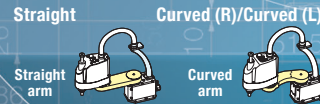




G-Series SCARA Robots

Compact and Ultra Powerful

- Arm Lengths from 250 to 350 mm
- Handles Small, Heavy Payloads up to 3 kg
- Fast Cycle Times for Increased Productivity
- Available with Straight or Curved Arm



Specifications

			G3-251	G3-301		G3-351		
Mounting type			Tabletop	Tabletop	Multiple	Tabletop	Multiple	
Arm length		Arm #1, #2	250 mm	300 mm		350 mm		
Max. operating speed		Joints #1, #2	3550 mm/s	3950 mm/s		4350 mm/s		
		Joint #3	1100 mm/s					
		Joint #4	3000 deg/s					
Weight (cables not included)			14 kg					
Repeatability		Joints #1, #2	±0.008 mm	±0.01 mm		±0.01 mm		
		Joint #3	±0.01 mm					
		Joint #4	±0.005 deg					
Max. motion range	Straight	Joint #1	±140 deg	±140 deg	±115 deg	±140 deg	±120 deg	
		Joint #2 (Cleanroom model)	±141 deg (±137 deg)	±142 deg (±141 deg)	±135 deg (±135 deg)	±142 deg (±142 deg)		
	Curved	Joint #1 Right hand	—	-125~150 deg	—	-110~165 deg	-105~130 deg	
		Left hand	—	-150~125 deg	—	-165~110 deg	-130~105 deg	
		Joint #2 Right hand (Cleanroom model)	—	-135~150 deg (-135~145 deg)	—	-120~165 deg (-120~160 deg)	-120~160 deg (-120~150 deg)	
		Left hand (Cleanroom model)	—	-150~135 deg (-145~135 deg)	—	-165~120 deg (-160~120 deg)	-160~120 deg (-150~120 deg)	
	All models	Joint #3 Cleanroom model	150 mm 120 mm					
		Joint #4	±360 deg					
		Payload		Rated	1 kg			
			Maximum	3 kg				
Standard cycle time ¹			0.36 sec	0.37 sec		0.37 sec		
Joint #4 allowable moment of inertia ²		Rated	0.005 kg•m1					
		Maximum	0.05 kg•m1					
Motor power consumption		Joint #1	200 W					
		Joint #2	150 W					
		Joint #3	150 W					
		Joint #4	150 W					
Joint #3 downward force			150 N					
Electric lines			15Pin (D-Sub)					
Pneumatic lines			Ø4mm×1, Ø6mm×2					
Installation environment			Standard/Cleanroom ³ & ESD					
Available controllers			RC180, RC620+, RC700A					
Safety standards			CE, ANSI/RIA15.06-2012, UL 1740					

