

Discontinued some variations

Sales of ECS-05 to ECS-12 will be terminated.

ECS

Stepper motor
electric actuator
Motorless specifications


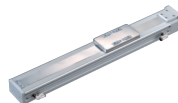
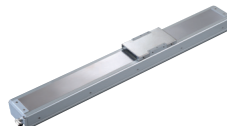
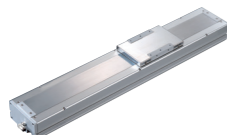
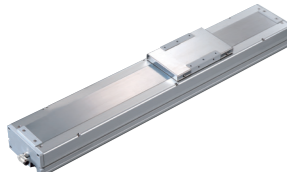
Slider (ball screw drive low dust specifications)



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Sales of ECS-05 to ECS-12 will be terminated.

Series variation																																			
Type	Model No.		Applicable motor size	Body width (mm)	Screw lead (mm)	Max. load capacity (kg) *2							Stroke length (mm) and max. speed (mm/s) *3																				Page		
						Horizontal *1	Vertical						50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000		1050	1100
Low dust generation type		ECS-05-M	□ 42	51	2	10	7						100 mm/s					90	80	70	60	*4 ⌚	13.53 sec											642	
					5	10	3						250					225	200	175	150	⌚	5.53 sec												
					10	5	1.5						500					450	400	350	300	⌚	2.87 sec												
		ECS-06-M	□ 42	65	2	30	15						100					90	80	70	60	⌚	13.53 sec											648	
					5	30	10						250					225	200	175	150	⌚	5.53 sec												
					10	15	5						500					450	400	350	300	⌚	2.87 sec												
		ECS-10	□ 56 □ 60	102	5	50	12						250					225	200	175	150	125	⌚	8.6 sec											654
					10	30	8						500					450	400	350	300	250	⌚	4.4 sec											
					16	22	5						800					720	640	560	480	400	⌚	2.83 sec											
					20	18	3						1000					900	800	700	600	500	⌚	2.3 sec											
		ECS-12	□ 56 □ 60	102	5	50	12						250					225	200	175	150	125	⌚	8.6 sec											660
					10	30	8						500					450	400	350	300	250	⌚	4.4 sec											
					16	22	5						800					720	640	560	480	400	⌚	2.83 sec											
					20	18	3						1000					900	800	700	600	500	⌚	2.3 sec											
		ECS-14	□ 56 □ 60	135	5	110	33						250					225	200	175	150	125	⌚	8.6 sec											666
					10	88	22						500					450	400	350	300	250	⌚	4.4 sec											
16					48	10						800					720	640	560	480	400	⌚	2.83 sec												
20					40	8						1000					900	800	700	600	500	⌚	2.3 sec												

Series variation

Stepper motor compatible

ECS

Servo motor compatible

ECS

ETS Multi-Axis

ETV

ECV

EKS

EBS

EBR

ETS

EBR

EBS

Stepper motor compatible

ECS

Servo motor compatible

ECS

ETS Multi-Axis

ETV

ECV

EKS

EBS

EBR

ETS

EBR

EBS

*1: The load capacity when wall mounted is the same as for horizontal installation.

*2: The rated thrust and max. load capacity values are the allowable values for the actuator body; the actual thrust and load capacity are limited by the motor used.

*3: The max. speed is the speed when the motor mounted by the customer can output a rotation speed of 3000 rpm.
The max. speed is restricted by the stroke. Do not move at speeds beyond the limit.

*4: ⌚ shows the positioning time. Maximum stroke when installed horizontally and operated at max. speed and max. acceleration/deceleration.
Note that this is not the value at maximum load capacity.

How to order

How to order

ECS - 06 - 05 040 - E A A N C B D P - M

A Body size	D Motor mounting direction *1	G Brake	L Magnet slider method *2
05 Body width 51 mm	E Straight mounting	N None	Standard
06 Body width 65 mm	R Right mounting		M Yes
10 Body width 102 mm	D Bottom mounting		
12 Body width 102 mm	L Left mounting		
14 Body width 135 mm			

B Screw lead	E Mounted motor specification	H Origin sensor (1 pc) *1	K Positioning pin hole
02 2 mm	A Refer to the list on the page at right	N None	N None
05 5 mm		A Inside motor side	P Yes
10 10 mm		B Inside motor opposite side	
16 16 mm		C Outside motor side (Included at shipment)	
20 20 mm		D Outside motor opposite side (Included at shipment)	

C Stroke length	F Motor size	I Limit sensor (2 pcs) *1	J Grease nipple
005 50 mm	A <input type="checkbox"/> 42	N None	N None (Body mounting direction: Standard)
to (In 50 mm increments)	B <input type="checkbox"/> 56	A Inside	D None (Body mounting direction: Bottom side)
105 1050 mm	C <input type="checkbox"/> 60	B Outside	R Right
			L Counterclockwise

*1: The sensor dog is assembled at shipment regardless of sensor presence.
 *2: ECS-05/06 uses the magnet slider method. Other sizes use the standard.

Example of model No.

ECS-06-05040-EAANCBDP-M

- A** Body size : 06 Series
B Screw lead : 5 mm
C Stroke length : 400 mm
D Motor mounting direction : Straight
E Mounted motor specification : A (refer to the table on the page at right)
F Motor size : ☐ 42
G Brake : None
H Origin sensor : External motor side
I Limit sensor : Outside
J Grease nipple : None (Body mounting method: Bottom side)
K Positioning pin hole : Yes
L Magnet slider method : Yes

*This product is composed of an actuator (and motor mounting parts) only; there is no motor attached.
 The user must prepare, mount, and adjust the motor and driver.

Discontinued some variations

ECS Series

List of stepper motors recommended for mounting

List of stepper motors recommended for mounting

Code	Manufacturer	Series	□42	□56	□60
A	Oriental Motor Co., Ltd.	AZ	AZM46□0□	-	AZM66□0□ AZM69□0□
		AR	ARM46□0□	-	ARM66□0□ ARM69□0□
B	MinebeaMitsumi Inc.	A17PM/A23KM	A17PM□□□CSTBCN	A23KM□□□CSTBCN	-
B	Dyadic Systems Co., Ltd.	RMJ	RMJ0411	-	-
C		RMJ	-	RMJ0611/RMJ1211	-

EBS	EBR	ETS	ETS Multi-Axis	ECS	ETV	ECV	EKS	EBS	EBR	ETS	ECS
Servo motor compatible								Stepper motor compatible			

Safety
precautions

Discontinued some variations

Electric actuator Ball screw drive Slider Low dust specification

ECS-14 Series

Straight motor mounting

● Stepper motor size: ☐56, ☐60



How to order

ECS - **14** - **05** **040** - **E** **A** **B** **N** **N** **N** **N** **P**

A Body size	D Motor mounting direction	H Origin sensor (1 pc) *1 *2 *3	K Positioning pin hole
14 Body width 135 mm	E Straight mounting	N None	N None
		A Inside motor side	P Yes
		B Inside motor opposite side	
		C Outside motor side	
		D Outside motor opposite side	
B Screw lead	E Mounted motor specification	I Limit sensor (2 pcs) *1 *2 *3	J Grease nipple *3 *4
05 5 mm	A Select the mounted	N None	N None (Body mounting direction: Standard)
10 10 mm	B motor specification from	A Inside	R Right
16 16 mm	C the table below.	B Outside	L Counterclockwise
20 20 mm			
C Stroke length	F Motor size		
005 50 mm	B <input type="checkbox"/> 56		
to (In 50 mm increments)	C <input type="checkbox"/> 60		
105 1050 mm	G Brake		
	N None		

*1: Origin sensor and limit sensor are available as a set. As it is both-or-nothing, select "None" for both.

