

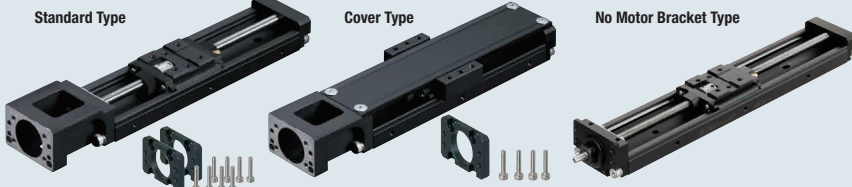
Single Axis Actuator LX20

Standard / Cover Type



Linear Actuators

Misumi Patent



RoHS10

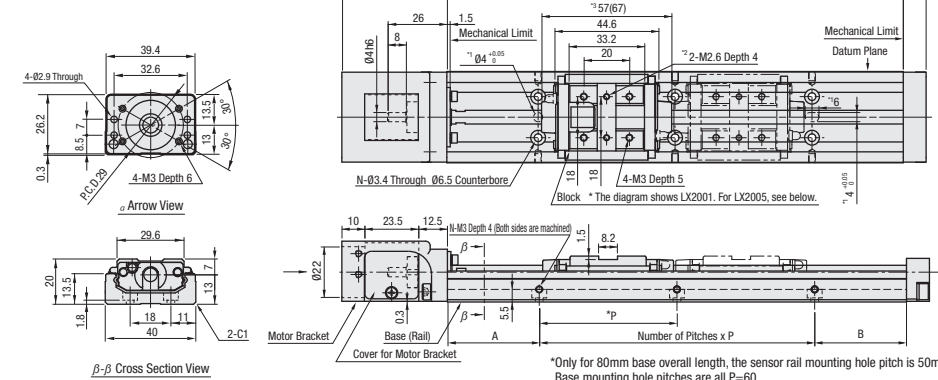
Specifications	
LX20	
Cover	
Screw Shaft Diameter (mm)	6
Lead (mm)	1, 5
Accuracy	High Grade / Precision Grade
Accessory	
(1) Motor Adapter Plate	
Material: 5052 Aluminum Alloy Surface Treatment: Black Anodize	
(2) Adapter Plate Screw 4 pcs. Material: Stainless Steel XM7	
⊖ No accessory is included for No Motor Bracket Type.	

Part Number	Standard Grease		Low Particulate Generation Grease		Lubrication Unit MX-Equipped (Standard Grease)	
	High Grade	Precision Grade	High Grade	Precision Grade	High Grade	Precision Grade
Lead 1	LX2001 (C)	LX2001 (C) P	LX2001 (C) G	LX2001 (C) PG	LX2001 (C) -MX	LX2001 (C) P-MX
Lead 5	LX2005 (C)	LX2005 (C) P	LX2005 (C) G	LX2005 (C) PG	LX2005 (C) -MX	LX2005 (C) P-MX

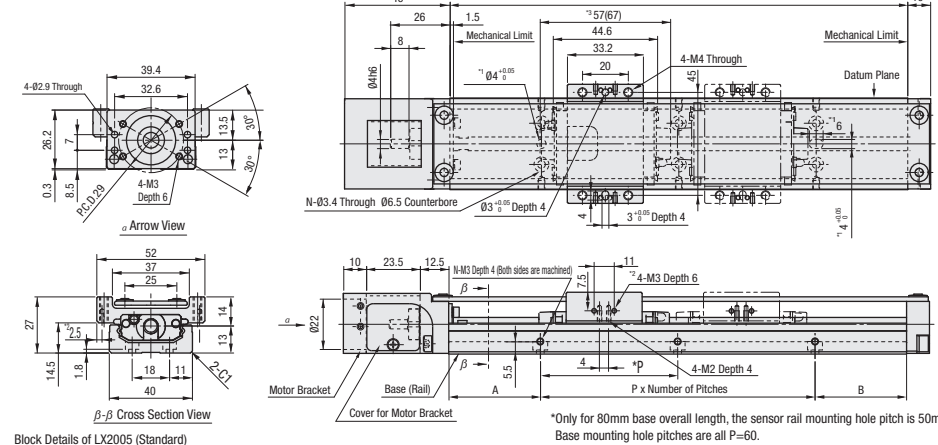
⊖ (C) is for Cover Type. ⊖ Low Dust Generation Grease Information P.523. ⊖ Lubrication Unit MX Information P.519.

