

Compact, high-rigidity body for precision assembly and press-fit applications

- At only 8kg, our lightest G series robot
- Available with 175mm or 225mm arm
- Triple-axis model for heavier payloads



### G1 specifications

|                     |   |           |
|---------------------|---|-----------|
| Arm length          | 175 mm  | 225 mm    |
| Payload             | Rated 0.5 kg / Max 1 kg (4-axis), 1.5 kg (3-axis) |           |
| Standard cycle time | 0.29 sec  | 0.30 sec  |
| Repeatability       | Joint #1, #2                                      | ±0.005 mm |
|                     | Joint #4  | ±0.008 mm |
|                     |   | ±0.01°    |

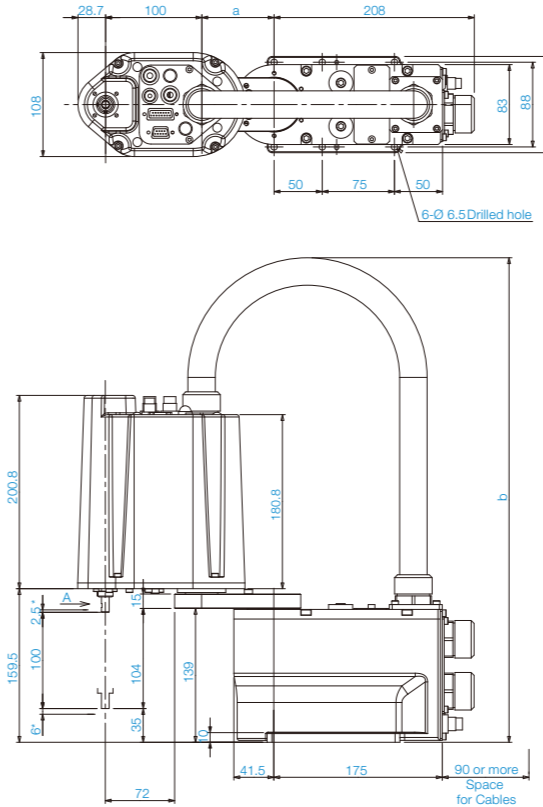
### Specifications

|   | 4-axis                               |                          | 3-axis     |            |
|---|--------------------------------------|--------------------------|------------|------------|
|   | G1-171*                              | G1-221*                  | G1-171*Z   | G1-221*Z   |
| Mounting type                                     | Table Top                            |                          |            |            |
| Arm length  | 175 mm                               | 225 mm                   | 175 mm     | 225 mm     |
| Max. operating speed                              | Arm #1, #2                           | 2630 mm/s                | 2630 mm/s  | 3000 mm/s  |
|   | Joint #3                             | 1200 mm/s                | 1200 mm/s  | 1200 mm/s  |
|   | Joint #4                             | 3000 deg/s               | 3000 deg/s | -          |
|   | Weight(cables not included)          | 8 kg                     | 8 kg       | 8 kg       |
| Repeatability                                     | Joint #1, #2                         | ±0.005 mm                | ±0.008 mm  | ±0.005 mm  |
|   | Joint #3                             | ±0.01 mm                 | ±0.01 mm   | ±0.01 mm   |
|   | Joint #4                             | ±0.01 deg                | ±0.01 deg  | ±0.01 deg  |
|   | Joint #1                             | ±125 deg                 | ±125 deg   | ±125 deg   |
| Max. motion range                                 | Joint #2                             | ±140 deg                 | ±152 deg   | ±135 deg   |
|   | (Cleanroom model)                    | (±140 deg)               | (±149 deg) | (±123 deg) |
|   | Z stroke                             | 100 mm                   | 100 mm     | 100 mm     |
|   | (Cleanroom model)                    | (80 mm)                  | (80 mm)    | (80 mm)    |
| Payload   | Rated                                | 0.5 kg                   | 0.5 kg     | 1.5 kg     |
|   | Maximum                              | 1 kg                     | 1 kg       | 1.5 kg     |
| Standard cycle time <sup>1</sup>                  | 0.29 sec                             | 0.30 sec                 | 0.29 sec   | 0.30 sec   |
| Joint #4 allowable moment of inertia <sup>2</sup> | Rated                                | 0.0003 kg·m <sup>2</sup> | -          | -          |
|   | Maximum                              | 0.004 kg·m <sup>2</sup>  | -          | -          |
| Motor power consumption                           | Joint #1                             | All joints: 50 W         |            |            |
|   | Joint #2                             |                          |            |            |
|   | Joint #3                             |                          |            |            |
|   | Joint #4                             |                          |            |            |
| Joint #3 down force                               | 50 N                                 |                          |            |            |
| Home  | Home-return-less                     |                          |            |            |
| Installed wire for customer use                   | 24Pin (D-Sub 9+D-sub 15)             |                          |            |            |
| Installed pneumatic tube for customer use         | Φ4mm×1, Φ6mm×2                       |                          |            |            |
| Installation environment                          | Standard/Cleanroom <sup>3</sup> &ESD |                          |            |            |
| Applicable Controller                             | RC180, RC620                         |                          |            |            |
| Safety standard                                   | CE compliant, ANSI/RIA15.06-1999     |                          |            |            |