*2: For sensor inside mounting, the user cannot adjust the position. (Assembled at shipment)

For sensor outside mounting, the user can adjust the position. (Included at shipment)

*3: Contact CKD to use the origin sensor, limit sensor and grease nipple in the same direction.

*4: "Body mounting direction: Standard" here refers to mounting from the bottom side.

Manufacturer	<input type="checkbox"/> 56	<input type="checkbox"/> 60
Oriental Motor Co., Ltd.	-	A
MinebeaMitsumi Inc.	B	-
Dyadic Systems Co., Ltd.	C	-

*Refer to page 641 for the motor model No.

Specifications

Applicable motor sizes	<input type="checkbox"/> 56, <input type="checkbox"/> 60 stepper motor			
Drive method	Ball screw ϕ 16			
Ball screw accuracy grade	C7			
Stroke length mm	50 to 1050			
Screw lead mm	5	10	16	20
Max. load capacity *1	Horizontal kg	110	88	48
	Vertical kg	33	22	10
Max. speed mm/s	250	500	800	1000
Rated thrust *1 N	1388	694	433	347
Repeatability mm	± 0.01			
Lost motion mm	0.1 or less			
Drive system weight kg	1.6			
Other inertia kg-cm ²	0.074			
Coefficient of friction	0.05			
Mechanical efficiency	0.8			
Ball screw length	Stroke + 200			
Dynamic allowable load N	6567			
Static allowable moment N-m	MP: 552, MY: 551, MR: 485			
Dynamic allowable moment N-m	MP: 262.7, MY: 262.7, MR: 261.0			
Operating ambient temperature, humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere	No corrosive gas, explosive gas, or dust			

*1 The rated thrust and max. load capacity values are the allowable values for the actuator body; the actual thrust and load capacity are limited by the motor used.

Stroke and max. speed

		(mm/s)					
Screw lead	Stroke length	100 to 750	800	850	900	950	1050
5		250	225	200	175	150	125
10		500	450	400	350	300	250
16		800	720	640	560	480	400
20		1000	900	800	700	600	500

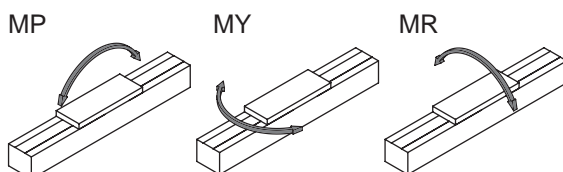
*The max. speed is the speed when the motor mounted by the customer can output a rotation speed of 3000 rpm.

The max. speed is restricted by the stroke. Do not move at speeds beyond the limit.

Allowable overhang length

*Refer to page 674 for details.

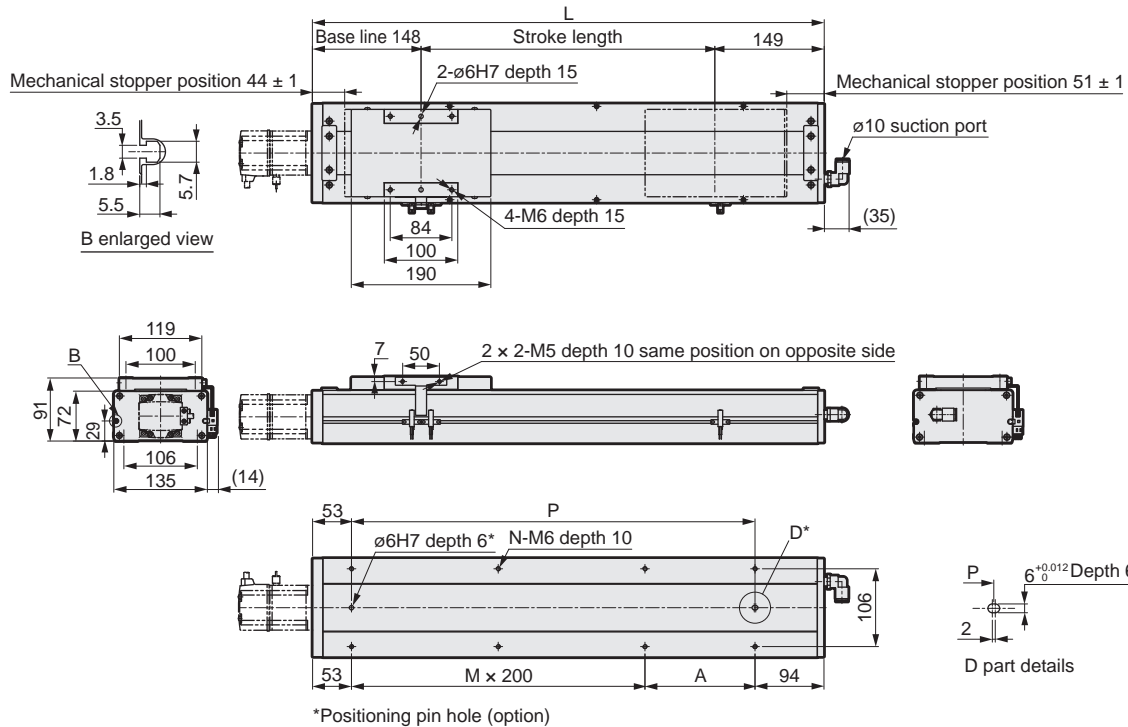
Moment direction



Dimensions Straight motor mounting

● ECS-14-****-E

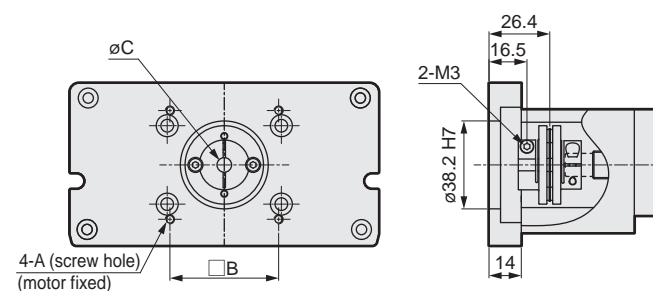
· Refer to page 680 for grease nipple dimensions.