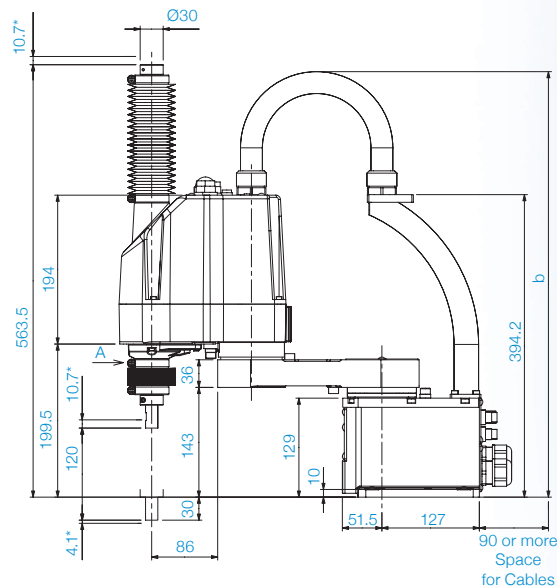
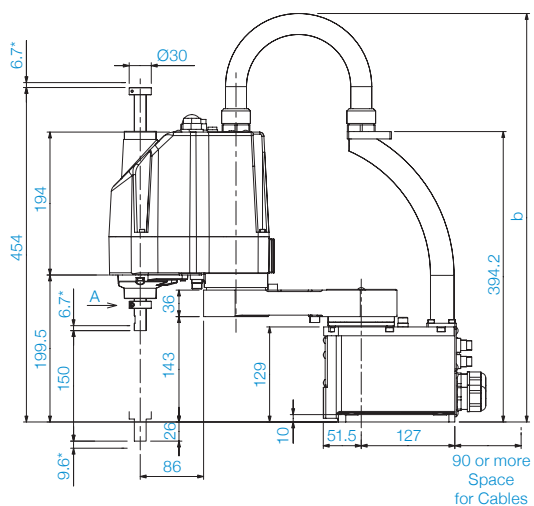
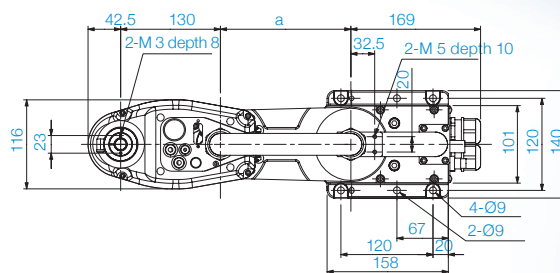
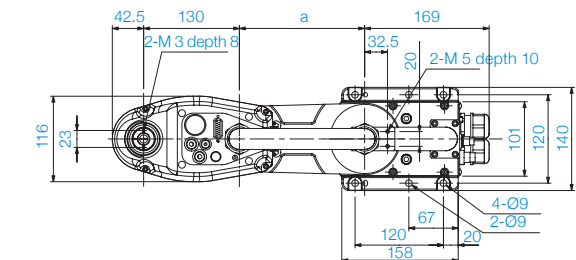
¹ Cycle time based on round-trip arch motion (300mm horizontal, 25mm vertical) with 1kg payload (path coordinates optimized for maximum speed).

² When payload center of gravity is aligned with Joint #4; if not aligned with Joint #4, set parameters using INERTIA command.

³ Complies with ISO Class 3 (ISO14644-1) and older Class 10 (less than 100.1µm particles per 28,317cm³:1cft) cleanroom standards.

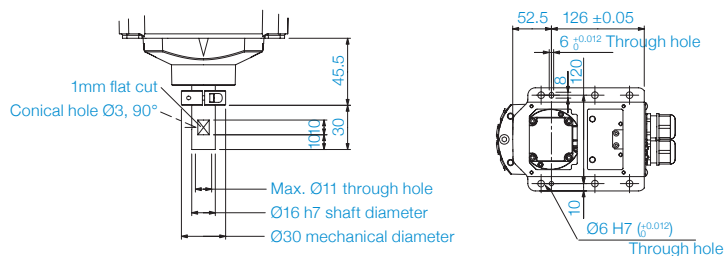
Standard-model

Cleanroom-model



* indicates the stroke margin by mechanical stop.

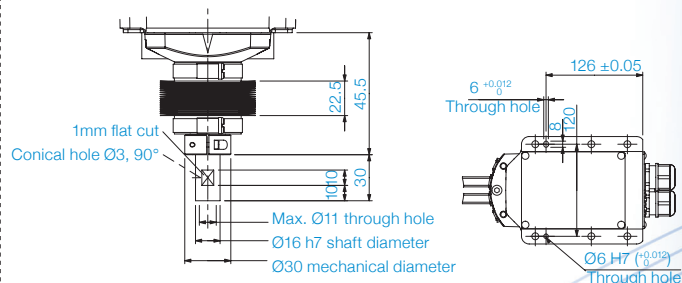
* indicates the stroke margin by mechanical stop.