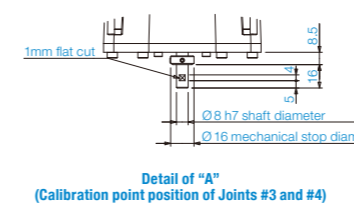
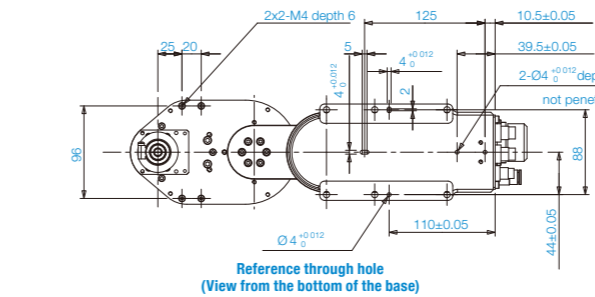
<sup>1</sup>1: Cycle time based on round-trip arch motion (100mm horizontal, 25mm vertical) with 0.5kg payload (path coordinates optimized for maximum speed).  
<sup>2</sup>2: When payload center of gravity is aligned with Joint #4; if not aligned with Joint #4, set parameters using INERTIA command.  
<sup>3</sup>3: Complies with ISO Class 3 (ISO14644-1) and older Class 10 (less than 10 0.1µm particles per 28,317cm<sup>3</sup>:1cft) cleanroom standards.

### Outer Dimensions (Table Top Mounting)

#### Standard-model

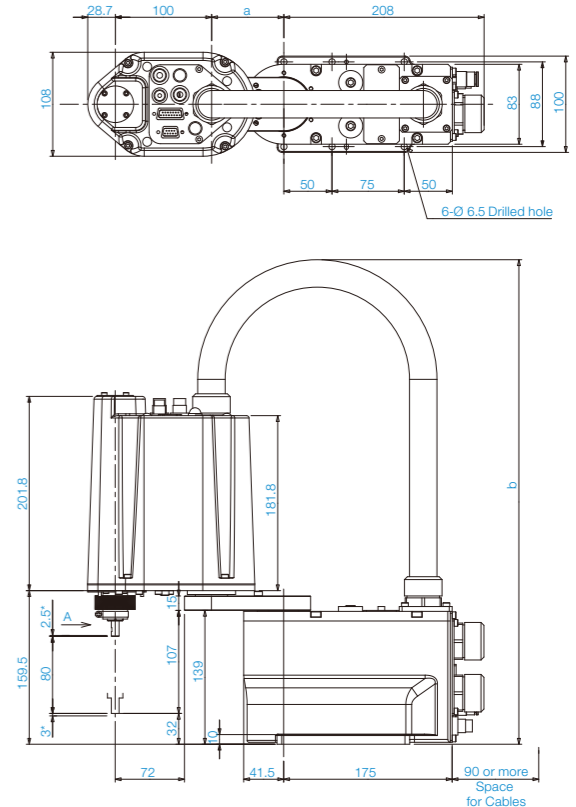


\*Indicates the stroke margin by mechanical stop.

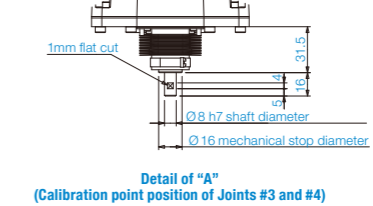
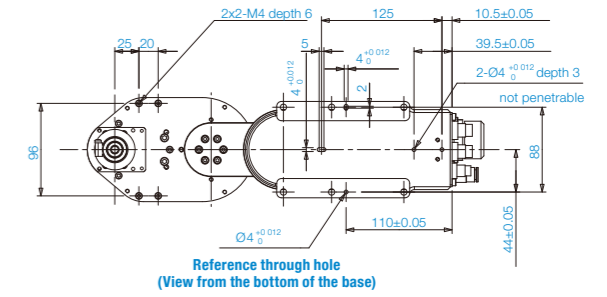


|   | G1_171S | G1_221S |
|---|---------|---------|
| a | 75      | 125     |
| b | Max.515 | Max.545 |

#### Cleanroom-model

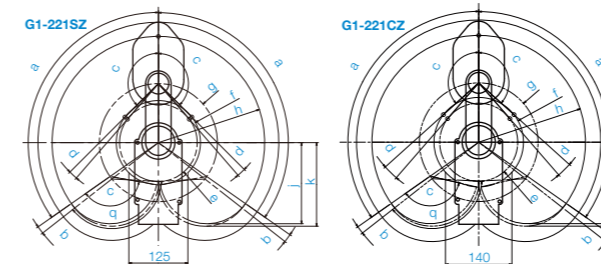


\*Indicates the stroke margin by mechanical stop.



|   | G1_171CS | G1_221CS |
|---|----------|----------|
| a | 75       | 125      |
| b | Max.515  | Max.545  |

### Motion Range (Table Top Mounting)



| Model  | 4-axis  |         |         |         | 3-axis   |          |          |          |
|--|---------|---------|---------|---------|----------|----------|----------|----------|
|  | G1-171S | G1-171C | G1-221S | G1-221C | G1-171SZ | G1-171CZ | G1-221SZ | G1-221CZ |
| g Length of Arm #1 (mm)                          | 75      | 125     | 75      | 125     |          |          |          |          |
| h-g Length of Arm #2 (mm)                        | 100     | 100     | 100     | 100     |          |          |          |          |
| f Motion range                                   | 64.3    | 59.6    | 64.8    | 70.9    | 86.4     | 89.2     | 94.4     |          |
| a Motion range of Joint #1 (degree)              | 125     | 125     | 125     | 125     |          |          |          |          |
| c Motion range of Joint #2 (degree)              | 140     | 152     | 149     | 135     | 123      | 135      | 132      |          |
| e Mechanical stop area                           | 60.4    | 62.6    | 52.8    | 56.2    | 69.2     | 82.5     | 82.2     |          |
| b Joint #1 angle to hit mechanical stop (degree) | 3       | 3       | 3       | 3       | 3        | 4        | 7        |          |
| d Joint #2 angle to hit mechanical stop (degree) | 3       | 4       | 5       | 1.3     | 3        | 4        | 7        |          |