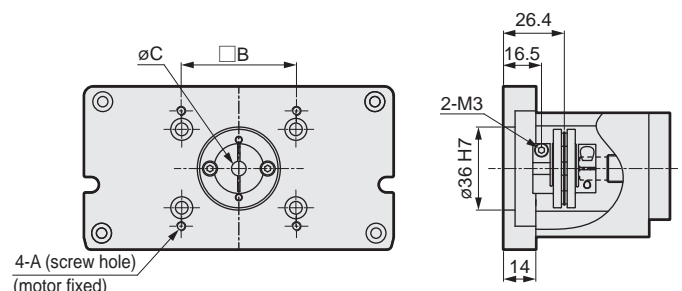
Stroke length (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	347	397	447	497	547	597	647	697	747	797	847	897	947	997	1047	1097	1147	1197	1247	1297	1347
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	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
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	10.5	11.1	11.7	12.3	12.9	13.5	14.1	14.7	15.3	15.9	16.5	17.1	17.7	18.3	18.9	19.5	20.1	20.7	21.3	21.9	22.5

Motor mounting part

● ECS-14-E (□ 56)



● ECS-14-E (□ 60)



Mounted motor specification		A	B	C	Motor mounting bolt
A	□60	M4 depth 14	50	10	4-M4 x L16
B	□56	M4 depth 14	47.14	6.35	4-M4 x L16
C	□56	M4 depth 14	47.14	8	4-M4 x L16

List of attachments

[Motor mounting parts]

Mounted motor specification	Coupling	Fitting	Motor size	Motor mounting bolt	
				Size	Quantity
A	Assembled at shipment	Included at shipment	<input type="checkbox"/> 56 <input type="checkbox"/> 60	M4	4
B				M4	4
C				M4	4

*Refer to page 682 for fitting details.

[Origin sensor/Limit sensor]

Manufacturer	Model	Quantity
OMRON Corporation	EE-SX672	3

*Refer to page 678 for sensor specifications.

Discontinued some variations

Electric actuator Ball screw drive Slider Low dust specification

ECS-14 Series

Motor side mounting (left, right, bottom)

● Stepper motor size: ☐56, ☐60



How to order

ECS - **14** - **05** **050** - **R** **A** **B** **N** **N** **N** **N** **P**

A Body size	B Screw lead	C Stroke length	D Motor mounting direction *5	E Mounted motor specification	F Motor size	G Brake	H Origin sensor (1 pc) *1 *2 *3	I Limit sensor (2 pcs) *1 *2 *3	J Grease nipple *3 *4 *5	K Positioning pin hole
14 Body width 135 mm	05 5 mm 10 10 mm 16 16 mm 20 20 mm	005 50 mm to (In 50 mm increments) 105 1050 mm	R Right mounting D Bottom mounting L Left mounting	A Select the mounted motor specification from the table below. B C	B <input type="checkbox"/> 56 C <input type="checkbox"/> 60	N None A Inside B Outside	N None A Inside motor side B Inside motor opposite side C Outside motor side D Outside motor opposite side	N None A Inside B Outside	N None (Body mounting direction: Standard) R Right L Counterclockwise	N None P Yes

- *1: Origin sensor and limit sensor are available as a set. As it is both-or-nothing, select "None" for both.
 *2: For sensor inside mounting, the user cannot adjust the position. (Assembled at shipment)
 For sensor outside mounting, the user can adjust the position. (Included at shipment)
 *3: Contact CKD to use the origin sensor, limit sensor and grease nipple in the same direction.
 *4: "Body mounting direction: Standard" here refers to mounting from the bottom side.
 *5: When selecting motor mounting direction R, grease nipple R cannot be selected.
 When selecting L, grease nipple L cannot be selected.

Manufacturer	<input type="checkbox"/> 56	<input type="checkbox"/> 60
Oriental Motor Co., Ltd.	-	A
MinebeaMitsumi Inc.	B	-
Dyadic Systems Co., Ltd.	C	-

*Refer to page 641 for the motor model No.

Specifications

Applicable motor sizes	<input type="checkbox"/> 56, <input type="checkbox"/> 60 stepper motor			
Drive method	Ball screw ϕ 16			
Ball screw accuracy grade	C7			
Stroke length mm	50 to 1050			
Screw lead mm	5	10	16	20
Max. load capacity *1	Horizontal kg	110	88	48
	Vertical kg	33	22	10
Max. speed mm/s		250	500	800
Rated thrust *1 N		1388	694	433
Repeatability mm	± 0.01			
Lost motion mm	0.1 or less			
Drive system weight kg	1.6			
Other inertia kg·cm ²	0.870			
Coefficient of friction	0.05			
Mechanical efficiency	0.8			
Ball screw length	Stroke + 200			
Dynamic allowable load N	6567			
Static allowable moment N·m	MP: 552, MY: 551, MR: 485			
Dynamic allowable moment N·m	MP: 262.7, MY: 262.7, MR: 261.0			
Operating ambient temperature, humidity	0 to 40°C (no freezing) 35 to 80% RH (no condensation)			
Storage ambient temperature, humidity	-10 to 50°C (no freezing) 35 to 80% RH (no condensation)			
Atmosphere	No corrosive gas, explosive gas, or dust			

*1 The rated thrust and max. load capacity values are the allowable values for the actuator body; the actual thrust and load capacity are limited by the motor used.

Stroke and max. speed

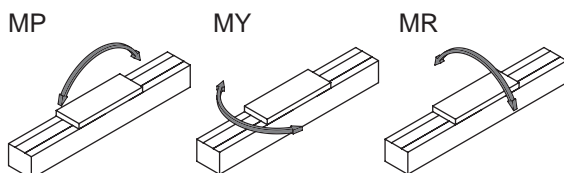
		(mm/s)					
Screw lead	Stroke length	100 to 750	800	850	900	950	1050
5		250	225	200	175	150	125
10		500	450	400	350	300	250
16		800	720	640	560	480	400
20		1000	900	800	700	600	500

*The max. speed is the speed when the motor mounted by the customer can output a rotation speed of 3000 rpm.
 The max. speed is restricted by the stroke. Do not move at speeds beyond the limit.

Allowable overhang length

*Refer to page 674 for details.

