# LGXS05 Advanced model

**Motor-less Single Axis Actuator**

## Ordering method

**LGXS05** – [ ] – [ ]

| Model | Lead designation | Stroke |
|---|---|---|
| | 20: 20 mm<br>10: 10 mm<br>5: 5 mm | 50 to 800<br>(50 mm pitch) |

**[Caution]**

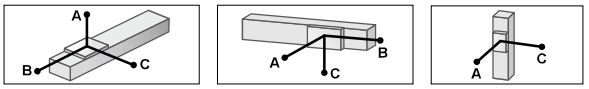
This system is provided as mechanical actuator unit and not including any adopters or electric components. Motor, driver and other components required for installation are user's responsibility.
Refer to user's manual for installation details. Refer to your motor manual for tuning or adjustment. Vibration or resonance from actuator will affect service life of actuator.
The product performance may not be satisfied depending on the compatible motor.

## Specifications

| | | | | |
|---|---|---|---|---|
| **Adaptable motor** | | 50 W | | |
| **Repeatability** Note 1 | | +/-0.005 mm | | |
| **Deceleration mechanism** | | Ground ball screw ϕ 12 (C5 class) | | |
| **Stroke** | | 50 mm to 800 mm (50 mm pitch) | | |
| **Maximum speed (or equivalent)** Note 2 | | 1333 mm/sec | 666 mm/sec | 333 mm/sec |
| **Ball screw lead** | | 20 mm | 10 mm | 5 mm |
| **Maximum payload (or equivalent)** Note 3 | Horizontal | 5 kg | 8 kg | 13 kg |
| | Vertical | 2 kg | 4 kg | 8 kg |
| **Rated thrust (or equivalent)** Note 3 | | 41 N | 69 N | 138 N |
| **Maximum dimensions of cross section of main unit** | | W 48 mm × H 65 mm | | |
| **Overall length** | | ST + 131.5 mm | | |
| **Degree of cleanliness** Note 4 | | ISO CLASS 3 (ISO14644-1) or equivalent | | |
| **Intake air** Note 5 | | 30 Nℓ/min to 100 Nℓ/min | | |
| **Using ambient temperature and humidity** | | 0 to 40 °C, 35 to 80 %RH (non-condensing) | | |

Note 1. Positioning repeatability in one direction.
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.
Note 3. The rated thrust and maximum transferable weight are values assuming the attached motor outputs the rated torque.
Note 4. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.
Note 5. The required suction amount will vary according to the operating conditions and operating environment.
Note. See P.22 for acceleration/deceleration and inertia moment.

## Allowable overhang Note




**LGXS05-20**

| Horizontal installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 2kg | 900 | 270 | 351 |
| 5kg | 583 | 112 | 159 |

| Wall installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 2kg | 324 | 234 | 812 |
| 5kg | 119 | 76 | 427 |

| Vertical installation (Unit: mm) | | |
|---|---|---|
| | A | C |
| 1kg | 454 | 454 |
| 2kg | 218 | 218 |

**LGXS05-10**

| Horizontal installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 2kg | 2506 | 382 | 625 |
| 5kg | 1368 | 149 | 246 |
| 8kg | 1038 | 90 | 150 |

| Wall installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 2kg | 585 | 346 | 2387 |
| 5kg | 195 | 113 | 1165 |
| 8kg | 95 | 54 | 747 |

| Vertical installation (Unit: mm) | | |
|---|---|---|
| | A | C |
| 1kg | 732 | 732 |
| 2kg | 351 | 351 |
| 4kg | 160 | 160 |

**LGXS05-5**

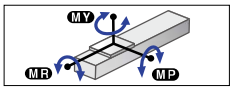
| Horizontal installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 3kg | 4635 | 281 | 497 |
| 8kg | 2211 | 101 | 179 |
| 13kg | 1599 | 59 | 105 |

| Wall installation (Unit: mm) | | | |
|---|---|---|---|
| | A | B | C |
| 3kg | 439 | 245 | 4401 |
| 8kg | 117 | 65 | 1826 |
| 13kg | 42 | 24 | 1006 |

| Vertical installation (Unit: mm) | | |
|---|---|---|
| | A | C |
| 4kg | 183 | 183 |
| 6kg | 111 | 111 |
| 8kg | 75 | 75 |

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600 mm stroke models.

