



Automation for a Changing World

# Delta SCARA Robots



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**DELTA**  
Smarter. Greener. Together.

## Smart Robot for Industry Upgrades

Current trends affecting manufacturing include short commodity cycles, small-volume and large-variety orders, and frequent changes on production lines for multiple items. In response, Delta has launched its new Selective Compliance Assembly Robot Arm (SCARA) that helps customers control production quality for high precision manufacturing. Delta's SCARA provides flexible and variable manufacturing for customization, solves labor shortages, enhances competitiveness, and strengthens response capacity.

Delta SCARA features compliance control functions without sensors, and offers excellent speed, linearity, verticality and repeatability to rapidly and precisely perform operations such as insertion, screw locking, assembly, load and unload, pick-and-place, stacking and packaging. The automatic process path planning function fulfills industry needs for conveyor tracking processes such as gluing, deburring, coating and soldering. With the aid of Delta's machine vision systems, it can perform smart identification, inspection and sorting to effectively reduce defect rates for consistent quality delivery.

When matched with control units and other peripheral devices such as servo systems, machine vision systems and linear modules, the SCARA becomes a highly integrated work station for industries such as consumer electronics, electrical/electronics, rubber and plastic, packaging, metal fabrication and others. It satisfies requirements for both single devices and workstation applications, and enables modularized production lines and multi-products production with consistently good quality. Delta SCARA is easily applied to production automation for higher flexibility in achieving smart and efficient production, and improving productivity, quality, and labor efficiency.

A new industrial revolution is moving towards smart manufacturing and smart factories. To meet customers' needs and to be ready for the industry's future, Delta continues to accumulate field applications and experience and to provide innovative and efficient robot solutions as part of our "Automation for a Changing World".

- ▶ **Sensor-less compliance control**
- ▶ **High repeatability, high precision, excellent linearity and verticality**
- ▶ **Widely applied in various applications and industries**



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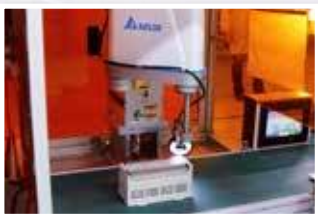
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## Successful Applications

Delta SCARA has been successfully applied to improving production line efficiency and yield rates for consistent quality delivery.

Industry: Electrical/electronics, rubber and plastic, packaging, and metal fabrication

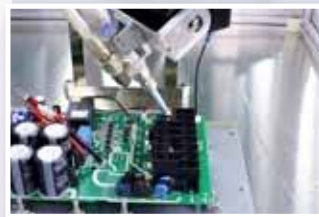
Applications: Insertion, screw driving, assembly, glue dispensing, coating, soldering, load and unload, pick-and-place, stacking, packaging, and inspection



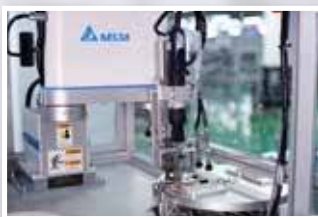
Product Inspection



Soldering



Glue Dispensing



Screw Driving



Touch Screen Inspection

# Specifications SCARA Robots

## DRS40L Series

Model		DRS40L3SS1BN002	DRS40L3SO1BN002
Number of Axes		4	
Installation		Table-top	
Arm Length (X+Y)		400 mm	
Rated / Max. Payload		1 Kg / 3 Kg	
Maximum Speed	J1+J2	4710 mm / sec	
	J3	1250 mm / sec	
	J4	1875° / sec	625° / sec
Range of Motion	J1	±130°	
	J2	±146.6°	
	J3	150 mm	
	J4	±360°	
Standard Cycle Time *		0.42 sec	
Repeatability	J1+J2	±0.01 mm	
	J3	±0.01 mm	
	J4	±0.01°	
Rated / Max. Push Force (J3)		100 / 250N	
Rated/ Max. Allowable Inertia Moment (J4)		0.0091 Kg-m <sup>2</sup>	0.055 Kg-m <sup>2</sup>
User Wiring		15Pin D-Sub	
User Tubing		ø4 mmx2, ø6 mmx1	
Weight (Without Controller)		16 Kg	
Environment	Ambient Temperature	5°C ~ 40°C	
	Storage Temperature	-25°C ~ 55°C	
	Humidity	0 ~ 90% RH (non-condensing)	

\*When carrying a payload of 1Kg and reciprocating 25 mm in vertical and 300 mm in horizontal directions under an operating temperature of 25°C and within a humidity of 45% ~ 65% RH (non-condensing).