Detail of "A"
(Calibration point position of Joints #3 and #4)

Reference through hole
(View from the bottom of the base)

	G3_251S	G3_301S	G3_351S
a	120	170	220
b	Max. 545	Max. 575	Max. 595

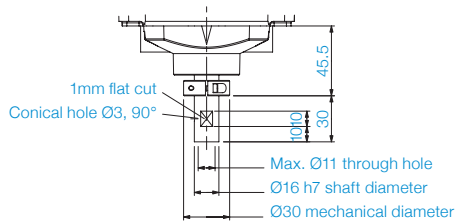
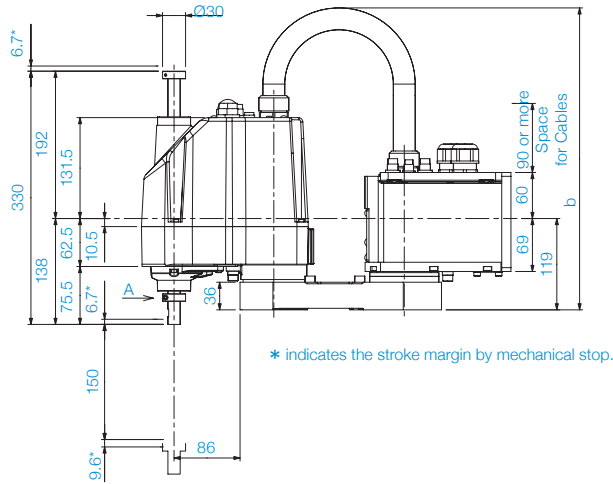
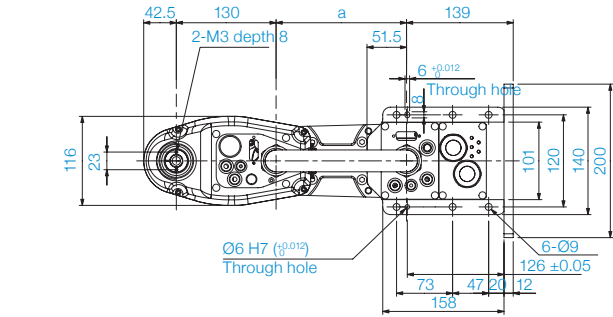


Detail of "A"
(Calibration point position of Joints #3 and #4)

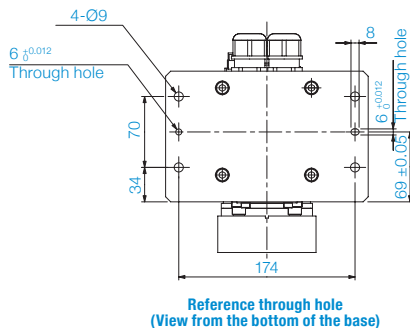
Reference through hole
(View from the bottom of the base)