## Static loading moment




(Unit: N·m)

| MY | MP | MR |
|---|---|---|
| 24 | 27 | 23 |

## Adaptable Servo Motor

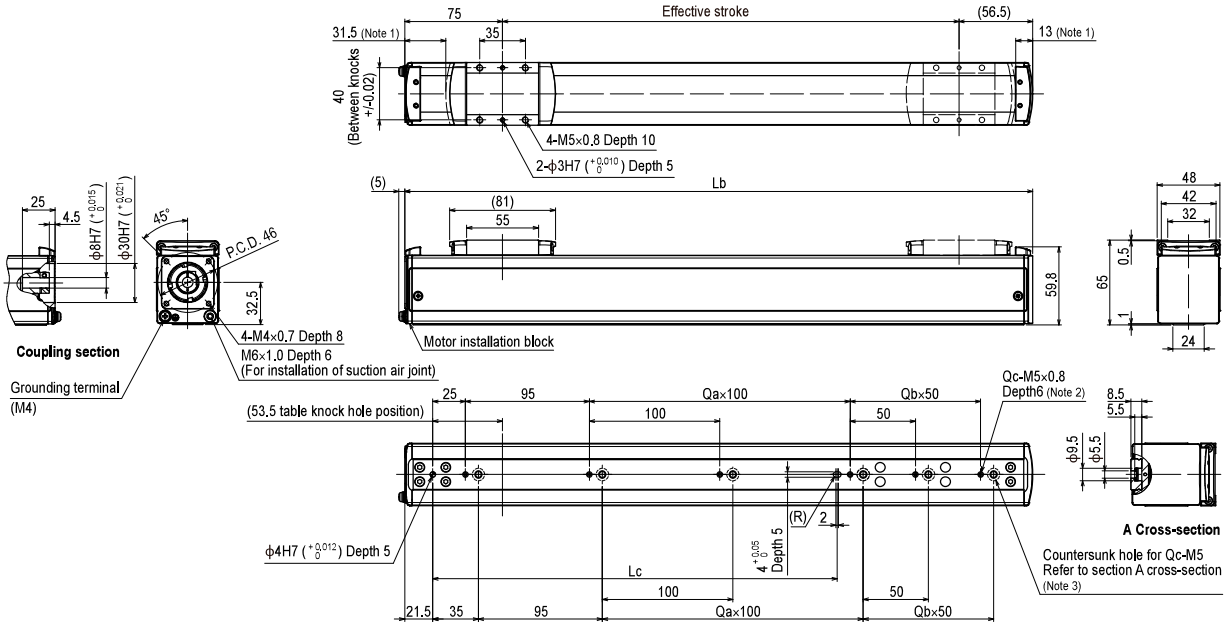
| Specification | | |
|---|---|---|
| | Flange size | □40 |
| | Wattage | 50 W |

| Manufacturer | Model |
|---|---|
| Yasukawa Electric Corp. | SGMJV-A5 |
| | SGM7J-A5 |
| Keyence Corp. | SV-□005 |
| | SV2-□005 |
| Mitsubishi Electric Corp. | HF-KP053 Note |
| | HG-KR053 Note |

Note. To combine with the conversion adapter <GX-BEND-40>, the shim plate (t1) is necessary.

| Conversion adapter product model | Shim plate part number |
|---|---|
| GX-BEND-40 | KES-M2295-00 |