Components	Base (Rail)	Block	Motor Bracket	Support-Side Bearing Housing	Cover	Stopper	Precision Ball Screw (ground)
Material	Carbon Steel	SCM Material	ADC12	5052 Aluminum Alloy	6063 Aluminum Alloy	NBR	SCM415 Alloy Steel (JIS)
Surface Treatment	Low Temperature Black Chrome Plating	Low Temperature Black Chrome Plating	Black Baked Paint Finish	Black Anodize	Black Anodize	—	—
Hardness	Induction Hardened 58-64 HRC	58-62 HRC	—	—	—	—	58-62 HRC

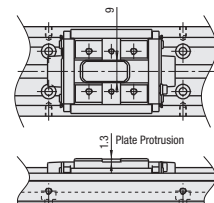
Standard Type



Cover Type



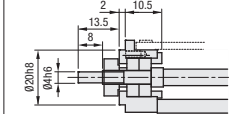
Block Details of LX2005 (Standard)



- *1: Dowel Holes for Base Positioning
- *2: Tapped Holes for Sensor Flag Mount
- *3: Value in () is for Lubrication Unit MX-equipped Type.

No Motor Bracket Type

*For details of the mounting parts, P.528.



⊖ Effective stroke is the value with 2.5 mm margin on each side from mechanical limits, 5 mm in total. ⊖ For Double Block Type, effective strokes are the values when two blocks in contact with each other.
⊖ For Double Block Type, double-dashed lined blocks are not connected with the ball screw ⊖ Accuracy standard values are the values achieved after fixing rails, not before tightening the rail screws. For values, see P.522.

Single Axis Actuator LX20

Standard / Cover Type, continued



Linear Actuators

For Single Axis Actuator LX Series selections, please use our free 2D and 3D CAD data and Technical Calculation Software.
<http://www.misumiusa.com/lx-actuator/>

LX Related Information
Specifications P.518-523
Selection & Life Calculation Example P.3952-3955

Part Number	Block Qty.	Motor Attachments ¹	Base Overall Length (L)	Effective Stroke			Total Mass (kg)		Mounting Hole Dimensions				
				B ₁	B ₂	MX-Equipped (B ₁)	B ₁	B ₂	A	P	B	Number of Pitches	Number of Holes (N)
Standard Grease LX2001 (C) LX2005 (C)	1 Pc. B1	Servo Motors A2025 A2028 A2038 A2040 E2040	80 Lead 1 only	16.5	—	—	0.51	—	10	60	10	1	4
Low Dust Generation Grease LX2001 (C) -MX LX2005 (C) G				36.5	—	—	0.56	—	20		20		
Low Particulate Generation Grease LX2001 (C) PG LX2005 (C) PG	2 Pcs. B2	Stepper Motors T2028 T2042 T2056.4	150 Lead 5 only	86.5	—	76.5	0.69	—	15	60	15	2	6
Lubrication Unit MX-Equipped, Standard Grease LX2001 (C) -MX LX2005 (C) -MX				136.5	79.5	126.5	0.81	0.97	40		40		
			250 Lead 5 only	186.5	129.5	176.5	0.94	1.10	35		35	3	8
			300 Lead 5 only	236.5	179.5	226.5	1.07	1.23	30		30	4	10

* Precision Certificate is enclosed with precision grade products. ⊖ For Max. Velocity, P.522.
* Motor adapter plate and mounting screws are not included with No Adapter Plate Type. ⊖ For Moment of Inertia, P.521.
* Effective stroke is indicated in dimensions with a margin of 2.5 mm each from the ends. ⊖ 0.004kg will be added to MX-Equipped types.
* (C) is for Cover Type.

