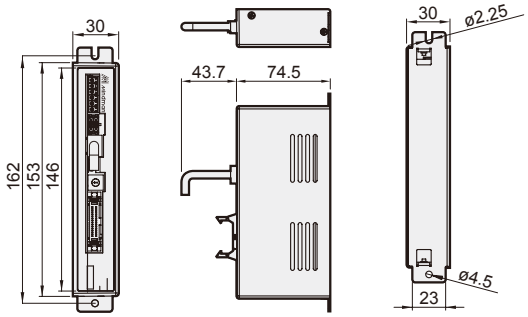
■ Recommended assembly method



■ Port explanation



■ Controller dimension



■ I/O signal (Factory default)

NO.	Signal name	Color	Explanation	NO.	Signal name	Color	Explanation
A1	COM+	Brown	I/O power + 24V	B1	OUT 1	Violet	ORG-S
A2	COM-	Red	I/O power 0V	B2	OUT 2	Grey	INP
A3	IN 1	Orange	ORG	B3	OUT 3	White	READY
A4	IN 2	Yellow	SERVO	B4	OUT 4	Black	SERVO-S
A5	IN 3	Green	ALM_RESET	B5	OUT 5	Brown	PRGSEL0-S
A6	IN 4	Blue	START	B6	OUT 6	Red	PRGSEL1-S
A7	IN 5	Violet	PRGSEL0	B7	OUT 7	Orange	PRGSEL2-S
A8	IN 6	Grey	PRGSEL1	B8	OUT 8	Yellow	PRGSEL3-S
A9	IN 7	White	PRGSEL2	B9	OUT 9	Green	PRGSEL4-S
A10	IN 8	Black	PRGSEL3	B10	OUT 10	Blue	PRGSEL5-S
A11	IN 9	Brown	PRGSEL4	B11	P1+	Violet	CW, B phase, PULSE
A12	IN 10	Red	PRGSEL5	B12	P1-	Grey	
A13	IN 11	Orange	PRGSEL6	B13	P2+	White	CCW, A phase, DIR
A14	IN 12	Yellow	ORG-S	B14	P2-	Black	
A15	Reserved	Green	-	B15	-	Brown	-
A16	Reserved	Blue	-	B16	FG	Red	Grounding

■ **Restricted setting condition**

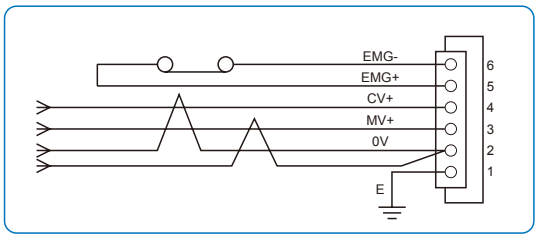
- Environment with corrosive, explosive and flammable gas and combustible liquids.
- Environment with heavy dust.
- Locations where can be polluted by other equipments coolant.
- Locations with high vibrations (0.5G or above).
- Please locate the controller as shown on the right for correct installation position.

Wiring diagram (Power / I/O / EMS)