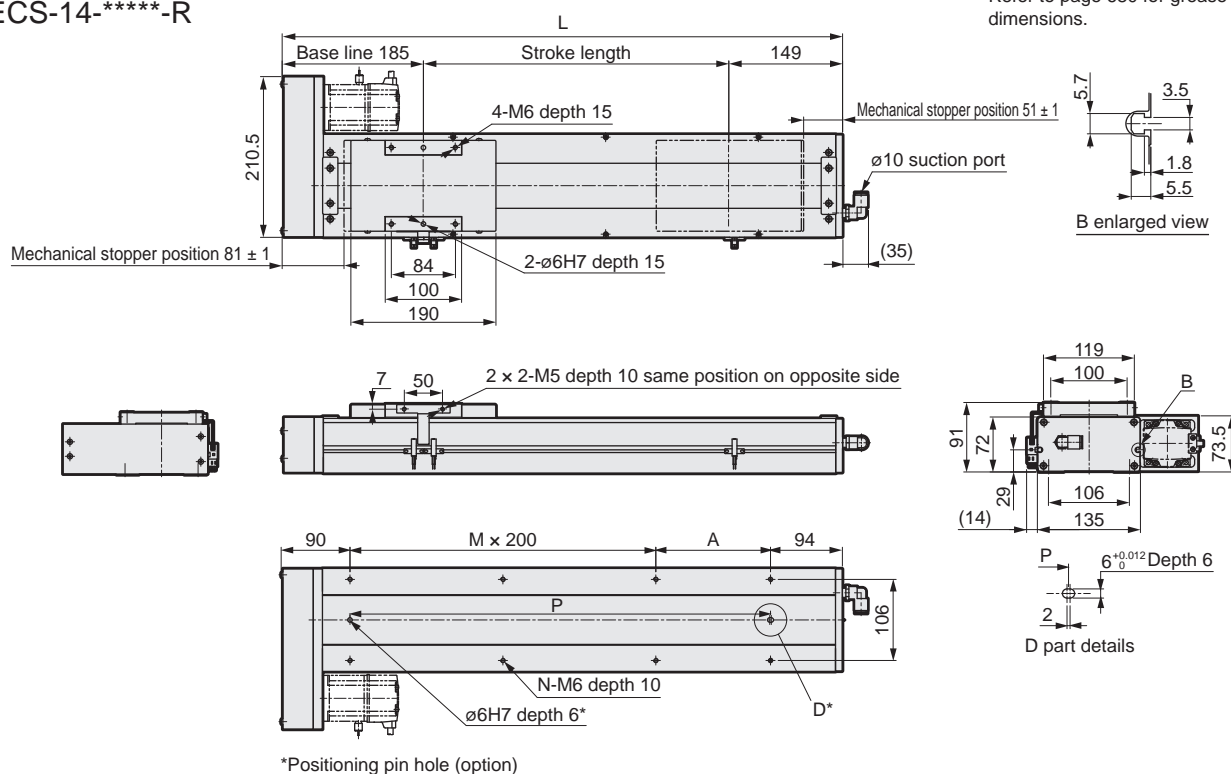
Moment direction



Dimensions Motor right-side mounting

● ECS-14-*****-R

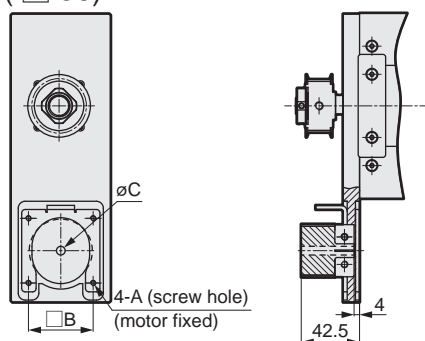
Refer to page 680 for grease nipple dimensions.



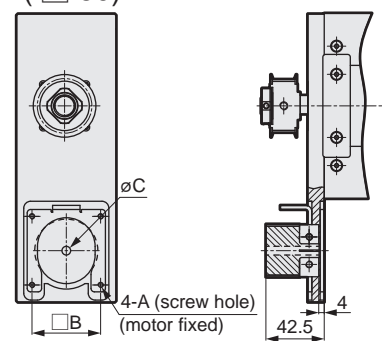
Stroke length (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	384	434	484	534	584	634	684	734	784	834	884	934	984	1034	1084	1134	1184	1234	1284	1334	1384
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	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
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor mounting part

● ECS-14-R (□ 56)



● ECS-14-R (□ 60)



Mounted motor specification		A	B	C	Motor mounting bolt
A	□ 60	M4	50	10	4-M4 x L20
B	□ 56	M4	47.14	6.35	4-M4 x L20
C	□ 56	M4	47.14	8	4-M4 x L20

List of attachments

[Motor mounting parts]

Mounted motor specification	Timing belt, pulley	Fitting	Motor size	Motor mounting bolt	
				Size	Quantity
A	Included at shipment	Included at shipment	<input type="checkbox"/> 56 <input type="checkbox"/> 60	M4	4
B				M4	4
C				M4	4

*Refer to page 682 for fitting details.

[Origin sensor/Limit sensor]

Manufacturer	Model	Quantity
OMRON Corporation	EE-SX672	3

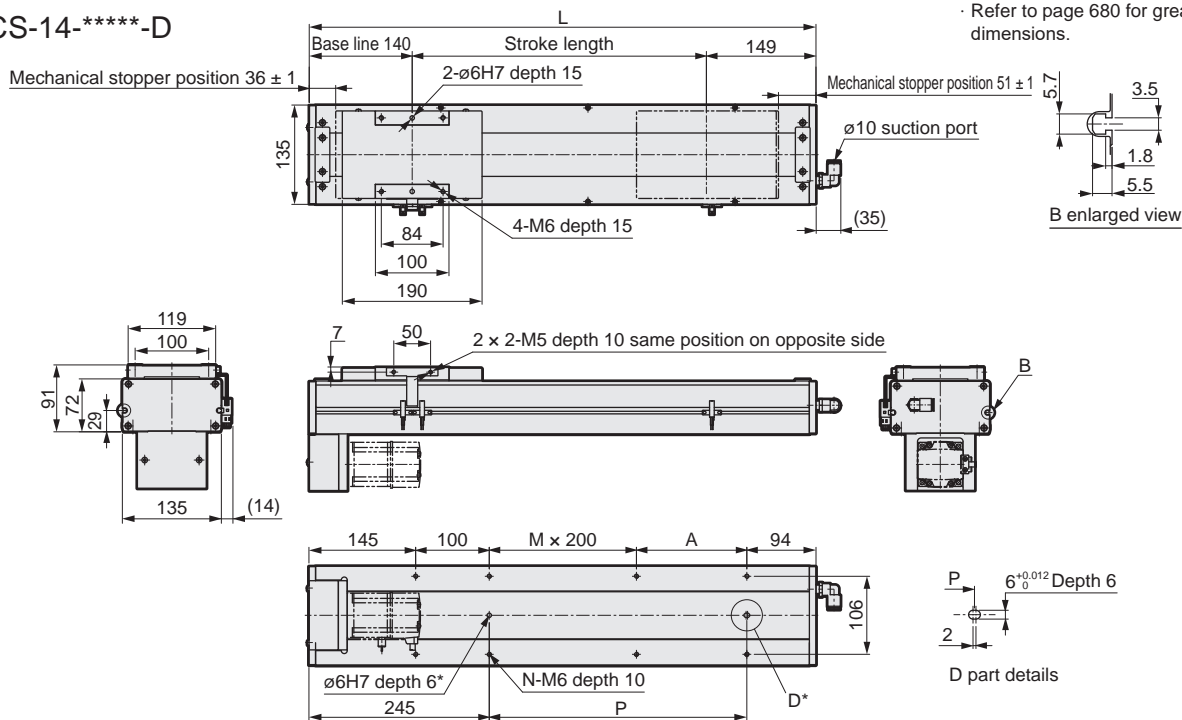
*Refer to page 678 for sensor specifications.

