

## **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 employment 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**

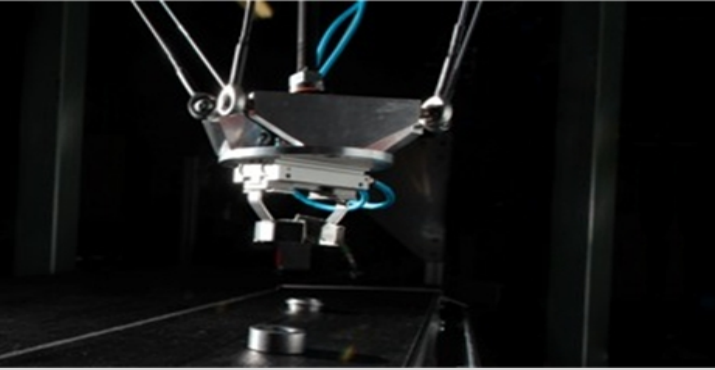
The innovative use of cables in DeltaBot™ drastically decreases component cost and fabrication time and hence qualifies DeltaBot™ as a cost-effective solution compared to other parallel robot designs.

The zero footprint configuration also saves precious 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 it to be applied in 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.

- ❖ **Zero Backlash with High Accuracy**
- ❖ **Low Maintenance**
- ❖ **High Reliability**
- ❖ **Cost-Effective**
- ❖ **Zero Footprint**
- ❖ **Versatility**
- ❖ **Integrated Vision**
- ❖ **Compression Capability**
- ❖ **Integrated Conveyor Tracking**
- ❖ **Scalable Workspace**



## Integrated Vision

DeltaBot™ is capable of performing fast and complex material handling tasks with an intelligent vision system. The control system of DeltaBot™ can be configured for seamless integration of a wide range of vision systems. This makes DeltaBot™ an effective solution for inspection and sorting applications.

## Compression Capability

The pneumatic cylinder, which constitutes the central spine of DeltaBot™, provides it with the capability of applying compressive forces in excess of 150lb. This enables the robot to be used for a wider range of applications.

## 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
- ❖ Small part handling
- ❖ Sorting and inspection
- ❖ Component assembly
- ❖ 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. Such a parallel configuration inherently provides a high stiffness to inertia ratio. DeltaBot™ further reduces the moving inertia by its innovative use of light cables in its kinematic chains. Once energized, these kinematic chains in DeltaBot™ not only become rigid, but also are 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 minutes
- ❖ Workspace: Scalable to several meters
- ❖ Payload: 1-5+ kilograms
- ❖ End-Effector compression capability: 150lb
- ❖ 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
- ❖ 2 Conveyors tracking
- ❖ 2 GigE Camera Support



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