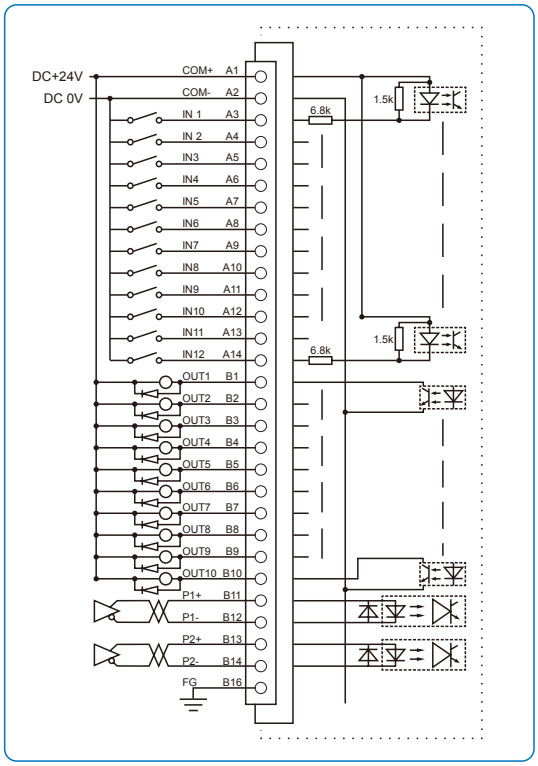
■ **Pin designation**

NO.	Signal name	Explanation
1	E	Grounding (Ensure to connect to ground to avoid disturbance)
2	0 V	GND
3	MV +	Main power supply: DC24V±10%; DC48±10%
4	CV +	Controlling power: DC24V±10%
5	EMG +	EMS (Please use normal close connection)
6	EMG -	

■ **EMS and power wiring**

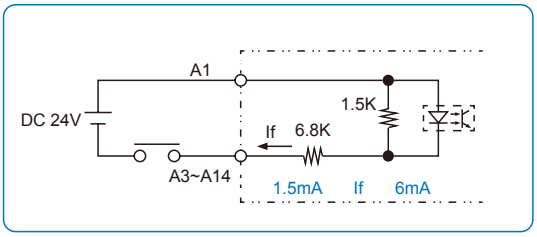


■ **IN/OUT wiring (NPN)**

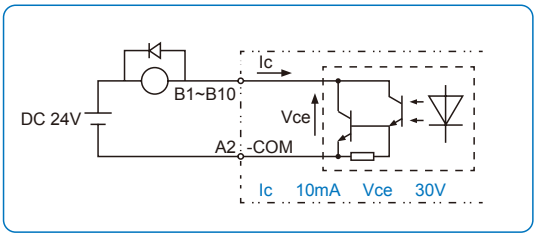


■ Relay wiring

• Input circuit

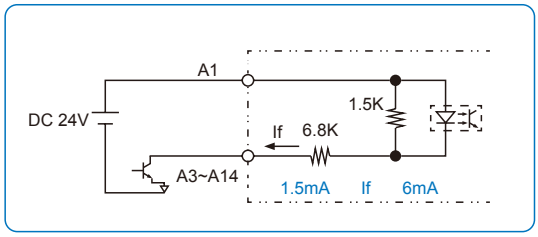


• Output circuit

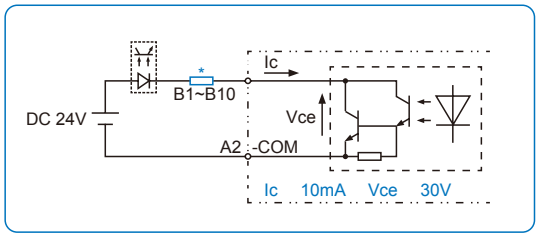


■ Transistor wiring

• Input circuit



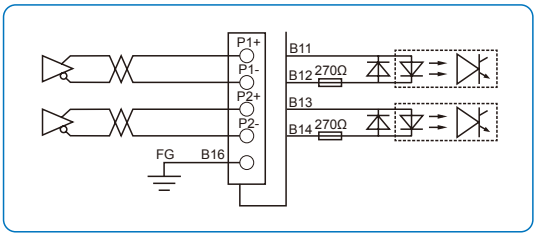
• Output circuit



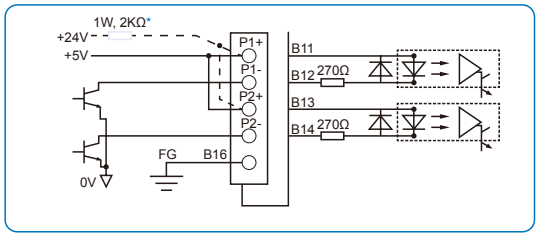
* Note: Please consider the output saturation voltage of optocoupler 1 Vtyp (When output current is 10mA).