Accuracy Standards

Accuracy Standards	High Grade	Precision Grade
Positioning Accuracy (mm)	0.06	0.02
Backlash (mm)	0.01	0.003
Positioning Repeatability (mm)	±0.005	±0.003
Running Parallelism (mm)	0.025	0.01
Starting Torque (N·cm)	1.2	1.2

Moment of Inertia

Base Length (L)	Moment of Inertia (kg·cm ²)			
	LX2001C		LX2005C	
	Single Block	Double Blocks	Single Block	Double Blocks
80	0.0047	—	—	—
100	0.0049	—	0.0059	—
150	0.0053	—	0.0063	—
200	0.0058	0.0058	0.0068	0.0078
250	—	—	0.0073	0.0083
300	—	—	0.0077	0.0088

Mass

Base Length (L)	Total Mass (kg)	
	Single Block	Double Blocks
80	0.51	—
100	0.56	—
150	0.69	—
200	0.81	0.97
250	0.94	1.10
300	1.07	1.23

Maximum Velocity

Base Length (L)	Part Number	
	LX2001C	LX2005C
80	190	—
100	190	694
150	190	694
200	190	694
250	—	694
300	—	633

Servo Motor Application Table

Part Number	Flange Size	Manufacturer	Wattage
A2025	25 Sq.	Yasukawa/ Mitsubishi Electric Corporation	10W/20W/30W
A2028	28 Sq.	Mitsubishi Electric Corporation	
A2038	38 Sq.	Panasonic	30W/50W/100W
E2040	40 Sq.	SIEMENS	50W/100W
A2040		Yasukawa Electric Corporation	50W
		Mitsubishi Electric Corporation	
		Keyence Corporation	
		Omron Corporation	
		Sanyo Denki Co., Ltd.	30W/50W

⊖ Reference values are for a static state. For life calculation, use our technical calculation software.
⊖ For description of allowable static moment, please see P.520.

Stepping Motor Application Table

Part Number	Flange Size	Manufacturer	Wattage
T2028	28 Sq.	Oriental Motor	2-phase / 5-phase / α-Step
T2042	42 Sq.		
T2056.4	56.4 Sq.	4 NEMA standards	—

⊖ NEMA standards are a set of standards stipulated by National Electrical Manufacturers Association of United States.
⊖ For details on supported motor types and detailed diagram of Motor Adapter Plates, see P.528.

Part Number Example

Part Number	Block Qty.	Motor Adapter Plates	Base Overall Length (L)
LX2001C	B1	A2025	200
LX2005-MX	B1	A2028	150

Single Actuator LX20

Motor Adapter Plates / Motor Adapter Centering Tools



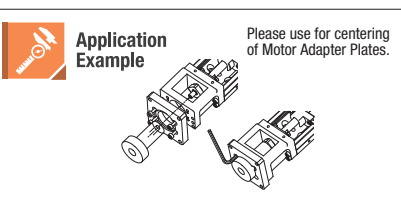
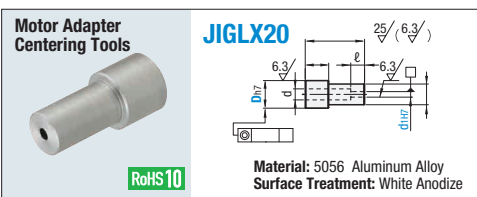
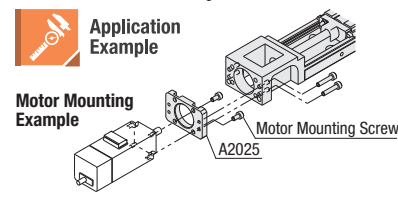
Note: the Motor Adapter protrudes beyond the rail at * marked area