# Ordering Information

## DRS40L Series

DRS	40	L	3	S	S	1	B	N	002
Company/ Product/ Robot Type	Arm Length	Level	Max. Payload	Z-Axis Stroke (Horizontal Stroke)	R-Axis Speed Reduction Ratio	Generation	Controller	Teach Pendant	Identification
D:DELTA R:Robot S:SCARA	40:400mm	L:Lite	3 : 3 Kg	S : 150mm	S : Standard (1/16) O : Option (1/48)	1	B : Servo Drive (Cable Length 3m) K : Servo Drive (Cable Length 5m)	N:Non	002:Standard 4 Axes

## DRS60L Series

Model		DRS60L6SN1BN302	DRS60L6SS1BN002	DRS60L3SS1BN502
Number of Axes		3	4	5
Installation		Table-top		
Arm Length (X+Y)		600 mm		
Rated / Max. Payload		2 Kg / 6 Kg		1 Kg / 3 Kg
Maximum Speed	J1+J2	5000 mm/sec		
	J3	1100 mm/sec		
	J4	N.A.	2000 ° /sec	
	J5	N.A.		600 ° /sec
Range of Motion	J1	±133°		
	J2	±153°		
	J3	200 mm		
	J4	N.A.	±360°	
Standard Cycle Time *		0.39 sec		0.45 sec
Repeatability	J1+J2	±0.015 mm		
	J3	±0.01 mm		
	J4	N.A.	±0.01 °	
	J5	N.A.		±0.01 °
Rated / Max. Push Force (J3)		150 N / 350N		N.A
Rated/ Max. Allowable Inertia Moment (J4)		N.A.	0.01 Kg-m <sup>2</sup>	
User Wiring		15Pin D-Sub		
User Tubing		ø4 mmx1, ø6 mmx2		
Weight (Without Controller)		20 Kg		21 Kg
Environment	Ambient Temperature	5°C ~ 40°C		
	Storage Temperature	-25°C ~ 55°C		
	Humidity	0 ~ 90% RH (non-condensing)		

\*When carrying a payload of 1Kg and reciprocating 25 mm in vertical and 300 mm in horizontal directions under an operating temperature of 25°C and within a humidity of 45% ~ 65% RH (non-condensing).

## Ordering Information

### DRS40L Series

DRS	60	L	6	S	S	1	B	N	002
Company/ Product/ Robot Type	Arm Length	Level	Max. Payload	Z-Axis Stroke (Horizontal Stroke)	R-Axis Speed Reduction Ratio	Generation	Controller	Teach Pendant	Identification
D:DELTA R:Robot S:SCARA	60:600mm	L:Lite	6 : 6 Kg 3 : 3 Kg	S : 200mm	S : Standard (1/15) N : Non	1	B : Servo Drive (Cable Length 3m) K : Servo Drive (Cable Length 5m)	N:Non	002:Standard 4 Axes 302:3 Axes 502:5 Axes

# Specifications SCARA Robots

## DRS50/70L Series

Model		DRS50L6SS1BN002	DRS70L6SS1BN002
Number of Axes		4	4
Installation		Table-top	Table-top
Arm Length (X+Y)		500 mm	700 mm
Rated / Max. Payload		2 Kg / 6 Kg	2 Kg / 6 Kg
Maximum Speed	J1+J2	4400 mm/sec	5500 mm/sec
	J3	1100 mm/sec	1100 mm/sec
	J4	2000° /sec	2000° /sec
Range of Motion	J1	±133°	±133°
	J2	±153°	±153°
	J3	200 mm	200 mm
	J4	±360°	±360°
Standard Cycle Time *		0.39 sec	0.40 sec
Repeatability	J1+J2	±0.015 mm	±0.015 mm
	J3	±0.01 mm	±0.01 mm
	J4	±0.01°	±0.01°
Rated / Max. Push Force (J3)		150 N / 350 N	
Rated/ Max. Allowable Inertia Moment (J4)		0.01 Kg-m <sup>2</sup>	
User Wiring		15Pin D-Sub	
User Tubing		ø4 mmx1, ø6 mmx2	
Weight (Without Controller)		18.5 Kg	20 Kg
Environment	Ambient Temperature	5°C ~ 40°C	
	Storage Temperature	-25°C ~ 55°C	
	Humidity	0 ~ 90% RH (non-condensing)	