■ Pulse output wiring

• Line drive



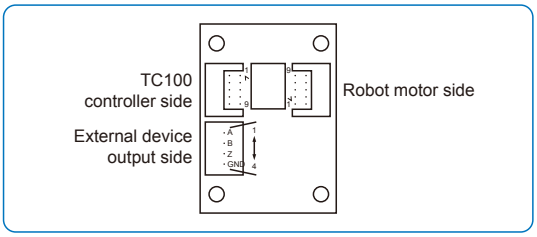
• Open collector



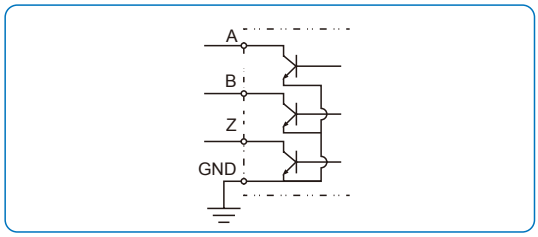
* If use +24V, it is a must to connect 1WKΩ (Recommended) resistor.

■ Encoder output module wiring

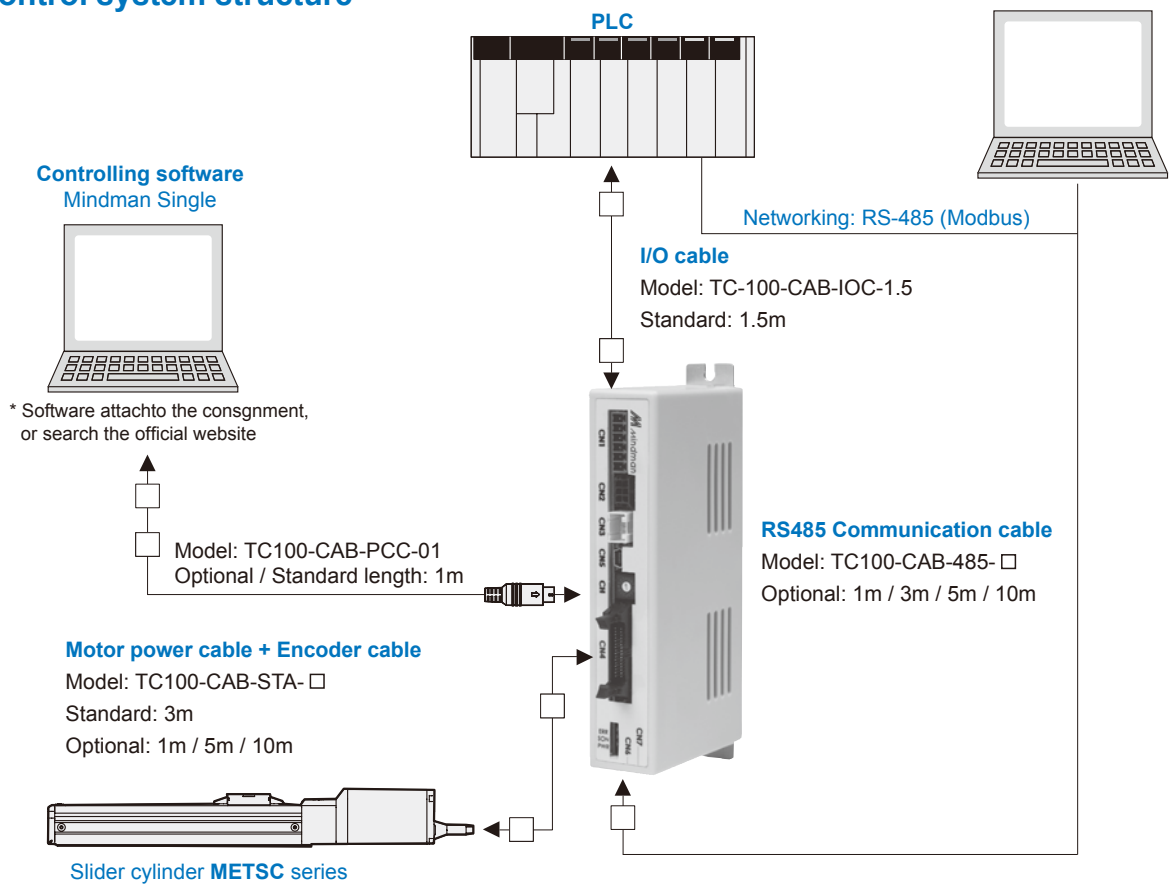
• Encoder output module



• External device output wiring



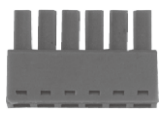
Control system structure



Accessories list

■ **Standard accessories**

Power supply connector		I/O cable (1.5m)		Standard cable (Motor power + Encoder)	
Model	TC100-CON-POW-00	Model	TC100-CAB-IOL-1.5	Model	TC100-CAB- 25 -STA - ☐ TC100-CAB- 42 -STA - ☐