A2025 Servo 25 Sq.	A2028 Servo 28 Sq.																																																																				
A2038 Servo 38 Sq.	A2040 Servo 40 Sq.																																																																				
E2040 Servo 40 Sq.	T2042 Stepping 42 Sq.																																																																				
T2028 Stepper 28 Sq.	T2056.4 Stepping 56.4 Sq. NEMA 23																																																																				
F No Motor Bracket Type	Servo Motor Application Table <table border="1"> <thead> <tr> <th>Part Number</th> <th>Flange Size</th> <th>Manufacturer</th> <th>Product Number</th> <th>Wattage</th> <th>Recommended Coupling</th> </tr> </thead> <tbody> <tr> <td rowspan="3">A2025</td> <td rowspan="3">25 Sq.</td> <td rowspan="3">Yasukawa Electric Corporation</td> <td>SGMMJ-A1</td> <td>10W</td> <td rowspan="3">SCPW16 (P.1094)</td> </tr> <tr> <td>SGMMJ-A2</td> <td>20W</td> </tr> <tr> <td>SGMMJ-A3</td> <td>30W</td> </tr> <tr> <td rowspan="3">A2028</td> <td rowspan="3">28 Sq.</td> <td rowspan="3">Mitsubishi Electric Corporation</td> <td>HG-AK013</td> <td>10W</td> <td rowspan="3">SCPW16 (P.1094)</td> </tr> <tr> <td>HG-AK023</td> <td>20W</td> </tr> <tr> <td>HG-AK033</td> <td>30W</td> </tr> <tr> <td rowspan="5">A2038</td> <td rowspan="5">38 Sq.</td> <td rowspan="5">Panasonic</td> <td>MSMD5A</td> <td>50W</td> <td rowspan="5">CPDT19 (P.1096)</td> </tr> <tr> <td>MSME6A</td> <td>50W</td> </tr> <tr> <td>MSMD1*</td> <td>100W</td> </tr> <tr> <td>MSME1*</td> <td>100W</td> </tr> <tr> <td>MSME1*</td> <td>100W</td> </tr> <tr> <td rowspan="8">A2040</td> <td rowspan="8">40 Sq.</td> <td rowspan="3">Yasukawa Electric Corporation</td> <td>SGMJV-A5</td> <td rowspan="8">50W</td> <td rowspan="8">SCPW16 (P.1094)</td> </tr> <tr> <td>SGMAH-A5</td> </tr> <tr> <td>SGMAS-A5</td> </tr> <tr> <td rowspan="2">Mitsubishi Electric Corporation</td> <td>HG-MR053</td> </tr> <tr> <td>HG-KR053</td> </tr> <tr> <td rowspan="3">Sanyo Denki Co., Ltd.</td> <td>Q1AA04003D</td> </tr> <tr> <td>Q1AA04005D</td> </tr> <tr> <td>Q1AA04005D</td> </tr> <tr> <td rowspan="2">Omron Corporation</td> <td>R88M-K05030</td> </tr> <tr> <td>R88M-K05030</td> </tr> <tr> <td rowspan="2">Keyence Corporation</td> <td>MV-M05</td> </tr> <tr> <td>SV-M005</td> </tr> <tr> <td rowspan="2">E2040</td> <td rowspan="2">40 Sq.</td> <td rowspan="2">SIEMENS</td> <td>1FK7011-5</td> <td rowspan="2">100W</td> <td rowspan="2">CPDW19 (P.1096)</td> </tr> <tr> <td>1FK7015-5</td> </tr> </tbody> </table>	Part Number	Flange Size	Manufacturer	Product Number	Wattage	Recommended Coupling	A2025	25 Sq.	Yasukawa Electric Corporation	SGMMJ-A1	10W	SCPW16 (P.1094)	SGMMJ-A2	20W	SGMMJ-A3	30W	A2028	28 Sq.	Mitsubishi Electric Corporation	HG-AK013	10W	SCPW16 (P.1094)	HG-AK023	20W	HG-AK033	30W	A2038	38 Sq.	Panasonic	MSMD5A	50W	CPDT19 (P.1096)	MSME6A	50W	MSMD1*	100W	MSME1*	100W	MSME1*	100W	A2040	40 Sq.	Yasukawa Electric Corporation	SGMJV-A5	50W	SCPW16 (P.1094)	SGMAH-A5	SGMAS-A5	Mitsubishi Electric Corporation	HG-MR053	HG-KR053	Sanyo Denki Co., Ltd.	Q1AA04003D	Q1AA04005D	Q1AA04005D	Omron Corporation	R88M-K05030	R88M-K05030	Keyence Corporation	MV-M05	SV-M005	E2040	40 Sq.	SIEMENS	1FK7011-5	100W	CPDW19 (P.1096)	1FK7015-5
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Stepping Motor Application Table

