



Low Cost Multi-Axis Robot

miniSCARA

MiniSCARA, Dynaservo's low cost and high performance SCARA robot, is specifically developed for applications in bio-technology, pharmaceutical industries.

To significantly reduce the total system cost, a new 2-axis DC servo drive was developed. Based on the 2-axis DC servo, a variety of system configuration such as "2-axis DC servo + 2-axis stepper", or "2-axis" DC servo + 2-axis pneumatic" is available.

Featuring wide operation range and high speed, SCARA (Selective Compliance Assembly Robot Arm) Robot is widely used in Assembly line for part transfer etc.

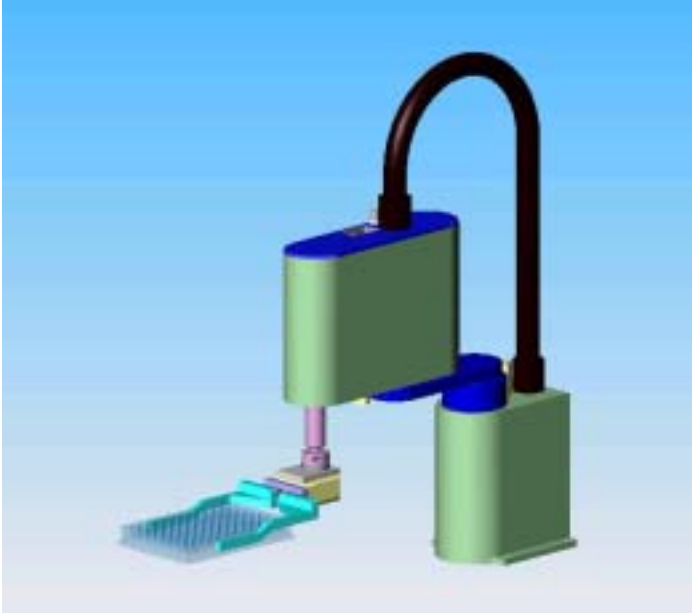
- **Compact, Low Cost, High Performance**
-Harmonic Gear Incorporated
- **Easy-to-use**
-Wide Operation Range
-High Speed Motion
-Teaching in Tool Coordinate
-PTP Linear Motion
- **Standard Robot Language *Fics-III***
-Integrated Motion and I/O Control
-Easy Interface with PC-Based Control
-through C-HOST Protocol
- **Expandable Serial Link I/O Module**
-256DI 256DO
- **Flexible System Configuration**
-Made to Custom Specification



miniSCARA Robot In a Laboratory

miniSCARA

■ Interchangeable grip fingers for laboratory use



Interchangeable grippers of **MiniSCARA** to be utilized for handling a wide variety of lab wares like tubes and well-plates (96, 384).

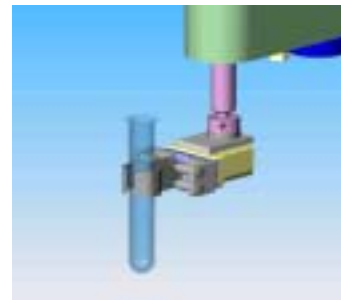
- De-capping gripper removes, retains and replaces the same vessel cap to a controlled torque.
- Rounded and squared wares made of glass or plastic can be handled quietly and reliably.

MiniSCARA robot optimizes the use of the laboratory work-surface by its compact design and provides an ideal platform for automating repetitive and diverse tasks, in areas such as : drug discovery, quality control/assurance, genetic analysis, clinical testing, and sample preparation.