\*When carrying a payload of 1Kg and reciprocating 25 mm in vertical and 300 mm in horizontal directions under an operating temperature of 25°C and within a humidity of 45% ~ 65% RH (non-condensing).

## Ordering Information

### DRS50/70L Series

DRS	50/70	L	6	S	S	1	B	N	002
Company/ Product/ Robot Type	Arm Length	Leve	Max. Payload	Z-Axis Stroke (Horizontal Stroke)	R-Axis Speed Reduction Ratio	Generation	Controller	Teach Pendant	Identification
D:DELTA R:Robot S:SCARA	50:500mm 70:700mm	L:Lite	6 : 6 Kg	S : 200mm	S : Standard (1/15)	1	B : Servo Drive (Cable Length 3m) K : Servo Drive (Cable Length 5m)	N:Non	002:Standard 4 Axes

## DRS60H Series (To be launched)

Model		DRS60H6SS1BN002
Number of Axes		4
Installation		Ceiling mounted
Arm Length (X+Y)		600 mm
Rated / Max. Payload		2 Kg / 6 Kg
Maximum Speed	J1+J2	5000 mm/sec
	J3	1100 mm/sec
	J4	2000° /sec
Range of Motion	J1	±130°
	J2	±150°
	J3	200 mm
	J4	±360°
Standard Cycle Time *		0.39 sec
Repeatability	J1+J2	±0.015 mm
	J3	±0.01 mm
	J4	±0.01°
Rated / Max. Push Force (J3)		150 N / 350 N
Rated/ Max. Allowable Inertia Moment (J4)		0.01 Kg-m <sup>2</sup>
User Wiring		15Pin D-Sub
User Tubing		ø4 mmx1, ø6 mmx2
Weight (Without Controller)		23 Kg
Environment	Ambient Temperature	5°C ~ 40°C
	Storage Temperature	-25°C ~ 55°C
	Humidity	0 ~ 90% RH (non-condensing)

\*When carrying a payload of 1Kg and reciprocating 25 mm in vertical and 300 mm in horizontal directions under an operating temperature of 25°C and within a humidity of 45% ~ 65% RH (non-condensing).

