



Integrated Vision System

DeltaBot™ is equipped with an intelligent vision system, enabling performance of fast and complex material handling tasks. The DeltaBot™ control system can be configured for seamless integration of a wide range of vision systems, making it an effective solution for inspection and sorting applications.

Compression Capability

The pneumatic cylinder, which constitutes the central spine of the DeltaBot™, enables application of compressive forces in excess of 150lbf and extends DeltaBot™ capabilities to a wider range of applications than conventional designs.

Integrated Conveyor Tracking

DeltaBot™ is capable of dual conveyor tracking for painless and flexible integration of any complex pick and place application. The control system of DeltaBot™ supports most industrial encoder formats and requires no external signal modulations.

Applications

DeltaBot™ provides an efficient means of performing a wide range of applications including:

- ❖ Packaging
- ❖ Part handling
- ❖ Sorting and inspection
- ❖ Component assembly
- ❖ Box and pallet handling
- ❖ Polishing and deburring
- ❖ Food handling (wash down models available)
- ❖ Water-jet slitting and cutting

How DeltaBot™ works?

DeltaBot™ has a kinematic architecture similar to the Delta configuration, which provides a high stiffness to inertia ratio. Moving inertia is further reduced by the innovative use of light cables in the DeltaBot's kinematic chains. Once energized, these kinematic chains not only become rigid, but are also loaded in one direction, eliminating the backlash inherent to joints and gearboxes.

DeltaBot™ Specifications:

- ❖ 2 to 6 degrees of freedom
- ❖ 120+ pick-and-place cycles per minute
- ❖ Workspace: Scalable to several meters
- ❖ Payload: 1-20+ kilograms
- ❖ End-Effector compression capability: 150lbf
- ❖ Low inertia and high stiffness for high cycle rates
- ❖ Zero foot print design
- ❖ 12 Digital Input / 8 Digital Output and 1 Pneumatic end-effector output
- ❖ Dual Conveyor tracking
- ❖ 2 GigE camera or Cognex™ / Dalsa BOA Smart Camera Support

AEMK Systems Cable Robots

DeltaBot™ is a fusion of innovative vision systems with ultra high-speed cable robots, providing a revolutionary, cost-effective, and flexible solution for a wide range of automation applications.

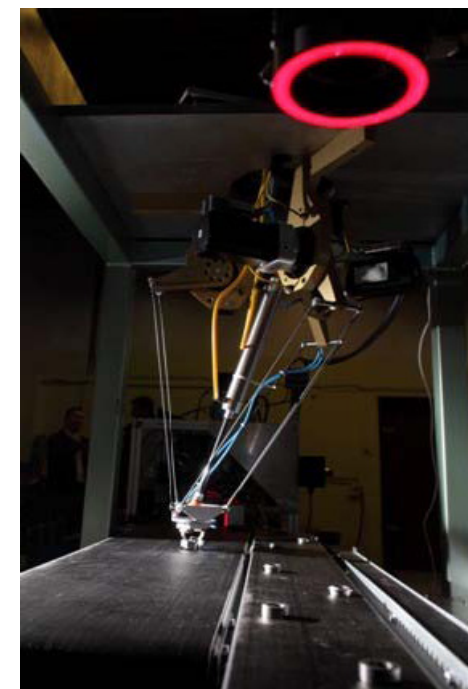
DeltaBot™ Highlights

Low Maintenance and High Reliability

The use of flexible cables instead of rigid links enables DeltaBot™ to perform with exceptionally high accuracy, repeatability and reliability, while requiring virtually no maintenance.

Cost-Effective

The innovative use of cables drastically decreases component cost and fabrication time, making DeltaBot™ a more cost-effective solution than other parallel robot designs. The zero footprint configuration also saves



precious valuable factory floor space. In addition, DeltaBot™ is based on an open architecture control platform using well established control solutions and fully supported components though-out. This results in significant savings in training, support, service, and integration.

Versatile

The unique mechanical properties of the DeltaBot™ enable a broad range of applications. DeltaBot™ is extremely effective in high-speed assembly and packaging. In addition, due to its stiff and rigid design, it can also resist reactive force and perform in higher payload operations.

High Payload Capability

DeltaBot™ has a much higher payload capacity compared to other delta robots, thanks to the use of cables. The DeltaBot™ is available in a range of sizes to accommodate varying high payload capacities, typically from 10kg to 30kg. For higher payload capacity please contact AEMK Systems.

- ❖ Seamless Integration
- ❖ High payload capacity
- ❖ Zero Backlash with High Accuracy
- ❖ High Reliability
- ❖ Cost-Effective
- ❖ Zero Footprint
- ❖ Versatility
- ❖ Integrated Vision
- ❖ Compression Capability
- ❖ Integrated Conveyor Tracking
- ❖ Scalable Workspace





- High Accuracy and repeatability**
- Low Maintenance**
- High Payload**
- Cost-Effective**
- Zero Footprint**
- Integrated Vision and Conveyor Tracking**
- Capable of Applying High Compressive Forces**
- Scalable Workspace**