	G3_251C	G3_301C	G3_351C
a	120	170	220
b	Max. 545	Max. 575	Max. 595

Standard-model



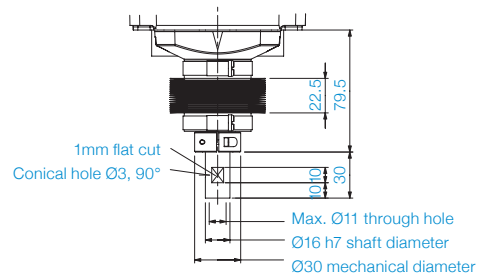
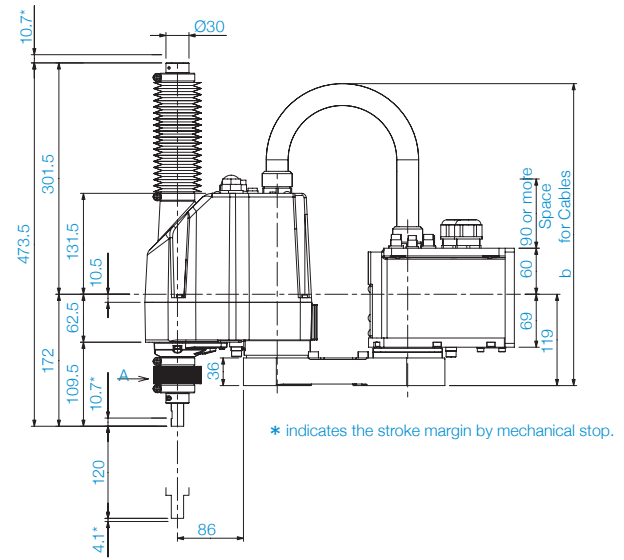
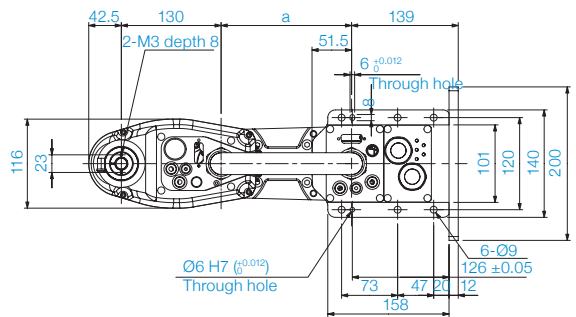
Detail of "A"
(Calibration point position of Joints #3 and #4)



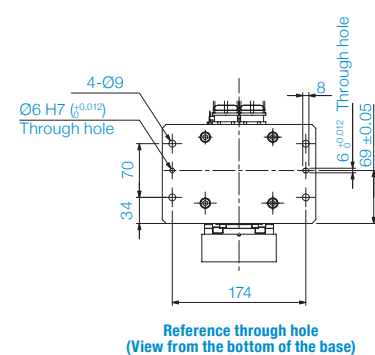
Reference through hole
(View from the bottom of the base)

	G3_301SM	G3_351SM
a	170	220
b	Max. 410	Max. 450

Cleanroom-model



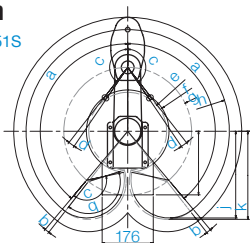
Detail of "A"
(Calibration point position of Joints #3 and #4)



Reference through hole
(View from the bottom of the base)

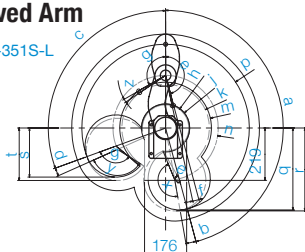
	G3_301CM	G3_351CM
a	170	220
b	Max. 410	Max. 450

G3-351S



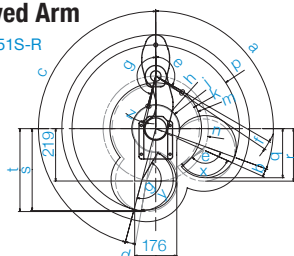
Model	Straight Arm					
	G3-251S	G3-251C	G3-301S	G3-301C	G3-351S	G3-351C
g Length of Arm #1 (mm)	120		170		220	
h-g Length of Arm #2 (mm)	130		130		130	
f Motion range	84	92	104.8	107.1	142.3	146.6
a Motion range of Joint #1 (deg)	140					
c Motion range of Joint #2 (deg)	141	137	142	141	142	
e Mechanical stop area	79.3		96.2		134.2	
b Joint #1 angle to hit mechanical stop (deg)	2					
d Joint #2 angle to hit mechanical stop (deg)	2.3	6.3	3.8	4.8	3.8	