Part Number	Flange Size	Manufacturer	Motor Part Number	Type	Recommended Coupling
T2028	28 Sq.	Oriental Motor	CSK22	2-Phase	SCPW16 (P.1094)
			C W1-8 Tool Steel ²	5-Phase	
			ASC3*	0 Step	
T2042	42 Sq.	Oriental Motor	AR2 (ARM)	0 Step	SCPW16 (P.1094)
			PK24*	2-Phase	
T2056.4	5.64 Sq.	NEMA Standards	CSK24	2-Phase	CPDW19 (P.1096)
			RK54	2-Phase	
			RKS54* / PK54*	5-Phase	
			AS46, ASC46, AR46	0 Step	

- Product numbers and specifications of motors are subject to change. Please check the manufacturer's information.
- Applicable motors and couplings are not limited to the above listed products. Please confirm each mounting dimension.



Secure included Motor Adapter to the Motor

Motor, coupling and motor mounting screws are not included.

Part Number	D	Corresponding Attachments	d	D ₁	d ₁	L	T	ℓ
JIGLX20	20	A2028	8	15	4	43	17	10
	30	A2038/A2040	8	15	4	47	13	10

Part Number Example

JIGLX20 - D

Single Axis Actuator LX20

Sensor Sets



Proximity Sensor Type (SUNX) Set Part Specification

LX Part Numbers	Code (is Sensor Qty.) * For L≤100, Max. 2 For L>150, Max. 3	Sensor Type/Qty.		Sensor Rail		Sensor (* Qty per sensor included)		Sensor Flag					
		GX-F8A (ON When Near)	GX-F8B (ON When Away)	Rail (1 Pc.)	Mounting Screw (Pitch +1 Pc.)	Sensor Mounting Screws (1 Pc.)	Mounting Nut (1 pc.)	Sensor Flag (1 Pc.)	Sensor Flag Mounting Screw				
LX20__	XA_	_pc(s)	—	SENAT3_H	SCB3-6	CBSST3-10	LBNR3	Dedicated	Flat Head Machine Screw M2.6-4 (1 pc.)				
	XB_	—	_pc(s)						SCB3-6 (2 pcs.)				
LX20__C	FA_	_pc(s)	—						Flat Head Machine Screw M2.6-4 (1 pc.)				
	FB_	—	_pc(s)						SCB3-6 (2 pcs.)				
LX20__	XW1	1 pc.	1 pc.						FW1	FW2	FW3	Dedicated	Flat Head Machine Screw M2.6-4 (1 pc.)
	XW2	2 pcs.	1 pc.										
LX20__C	FW1	1 pc.	1 pc.	SCB3-6 (2 pcs.)									
	FW2	2 pcs.	1 pc.	SCB3-6 (2 pcs.)									

Photo Sensor Type (SUNX) Set Part Specification

LX Part Number	Code (is Sensor Qty.) * For L≤100, Max. 2 For L>150, Max. 3	Photo Sensor	Sensor Rail		Sensor (* Qty Per Sensor Included)				Sensor Flag	
			Rail (1 Pc.)	Mounting Screw (Pitch +1 Pc.)	Sensor Bracket	Bracket Mounting Screw Nut	Sensor Mounting Screw	Sensor Mounting Washer	Sensor Flag (1 pc.)	Sensor Flag Mounting Screws
LX20__	SP_	PM-L25	SENAT3_H	SCB3-6	Dedicated	SCB3-5 (2 pcs.) LBNR3 (2 pcs.)	SCB3-6 (2 pcs.)	M2 Small Flat Washer (2 pcs.)	Dedicated	Flat Head Machine Screw M2.6-4 (1 pc.)
LX20__C	MP_									SCB3-6 (2 pcs.)