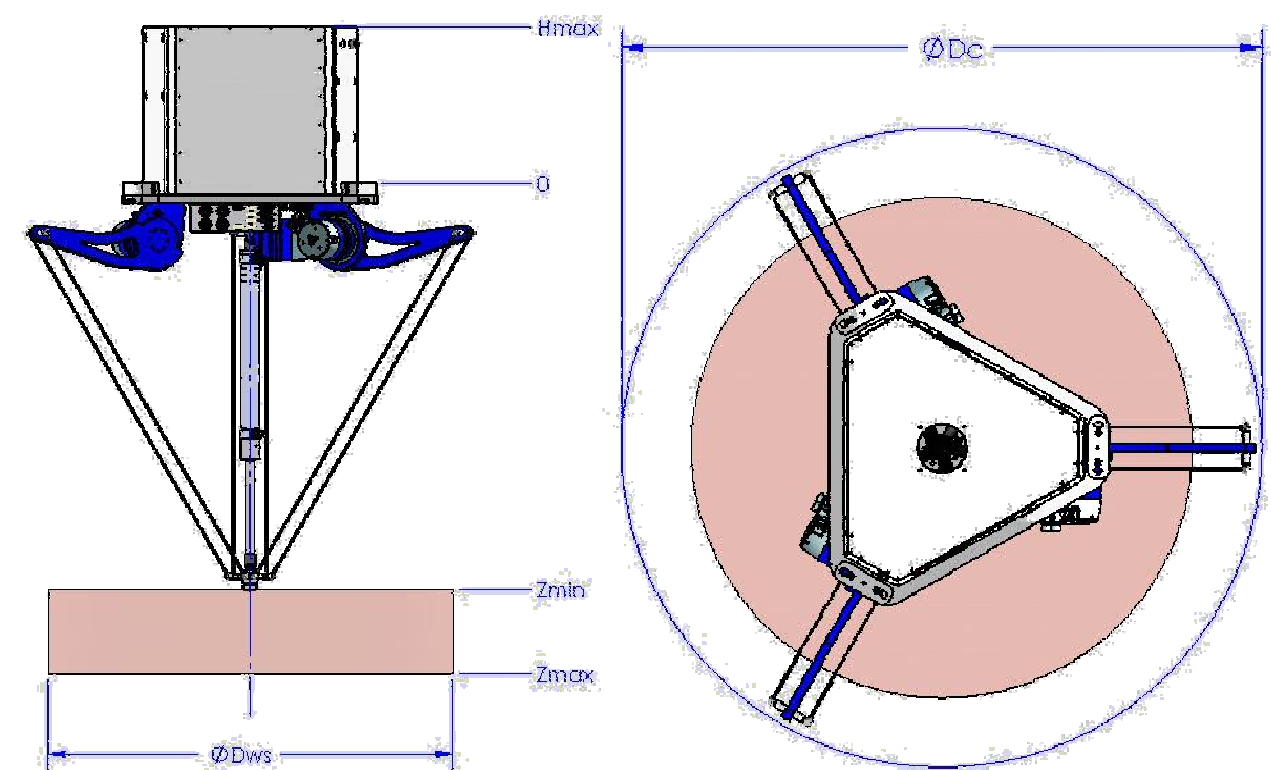
Parameter	DbX-400-200	DbX-800-250	DbX-1200-250	DbX-1600-250
Weight [Kg (lbs)]	60 ¹ (132)	160 (353)	160 (353)	190 (375)
Rated Payload [Kg (lbs)]	1 (2.2)	1 (2.2)	1 (2.2)	1 (2.2)
Maximum Payload [Kg (lbs)]	10	20	20	30
Repeatability [mm]	0.06	0.07	0.07	0.1
Accuracy [mm]	0.15	0.25	0.25	0.37
Speed [Cycles/minute] ²	120	120	120	100
Rated Current [A]	20	25	30	30
Rated Voltage [V]	208VAC/3 Phase – 50/60 Hz			
Number of Axes	3 Translational axes + 1 Optional Rotation Axis			
Mounting	Inverted			
Expansion Module	<ul style="list-style-type: none"> - Up to 2 GigE Camera or Cognex™ / Dalsa BOA™ Smart Camera Support - Additional 12 Digital Input/8 Digital Output 			
Protection	IP 65			
Options	<ul style="list-style-type: none"> - Integrated vision system - Conveyor tracking 	<ul style="list-style-type: none"> - Teach pendant - Food grade and wash-down designs 		

DeltaBot™ Specifications Sheet

DeltaBot™ is available in four standard models. Due to the patented cable architecture, DeltaBot™ is a fully scalable solution and custom work-enveloped/workspaces are available on request.

Workspace and Unit Dimensions

Dimension ³	DbX-400-200	DbX-800-250	DbX-1200-250	DbX-1600-250
Zmin [mm]	612	1009	1209	1210
Zmax [mm]	821	1259	1459	1460
Dws [mm]	400	800	1200	1600
Dc [mm]	640	1448	1510	1670
Hmax [mm]	N/A	467	467	467



¹ The weight of the control panel is not included in total weight of model DbX-400-200 as the control panel is mounted separately from the robot. All other models have the controls mounted above the mounting plate to create a zero footprint configuration.

² The Cycles are measured at the rated load along a 25mm up, 300mm across, 25mm down

³ The dimensions of the workspace are subject to change without notice.



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