Discontinued some variations

ECS-14 Series

Dimensions Motor bottom mounting

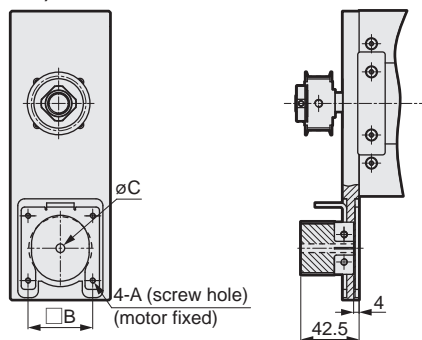
● ECS-14-*****-D



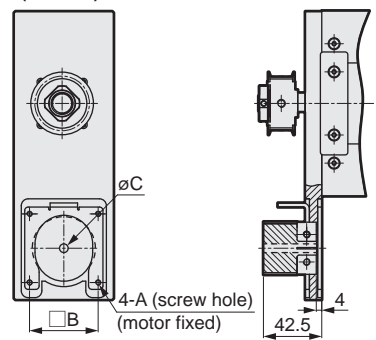
Stroke length (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	339	389	439	489	539	589	639	689	739	789	839	889	939	989	1039	1089	1139	1189	1239	1289	1339
A	0	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
P	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor mounting part

● ECS-14-D (□ 56)



● ECS-14-D (□ 60)



Mounted motor specification		A	B	C	Motor mounting bolt
A	□ 60	M4	50	10	4-M4 × L20
B	□ 56	M4	47.14	6.35	4-M4 × L20
C	□ 56	M4	47.14	8	4-M4 × L20

List of attachments

[Motor mounting parts]

Mounted motor specification	Timing belt, pulley	Fitting	Motor size	Motor mounting bolt	
				Size	Quantity
A	Included at shipment	Included at shipment	□ 56	M4	4
B			□ 60	M4	4
C				M4	4

*Refer to page 682 for fitting details.

[Origin sensor/Limit sensor]

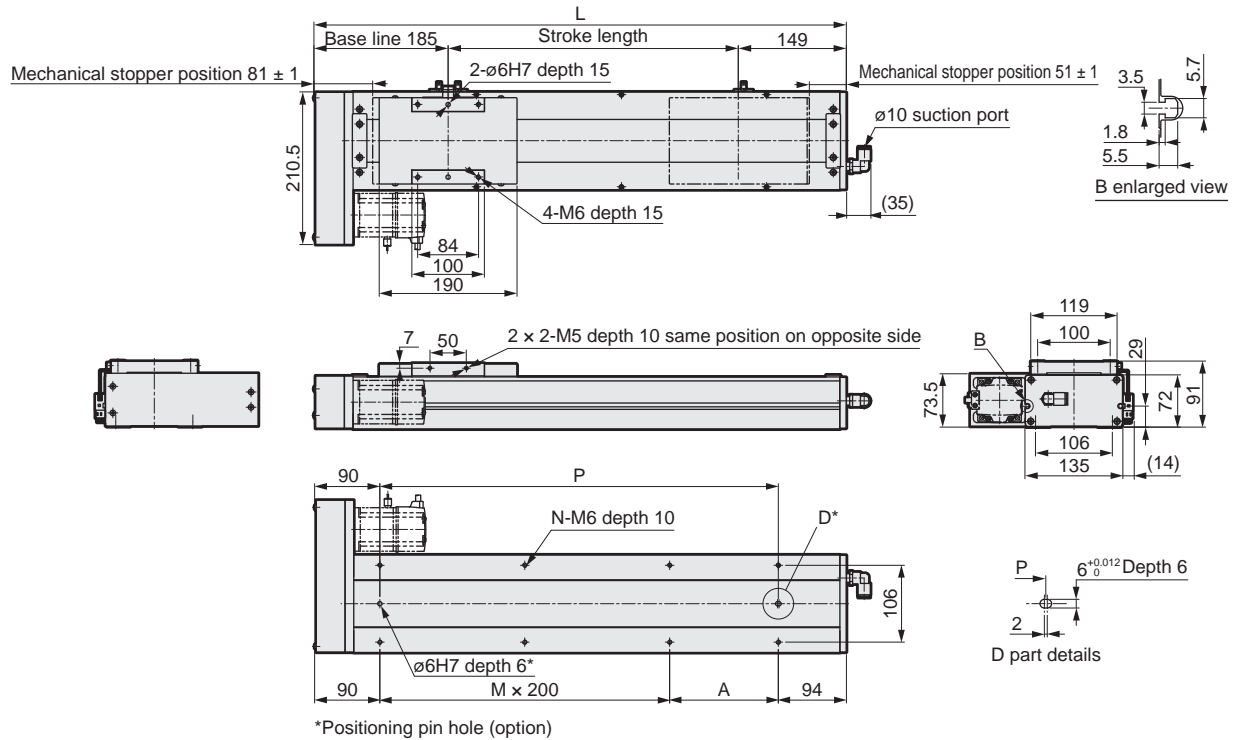
Manufacturer	Model	Quantity
OMRON Corporation	EE-SX672	3

*Refer to page 678 for sensor specifications.

Dimensions Motor left-side mounting

● ECS-14-****-L

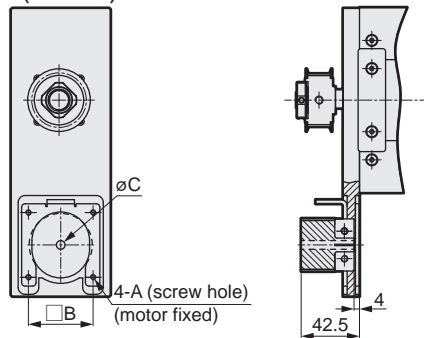
Refer to page 680 for grease nipple dimensions.



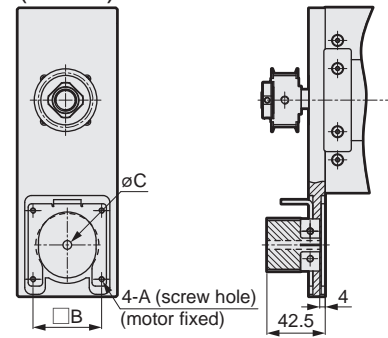
Stroke length (mm)	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	384	434	484	534	584	634	684	734	784	834	884	934	984	1034	1084	1134	1184	1234	1284	1334	1384
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	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
P	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Weight (kg)	11.0	11.6	12.2	12.8	13.4	14.0	14.7	15.3	15.9	16.5	17.1	17.8	18.4	19.0	19.6	20.2	20.9	21.5	22.1	22.7	23.3

Motor mounting part

● ECS-14-L (□ 56)



● ECS-14-L (□ 60)



Mounted motor specification		A	B	C	Motor mounting bolt
A	□60	M4	50	10	4-M4 x L20
B	□56	M4	47.14	6.35	4-M4 x L20
C	□56	M4	47.14	8	4-M4 x L20

List of attachments

[Motor mounting parts]

Mounted motor specification	Timing belt, pulley	Fitting	Motor size	Motor mounting bolt	
				Size	Quantity
A	Included at shipment	Included at shipment	<input type="checkbox"/> 56 <input type="checkbox"/> 60	M4	4
B				M4	4
C				M4	4

*Refer to page 682 for fitting details.