## LGXS05




| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lb | 181.5 | 231.5 | 281.5 | 331.5 | 381.5 | 431.5 | 481.5 | 531.5 | 581.5 | 631.5 | 681.5 | 731.5 | 781.5 | 831.5 | 881.5 | 931.5 |
| Lc | 110 | 110 | 110 | 110 | 310 | 310 | 310 | 310 | 310 | 310 | 610 | 610 | 610 | 610 | 610 | 610 |
| Qa | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 5 |
| Qb | 0 | 1 | 2 | 3 | 0 | 1 | 2 | 3 | 4 | 5 | 0 | 1 | 2 | 3 | 4 | 5 |
| Qc | 2 | 3 | 4 | 5 | 4 | 5 | 6 | 7 | 8 | 9 | 7 | 8 | 9 | 10 | 11 | 12 |
| Weight (kg) | 1.2 | 1.4 | 1.5 | 1.7 | 1.9 | 2.0 | 2.2 | 2.3 | 2.5 | 2.6 | 2.8 | 2.9 | 3.1 | 3.2 | 3.4 | 3.5 |
| Maximum speed (mm/sec) Lead 20 | 1333 | | | | | | | | | | | | 1066 | 933 | 800 | 666 |
| Lead 10 | 666 | | | | | | | | | | | | 532 | 466 | 400 | 333 |
| Lead 5 | 333 | | | | | | | | | | | | 266 | 233 | 200 | 166 |
| Speed setting | – | | | | | | | | | | | | 80% | 70% | 60% | 50% |

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When using the tap holes to mount the body, remove the set screws first.
Note 3. When using the countersunk holes (section A cross section) to mount the body, remove the cap from the inner side and then fix. The length under head of the hex socket head bolts (M5 × 0.8) used must be 15 mm or less.

## Acceleration/Deceleration

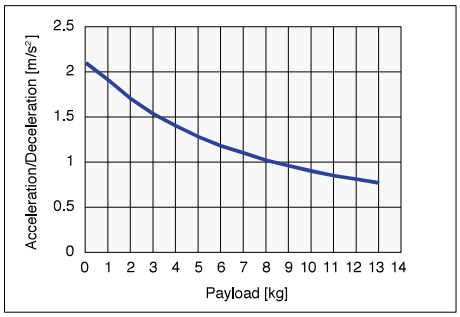
### LGXS05

| Model | LGXS05 -5 Horizontal/ Wall hanging | LGXS05 -5 Vertical | LGXS05 -10 Horizontal/ Wall hanging | LGXS05 -10 Vertical | LGXS05 -20 Horizontal/ Wall hanging | LGXS05 -20 Vertical |
|---|---|---|---|---|---|---|
| Payload [kg] | Acceleration/ Deceleration [m/s$^2$] | Acceleration/ Deceleration [m/s$^2$] | Acceleration/ Deceleration [m/s$^2$] | Acceleration/ Deceleration [m/s$^2$] | Acceleration/ Deceleration [m/s$^2$] | Acceleration/ Deceleration [m/s$^2$] |
| 0 | 2.1 | 2.1 | 4.2 | 3.6 | 5.3 | 5.3 |
| 1 | 1.91 | 2.1 | 3.84 | 2.4 | 5.3 | 5.3 |
| 2 | 1.7 | 1.64 | 2.99 | 1.8 | 3.98 | 3.98 |
| 3 | 1.53 | 1.34 | 2.45 | 1.44 | 3.19 | |
| 4 | 1.4 | 1.14 | 2.07 | 1.2 | 2.66 | |
| 5 | 1.28 | 0.99 | 1.8 | | 2.28 | |
| 6 | 1.18 | 0.87 | 1.58 | | | |
| 7 | 1.1 | 0.78 | 1.42 | | | |
| 8 | 1.02 | 0.7 | 1.28 | | | |
| 9 | 0.96 | | | | | |
| 10 | 0.9 | | | | | |
| 11 | 0.85 | | | | | |
| 12 | 0.81 | | | | | |
| 13 | 0.77 | | | | | |