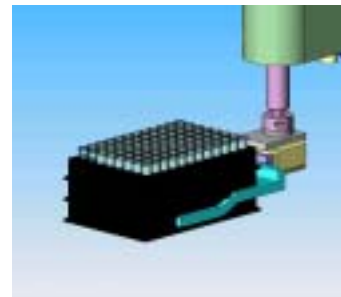
Applications



Gripper for de-capping

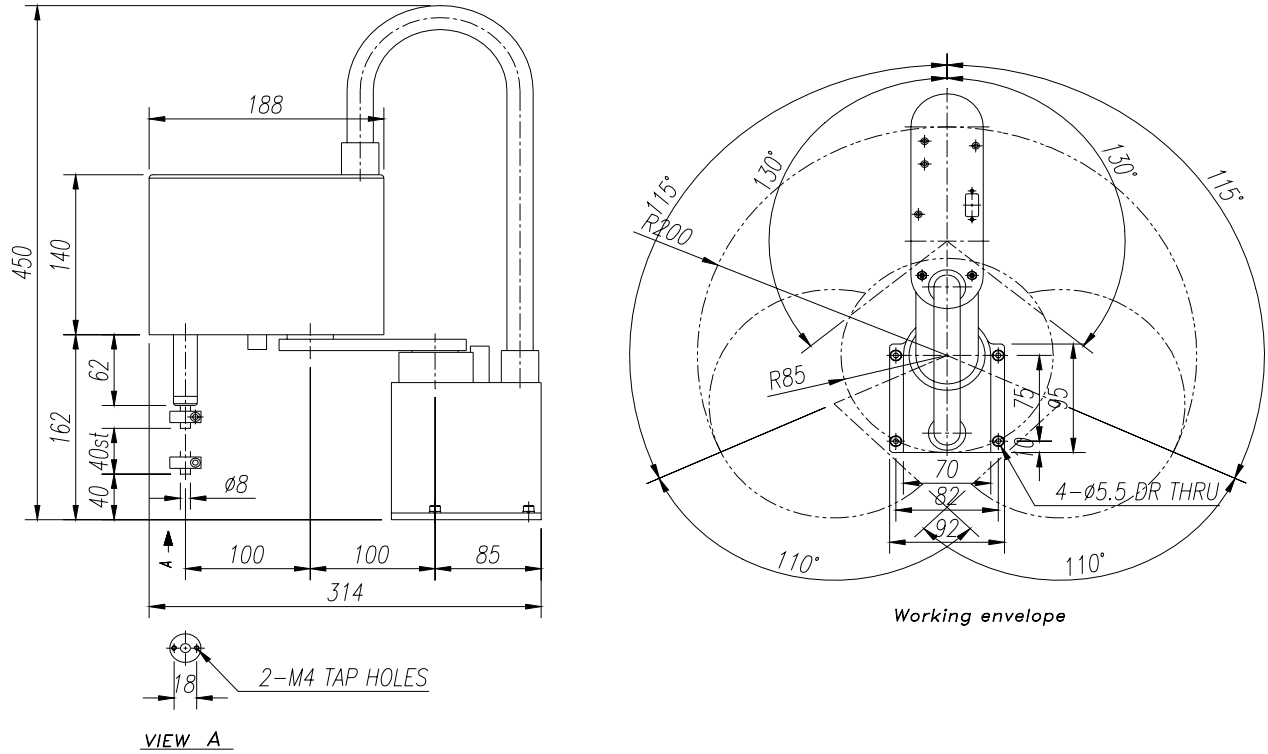


Gripper for tubes



Gripper for well-plates

Specification



Name	MiniSCARA	
Arm Length	200mm (100+100)	
Rotation Range	X-Axis	+/-115°
	Y-Axis	+/-130°
	Z-Axis	40 mm
	R-Axis	+/-160°
Maximum Speed	X-Axis	240°/s
	Y-Axis	240°/s
	Z-Axis	30 mm/s
	R-Axis	360°/s
Motor	X-Axis	11W 1,000P/r
	Y-Axis	11W 1,000P/r
	Z-Axis	TS3641N1E2 400 P/r
	R-Axis	TS3641N1E2 400 P/r
Gear Reducer	X-Axis	Harmonic Gear 1/50
	Y-Axis	Harmonic Gear 1/51
	Z-Axis	Ball Screw Lead=2.0mm
	R-Axis	Belt(1/4)
Payload	0.8 kg	
Permissible Moment For R-Axis	0.002 kgm2	
Positioning Accuracy	X-Axis	0.0072° → 0.025mm/R200
	Y-Axis	0.0071° → 0.012mm/R100
	Z-Axis	0.005mm
	R-Axis	0.225°
Air Conduit	2(Ø4)	
Weight	Approx. 3 kg	

Controller

<4CH Main Power>**02-0831**

<Integrated 2-axis DC Servo Drive>**Atom-DC/2**

<Integrated 2-axis Micro-Stepping Drive>**Atom-PDS/2**

<Integrated Multi-axis Motion Controller and Handheld Terminal>**Fics- CAtoms T1**



Sensor, I/O Connector

CN I/F: Robot Sensor/Enc Signal (DM-25SP, Hirose)

PIN	SIGNAL	IN /OUT	PIN	SIGNAL	IN /OUT
1	X-EN A	OUT	14	+24V	IN
2	X-EN B	OUT	15	+24V	IN
3	X-EN 5V	IN	16	NC	-
4	X-EN 0V	-	17	X-ORG	OUT
5	NC	-	18	Y-ORG	OUT
6	Y-EN A	OUT	19	Z -OV	OUT
7	Y-EN B	OUT	20	R-ORG	OUT
8	Y-EN 5V	IN	21	NC	-
9	Y-EN 0V	-	22	DI-0	OUT
10	NC	-	23	DI-1	OUT
11	NC	-	24	24VGN D	-
12	NC	-	25	24VGN D	-
13	NC	-			

Motor Connector

CN MOP: Motor Power (DM-25SS, Hirose)

PIN	SIGNAL	IN /OUT	PIN	SIGNAL	IN /OUT
1	X/M+	IN	14	NC	-
2	X/M-	IN	15	NC	-
3	NC	-	16	NC	-
4	Y/M+	IN	17	NC	-
5	Y/M-	IN	18	NC	-
6	NC	-	19	NC	-
7	Z/A+	IN	20	R/A+	IN
8	Z/A-	IN	21	R/A-	IN
9	Z/B+	IN	22	R/B+	IN
10	Z/B-	IN	23	R/B-	IN
11	Z/ACOM	-	24	R/ACO M	-
12	Z/BCOM	-	25	R/BCO M	-
13	NC	-			