[Origin sensor/Limit sensor]

Manufacturer	Model	Quantity
OMRON Corporation	EE-SX672	3

*Refer to page 678 for sensor specifications.

Model selection

STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead and motor performance.

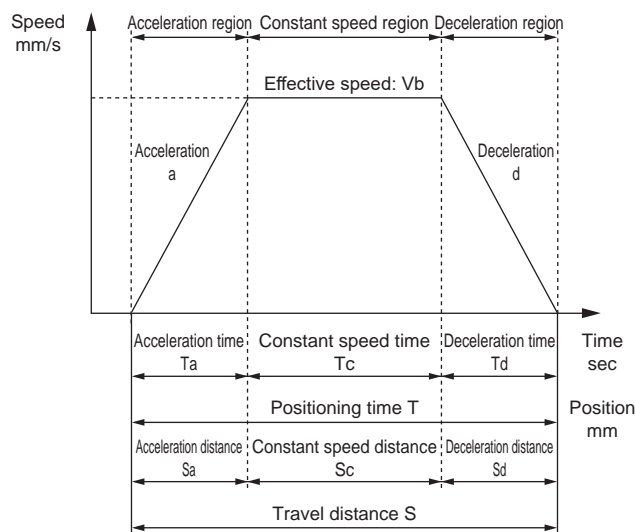
Refer to the selection table (page 638) and the specification table for each model to select the size and screw lead.

For motor performance, contact the motor manufacturer. For motor selection, use the actuator information (mechanical efficiency, etc.) in the specifications.

STEP 2 Confirming positioning time

Calculate the positioning time of the selected product according to the following example and confirm that the required tact is achievable.

Select the speed and acceleration/deceleration from the specification table for each model and the motor selected by the customer.



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s ²	
	Set deceleration	d	mm/s ²	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= \{2 \times a \times d \times S / (a + d)\}^{1/2}$
	Effective speed	Vb	mm/s	Smaller of V and Vmax
	Acceleration time	Ta	s	$= Vb/a$ [0.2 sec or more]
	Deceleration time	Td	s	$= Vb/d$ [0.2 sec or more]
	Constant speed time	Tc	s	$= Sc/Vb$
	Acceleration distance	Sa	mm	$= (a \times Ta^2)/2$
	Deceleration distance	Sd	mm	$= (d \times Td^2)/2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd)$
	Positioning time	T	s	$= Ta + Tc + Td$

*Do not use at speeds that exceed the specifications.

*The acceleration and deceleration settings related to the acceleration time and deceleration time change depending on the set speed and stroke.

*Depending on acceleration/deceleration and stroke length, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.

*Use with acceleration time/deceleration time of 0.2 sec or longer.

*1 G \approx 9.8 m/s².

*Set the speed and acceleration/deceleration by the motor selected by the customer. For motor selection and calculation of speed and acceleration/deceleration, use the actuator information (mechanical efficiency, etc.) in the specifications.

STEP 3 Confirming allowable overhang length

Make sure that the load overhang length during operation is within the allowable range (pages 674 to 676).

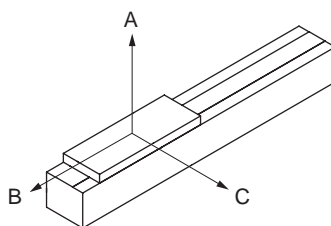
Contact CKD for selection details.

MEMO

Servo motor compatible							Stepper motor compatible					Safety precautions
EBS	EBR	ETS	ETS Multi-Axis	ECS	ETV	ECV	EKS	EBS	EBR	ETS	ECS	

Allowable overhang length (ECS Series)

[When installed horizontally]



[Allowable overhang length]

● ECS-05

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	2	5	750	45	105
			10	350	20	47
		5	4	480	45	105
			7	300	25	55
		10	3	300	55	110
			5	180	30	65

● ECS-06

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	2	10	400	65	150
			30	150	15	40
		5	10	520	50	110
			30	130	10	25
		10	3	800	145	330
			8	280	50	120
			15	140	23	55

● ECS-10

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	30	560	50	50
			50	310	27	27
		10	15	440	90	90
			25	250	50	50
			30	200	40	40
		16	5	950	270	230
			10	480	130	110
			22	200	55	45
		20	5	750	250	200
			10	370	120	95
			15	240	80	60

● ECS-12

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	30	900	70	80
			50	420	30	40
		10	15	900	150	160
			25	490	80	85
			30	400	60	70
		16	5	1700	430	450
			10	800	200	220
			22	330	80	85
		20	5	1200	420	400
			10	580	200	190
			15	370	120	120

● ECS-14

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	60	2300	250	240
			80	1600	180	170
			95	1150	145	140
		10	30	2000	500	450
			50	1400	280	250
			75	1000	170	160
		16	10	2200	1200	1000
			20	1600	600	500
			44	800	260	220
		20	10	2300	1200	1000
			20	1400	600	500
			35	1000	330	290

*The above values are the allowable values for the actuator body; the actual load capacity is limited by the motor used.

*When suspending from above, use 1/3 of the dynamic allowable load, dynamic allowable moment, and overhang length. Use overhang length up to the center of gravity of the load within A, B and C directions.

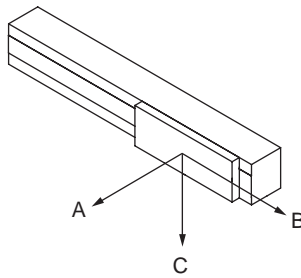
Discontinued some variations

Sales of ECS-05 to ECS-12 will be terminated.

ECS Series
Technical data

Allowable overhang length (ECS Series)

[When wall-mounted]



[Allowable overhang length]

● ECS-05

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	2	5	105	45	750
			10	47	20	350
		5	4	100	45	450
			7	55	23	240
		10	3	110	55	400
			5	60	30	230

● ECS-06

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	2	15	110	42	400
			30	45	15	180
		5	5	240	95	1150
			10	115	50	540
			30	25	10	140
		10	3	320	150	700
			8	110	50	250
			15	50	25	120

● ECS-10

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	10	160	160	1400
			20	75	75	650
			30	45	45	400
		10	10	130	140	690
			20	60	65	330
			30	40	40	210
		16	5	230	250	750
			10	110	120	370
			22	45	50	160
		20	5	220	250	650
			10	105	120	320
			15	65	75	210

● ECS-12

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	10	330	270	2200
			20	145	120	1000
			30	90	70	600
		10	10	260	240	850
			20	115	110	520
			30	70	60	300
		16	5	450	450	1300
			10	210	210	600
			22	80	80	240
		20	5	410	410	1200
			10	190	195	600
			15	120	120	390

● ECS-14

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm		
				A	B	C
Straight / side/bottom	0.2	5	60	240	250	1600
			80	170	180	1200
			95	140	145	1050
		10	30	420	460	1500
			50	240	250	1000
			75	150	160	700
		16	10	1050	1200	2650
			20	500	620	1450
			44	230	270	800
		20	10	1000	1200	1900
			20	500	600	1000
			35	270	300	600

*The above values are the allowable values for the actuator body; the actual load capacity is limited by the motor used.