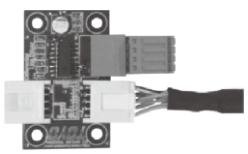


Motor dimension	
Size	Applicable model
25	MEHC
42	METGC-5, METSC, MEQYC, MESH, MESF, MESS

Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

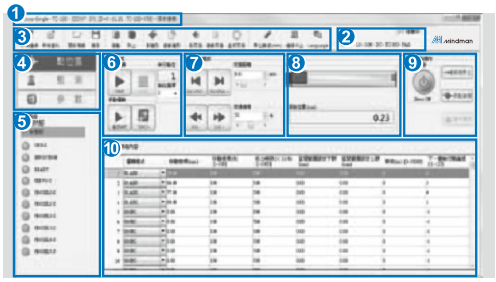
■ **Optional accessories**

Encoder output module		Mini USB cable for supporting software		RJ45 Cable for RS485 connections	
Model	TC100-PCB-ENC-00	Model	TC100-CAB-PCC-01	Model	TC100-CAB-485- ☐



Cable length	
01	1 m
03	3 m
05	5 m
10	10 m

■ Main page-position points



❶ **Basic status bar**

Display current system status, from left to right, product name, software name, communication port, station ID, firmware version, software version and connection status.

❷ **Model and controller status**

Display current robot model and controller status.

❸ **Toolbar**

The toolbar contains: new connection, new data file, open data file, save, copy, paste, read position point list, read parameters, overwrite position point list, overwrite parameter, overwrite all, display unit change and disconnect.

❹ **Function page selection**

To select the setting of position points, monitoring and parameters.

❺ **Output monitoring**

Display current output from controller and alarm status.

❻ **Automatic operation**

Proceed with the selected position points automatically.
Operating point
Display current position point.
Manual operation
Proceed with the selected position points automatically.(suggest to use when confirming the teaching).

❼ **Manual operation**

Proceed with JOGGING and INCHING.

❽ **Current position**

Display the current position.

Simulation display

Simulate the movement of current hardware.

❾ **SERVO/ORG control**

Control servo ON or OFF, returning to the ORG, deceleration, stop and alarm reset.

❿ **Position point list**

Set position point moving mode, speed, torque, dowel time and next step.

Basic specification

Specification	O/S
OS	Microsoft Windows 2000/XP/Vista/7/8.1
CPU	Meet the requirement of the O/S
Memory	Meet the requirement of the O/S
Free HD space	20MB or above free space
Communication ports	RS485, USB
compatible controller	TC100

■ Monitoring page

❶ **Input monitoring**

Monitoring all input signal and all signal is forced to output.

❷ **Output monitoring**

Monitoring all output signal but cannot be forced to output to other device.

❸ **Position and pushing position control**

Torque limit movement control.

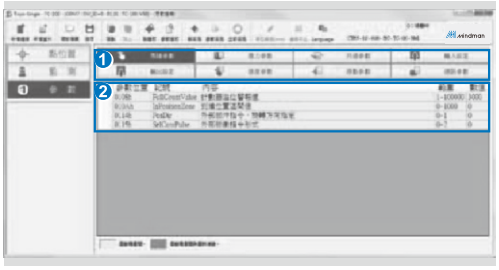
❹ **Motor status monitoring**

Monitoring the motor status, such as current, rotation speed, current position and alarm status...etc.

❺ **Alarm log**

Display the last 50 alarm, the latest one is on top.

■ Parameters page



❶ **List of parameters**

- Parameters of motor
- Parameters of thrust
- Common parameters
- Setting of input
- Setting of output
- Speed parameters
- Parameters of homing
- Parameters of communication setting

❷ **Parameter content**

The content is including the name, description and the of parameters, description and setting value of parameters.