G3-351S-L



Model	Left-Curved Arm			
	G3-301S-L	G3-301C-L	G3-351S-L	G3-351C-L
n Length of Arm #1 (mm)	170		220	
p-n Length of Arm #2 (mm)	130		130	
m,j Motion range	120.7, 86.8		191.6, 100.3	191.6, 107.5
a,c Motion range of Joint #1 (deg)	150, 125		165, 110	
e,g Motion range of Joint #2 (deg)	150, 135	145, 135	165, 120	160, 120
h,k Mechanical stop area	79.5, 113.2		97.0, 183.0	97.0, 184.2
b,d Joint #1 angle to hit mechanical stop (deg)	3, 6		5, 4	
f,z Joint #2 angle to hit mechanical stop (deg)	3.3 -	8.3-3.8	2.8-3.8	7.8-3.8

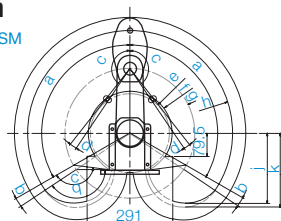
G3-351S-R



Model	Right-Curved Arm			
	G3-301S-R	G3-301C-R	G3-351S-R	G3-351C-R
n Length of Arm #1 (mm)	170		220	
p-n Length of Arm #2 (mm)	130		130	
m,j Motion range	120.7, 86.8		191.6, 100.3	191.6, 107.5
a,c Motion range of Joint #1 (deg)	125, 150		110, 165	
e,g Motion range of Joint #2 (deg)	135, 150	135, 145	120, 165	120, 160
h,k Mechanical stop area	79.5, 113.2		97.0, 183.0	97.0, 184.2
b,d Joint #1 angle to hit mechanical stop (deg)	6, 3		4, 5	
f,z Joint #2 angle to hit mechanical stop (deg)	3.3, -	3.3, 8.3	3.8, 2.8	3.8, 7.8

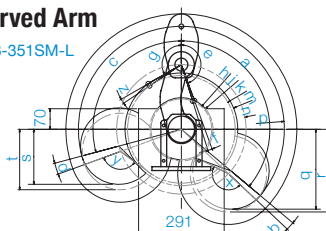
[Units: mm]

G3-351SM



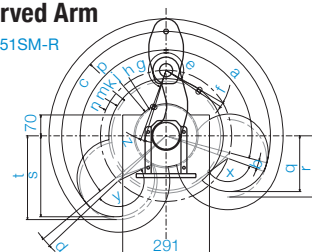
Model	Straight Arm	
	G3-301SM/CM	G3-351SM/CM
g Length of Arm #1 (mm)	170	220
h-g Length of Arm #2 (mm)	130	130
f Motion range	120.7	142.3
a Motion range of Joint #1 (deg)	115	120
c Motion range of Joint #2 (deg)	135	142
e Mechanical stop area	112	134.2
b Joint #1 angle to hit mechanical stop (deg)	4	
d Joint #2 angle to hit mechanical stop (deg)	3.8	

G3-351SM-L



Model	Left-Curved Arm	
	G3-351SM-L	G3-351CM-L
n Length of Arm #1 (mm)	220	
p-n Length of Arm #2 (mm)	130	
m,j Motion range	191.9, 107.5	191.9, 125.6
a,c Motion range of Joint #1 (deg)	130, 105	
e,g Motion range of Joint #2 (deg)	160, 120	150, 120
h,k Mechanical stop area	103.3, 183.0	
b,d Joint #1 angle to hit mechanical stop (deg)	3.3, 5	2, 5
f,z Joint #2 angle to hit mechanical stop (deg)	2.8, 3.8	12.8, 3.8

G3-351SM-R



Model	Right-Curved Arm	
	G3-35ISM-R	G3-35ICM-R
n Length of Arm #1 (mm)	220	
p-n Length of Arm #2 (mm)	130	
m,j Motion range	191.9, 107.5	191.9, 125.6
a,c Motion range of Joint #1 (deg)	105, 130	
e,g Motion range of Joint #2 (deg)	120, 160	120, 150
h,k Mechanical stop area	103.3, 183.0	
b,d Joint #1 angle to hit mechanical stop (deg)	5, 3.3	5, 2
f,z Joint #2 angle to hit mechanical stop (deg)	3.8, 2.8	3.8, 12.8