The Photo Sensor PM-L24 is to be discontinued and replaced by the next-generation product PM-L25 in April 2017.

Photo Sensor Type (Omron) Set Part Specification

LX Part Numbers	Code (is Sensor Qty.) * For L≤100, Max. 2 For L>150, Max. 3	Photo Sensor	Sensor Rail		Sensor (* Qty Per Sensor Included)				Sensor Flag	
			Rail (1 Pc.)	Mounting Screw (Pitch +1 Pc.)	Sensor Bracket	Bracket Mounting Screw Nut	Sensor Mounting Screw	Sensor Mounting Washer	Sensor Flag (1 pc.)	Sensor Flag Mounting Screw
LX20__	OP_	EE-SX951-R 1M	SENAT3_H	SCB3-6	Dedicated	SCB3-5 (2 pcs.) LBNR3 (2 pcs.)	SCB3-6 (2 pcs.)	M3 Small Flat Washer (2 pcs.)	Dedicated	Flat Head Machine Screw M2.6-4 (1 pc.)
LX20__C	EP_									SCB3-6 (2 pcs.)

* Sensors are not sold separately. EE-SX911-R1M is scheduled to change to EE-SX951-R1M from April 2015.

Part Number Alterations

Part Number	Block Qty.	Motor Adapter Plates	Base Overall Length (L)	(Code)
LX2001	B1	A2025	200	XW1
LX2005C	B1	A2028	200	EP3

Proximity Sensor Type Installation Drawings (SUNX)

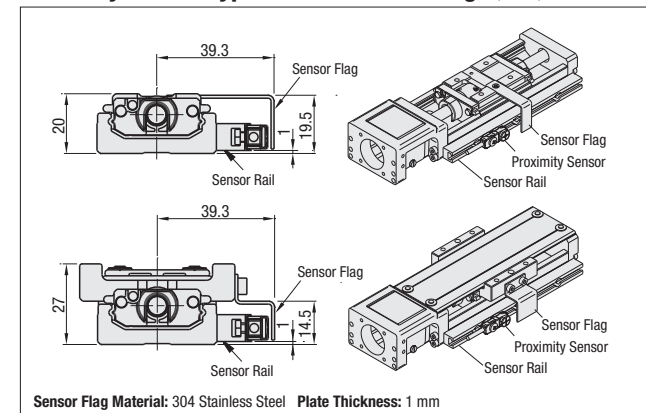
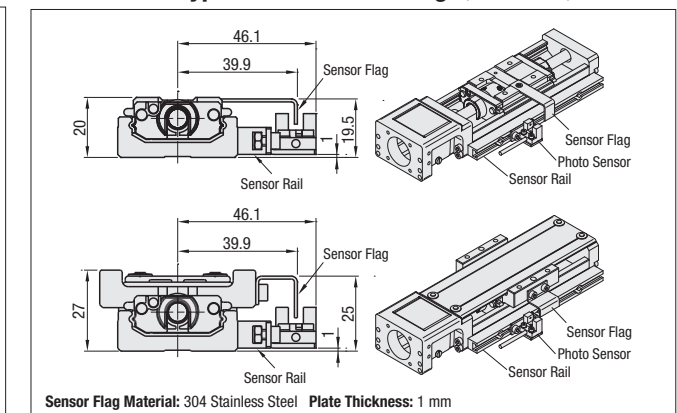


Photo Sensor Type Installation Drawings (SUNX / Omron)



- Please access each sensor manufacturer's website for the specifications of sensors in use.
- The sensor can also be installed on the opposite side.
- The drawing shows an example of sensor orientation. The sensor can also be installed in the opposite direction (i.e. with the cable wiring on the right).