*When suspending from above, use 1/3 of the dynamic allowable load, dynamic allowable moment, and overhang length.
Use overhang length up to the center of gravity of the load within A, B and C directions.

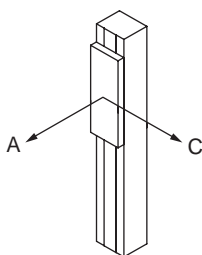
EBS
EBR
ETS
ETS Multi-Axis
ECS
ETV
ECV
EKS

Stepper motor compatible
EBS
EBR
ETS
ECS

Safety
precautions

Allowable overhang length (ECS Series)

[When installed vertically]



[Allowable overhang length]

● ECS-05

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm	
				A	C
Straight / side/bottom	0.2	2	3	80	80
			7	35	35
		5	3	65	65
		10	1.5	120	120

● ECS-06

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm	
				A	C
Straight / side/bottom	0.2	2	5	160	160
			15	53	53
		5	2	300	300
			4	150	150
			10	60	60
			1	410	410
		10	2	205	205
			5	82	82

● ECS-10

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm	
				A	C
Straight / side/bottom	0.2	5	5	310	310
			10	155	155
			12	130	130
		10	4	360	360
			6	240	240
			8	180	180
		16	1	1050	1050
			2	525	525
			5	210	210
		20	1	850	850
			2	425	425
			3	283	283

● ECS-12

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm	
				A	C
Straight / side/bottom	0.2	5	5	600	600
			10	300	300
			12	250	250
		10	4	650	650
			6	430	430
			8	320	320
		16	1	1050	1050
			2	525	525
			5	210	210
		20	3	650	700

● ECS-14

Motor mounted	Acceleration/deceleration time sec	Screw lead	Weight kg	Overhang mm	
				A	C
Straight / side/bottom	0.2	5	20	755	755
			25	605	605
			27	560	560
		10	10	1350	1350
			15	900	900
			18	750	750
		16	2	2400	2400
			4	1700	1700
			7	1300	1300
		20	6	1200	1200

*The above values are the allowable values for the actuator body; the actual load capacity is limited by the motor used.

*When suspending from above, use 1/3 of the dynamic allowable load, dynamic allowable moment, and overhang length.
Use overhang length up to the center of gravity of the load within A, B and C directions.

MEMO

Servo motor compatible								Stepper motor compatible				Safety precautions
EBS	EBR	ETS	ETS Multi-Axis	ECS	ETV	ECV	EKS	EBS	EBR	ETS	ECS	

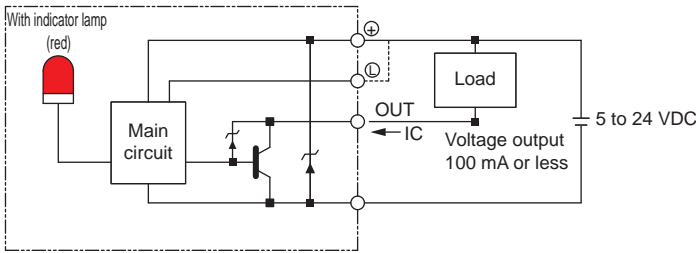
Origin sensor, limit sensor

	Manufacturer	Model
External mounted sensor	OMRON Corporation	EE-SX672
Internal mounted sensor	OMRON Corporation	EE-SX674

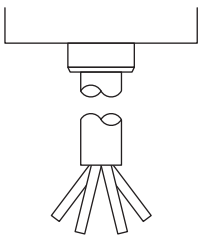
Performance

Item	Specifications
Hysteresis	0.025 mm or less
Light source (peak emission wavelength)	GaAs infrared LED (940 nm)
Indicator lamp	ON when receiving light (red)
Power supply voltage	5 to 24 VDC \pm 10% ripple (P-P) 10% or less
Current consumption	35 mA or less (NPN)
Control output	NPN: NPN open collector output 5 to 24 VDC 100 mA or less OFF state current 0.5 mA or less Residual voltage 0.8 V or less (at load current 100 mA) Residual voltage 0.4 V or less (at load current 40 mA)
Operating ambient illumination	Light-receiving surface luminance Fluorescent light: 1,000 lx or less
Ambient temperature range	When operating: -25 to +55°C When stored: -30 to +80°C (no condensation or freezing)
Ambient humidity range	When operating: 5 to 85% RH When stored: 5 to 95% RH (no condensation or freezing)
Degree of protection	IP50 IEC 60529 Standards
Cord length	2 m (Connector with cord [EE-1006 2M])

Output circuit



Wiring diagram



Terminal layout

Brown	5 to 24 VDC
Pink	L
Blue	0 V
Black	OUTPUT

Discontinued some variations

Sales of ECS-05 to ECS-12 will be terminated.

ECS Series
Technical data

Sensor dog dimensions

Motor mounting direction	
Body size	E/D/R/L
ECS-05	Fig. 1
ECS-06	Fig. 2

Fig. 1

Fig. 2

Motor mounting direction					
Body size	E/D	R		L	
		Grease nipple None	Grease nipple Yes	Grease nipple None	Grease nipple Yes
ECS-10	Fig. 3	Fig. 3		Fig. 3	
ECS-12	Fig. 3	Fig. 3	Fig. 4	Fig. 3	Fig. 5

Motor mounting direction					
Body size	E/D	R		L	
		Grease nipple None	Grease nipple Yes	Grease nipple None	Grease nipple Yes
ECS-14	Fig. 6	Fig. 6	Fig. 7	Fig. 6	Fig. 7