## Ordering Information

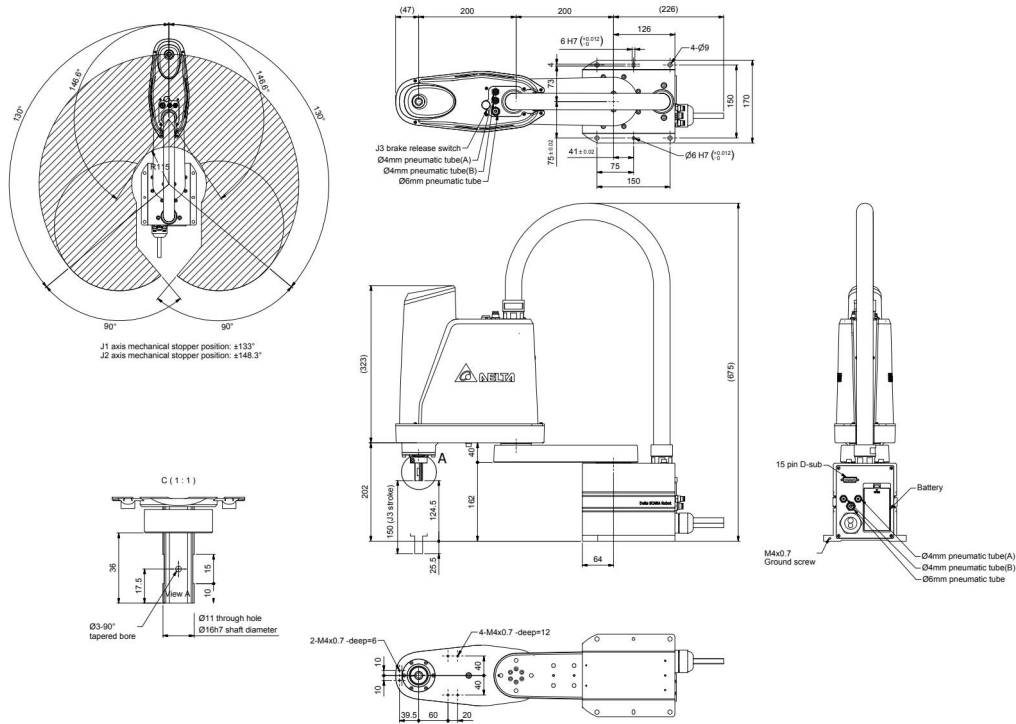
### DRS60H Series

DRS	60	H	6	S	S	1	B	N	002
Company/ Product/ Robot Type	Arm Length	Leve	Max. Payload	Z-Axis Stroke (Horizontal Stroke)	R-Axis Speed Reduction Ratio	Generation	Controller	Teach Pendant	Identification
D:DELTA R:Robot S:SCARA	60:600mm	H:Hang	6 : 6 Kg	S : 200mm	S : Standard (1/15)	1	B : Servo Drive (Cable Length 3m) K : Servo Drive (Cable Length 5m)	N:Non	002:Standard 4 Axes

# External Dimensions and Workable Space

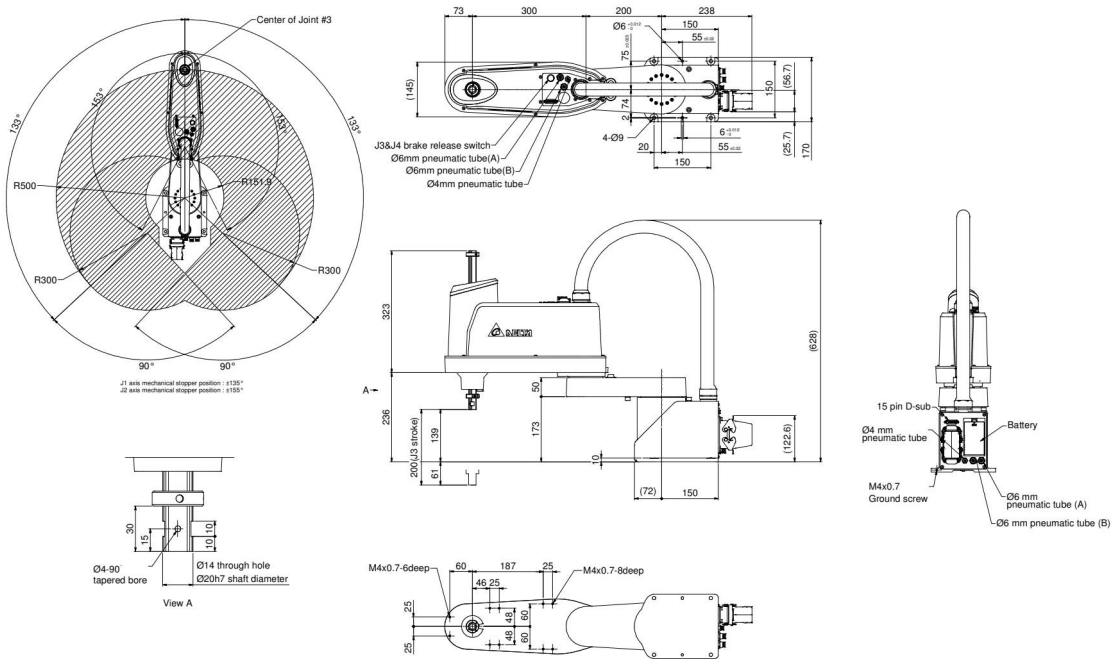
## DRS40L Series

DRS40L3SS1BN002 / DRS40L3SO1BN002



## DRS50L Series

DRS50L6SS1BN002



# DRS60L Series

## DRS60L6SS1BN002 / DRS60L6SN1BN302