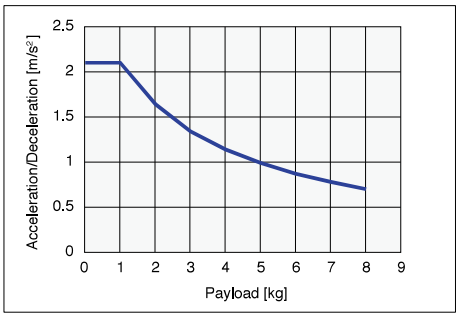
## Payload – Acceleration/Deceleration Graph (Estimate)

### LGXS05-5

Horizontal/ Wall hanging

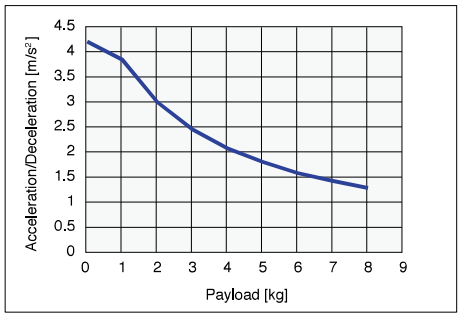



Vertical

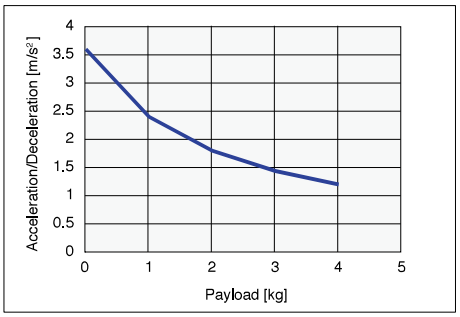



### LGXS05-10

Horizontal/ Wall hanging

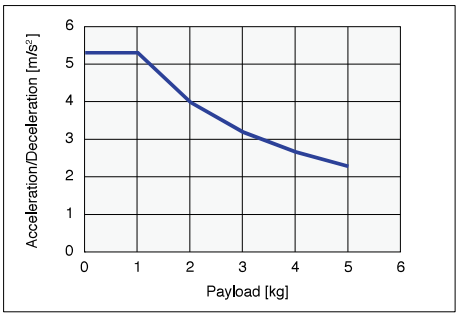



Vertical

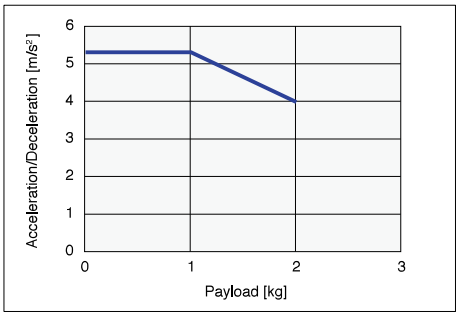



### LGXS05-20

Horizontal/ Wall hanging




Vertical




## Inertia Moment

### LGXS05

| [kg·m$^2$×10$^{-4}$] | Effective stroke [mm] | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 |
| LGXS05-5 | 0.139 | 0.147 | 0.155 | 0.163 | 0.171 | 0.179 | 0.187 | 0.195 | 0.203 | 0.211 | 0.219 | 0.227 | 0.235 | 0.243 | 0.251 | 0.259 |
| LGXS05-10 | 0.146 | 0.154 | 0.162 | 0.170 | 0.178 | 0.186 | 0.194 | 0.202 | 0.210 | 0.218 | 0.226 | 0.234 | 0.242 | 0.250 | 0.258 | 0.266 |
| LGXS05-20 | 0.177 | 0.185 | 0.193 | 0.201 | 0.209 | 0.217 | 0.225 | 0.233 | 0.241 | 0.249 | 0.257 | 0.265 | 0.273 | 0.281 | 0.289 | 0.297 |