Fig. 3

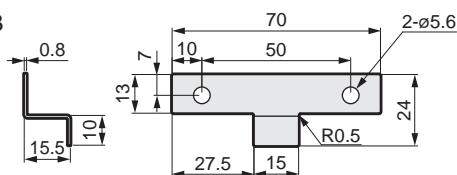


Fig. 4

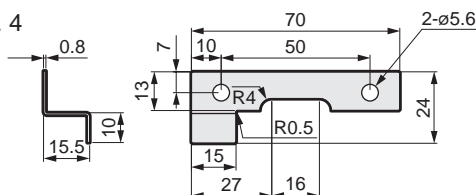


Fig. 5

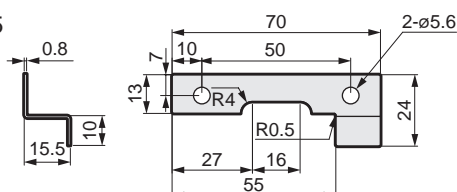


Fig. 6

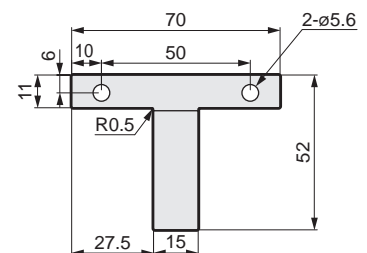
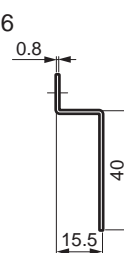
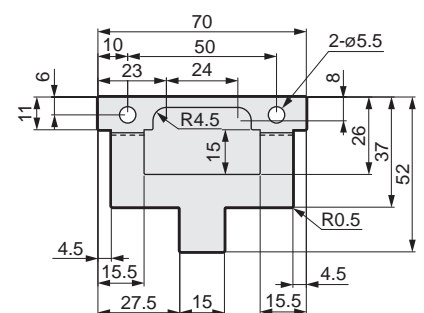
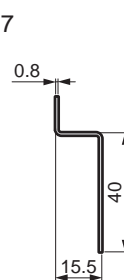


Fig. 7



EBS
EBR
ETS
ETS Multi-Axis
ECS
ETV
ECV
EKS

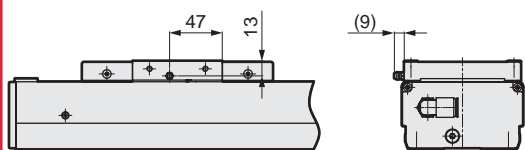
Stepper motor compatible

Safety
precautions

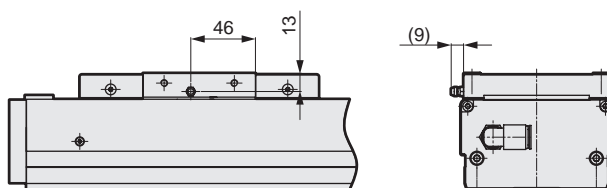
Grease nipple dimensions

*Horizontally symmetrical against the actuator.

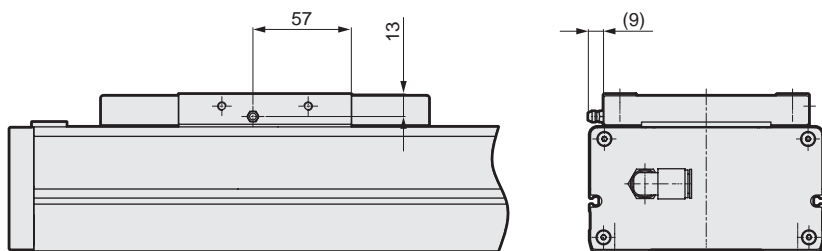
● ECS-10



● ECS-12



● ECS-14



Servo motor compatible

Stepper motor compatible

Safety precautions

Discontinued some variations

ECS Series

Grease nipple dimensions

MEMO

Servo motor compatible							Stepper motor compatible					Safety precautions
EBS	EBR	ETS	ETS Multi-Axis	ECS	ETV	ECV	EKS	EBS	EBR	ETS	ECS	

List of attachments

Basic

Motor mounting bolt (common motor mounting direction)

Model No.	Mounted motor specification	Motor size	Size	Quantity
ECS-05	A	□42	M3	4
ECS-06	B		M3	4
ECS-10	A	□56 □60	M4	4
ECS-12	B		M4	4
ECS-14	C		M4	4

By motor mounting direction

Model No.	Attachment name	Included quantity
E (external direct mounting)	Coupling (Assembled at shipment)	1
R (right-side mounting) L (left-side mounting)	Timing belt	1
D (bottom mounting)	Pulley	1

When origin/limit sensor is selected *1

Sensor mounting direction	Shipping format	Quantity
Inner sensor	Fixed position assembled at shipment	3 *2
Outer sensor	Included at shipment *3	

*1 Shipping format varies according to whether origin sensor and limit sensor are assembled inside or outside.

*2 When "None" is selected for origin sensor or limit sensor, the other sensor is also "None".

*3 Sensor mounting screws are also included.

Suction port fitting

Model No.	Fitting model No.	Shipping format	Quantity
ECS-05/ECS-06	GWL6-M5	Assembled at shipment	2
ECS-10 to ECS-14	GWL10-8	Included at shipment	1

Maintenance parts

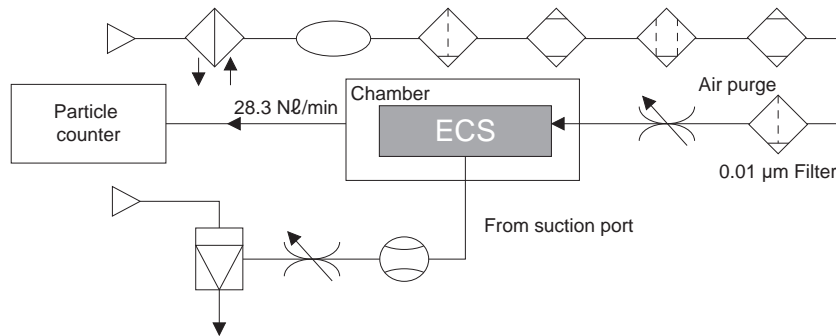
● Maintenance parts (external mounted sensor)

Basic price model No.	Compatibility	Part
		
ETS-22008-000001	All models	Body
ETS-22008-000006		Cable

Servo motor compatible							
EBS	EBR	ETS	ETS Multi-Axis	ECS	ETV	ECV	EKS
Stepper motor compatible							
EBS	EBR	ETS	ECS				

Dust generation characteristics Reference data

Test circuit



Measuring method

- (1) Set a test sample in the acrylic resin chamber.
- (2) Supply clean air at the same flow rate as the particle counter intake rate (28.3 Nℓ/min).
- (3) Place the chamber in an ISO class 4 (class 10) clean bench.
- (4) Activate the test sample, and measure changes in particle concentration over time during the specified measurement time.
- (5) Test sample operating speed

Measuring conditions

Item		Description
Test sample	Model No.	Operating speed 400 mm/sec for ECS-06-10040 Operating speed 800 mm/sec for ECS-14-20040
	Acceleration/deceleration time	0.3 sec
	Air intake	40.0 Nℓ/min for ECS-06-10040
		60.0 Nℓ/min for ECS-14-20040
Chamber	Internal capacity	28.3 Nℓ
Particle counter	Name	Laser dust monitor
	Min. measurable particle diameter	0.1 μm
	Intake	28.3 Nℓ/min
Setting conditions	Sampling	10 min
	Interval	40 min
	Measurement time	50 h

Dust generation data

The values in the data are measured values under the above conditions, and are not guaranteed.

