



**Industry Notification - Electronics Industry**

# **Delta Linear Pocket Actuator Pick and Place Solution**

IABG Global Solution Center  
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# Linear Pocket Actuator Pick and Place Solution

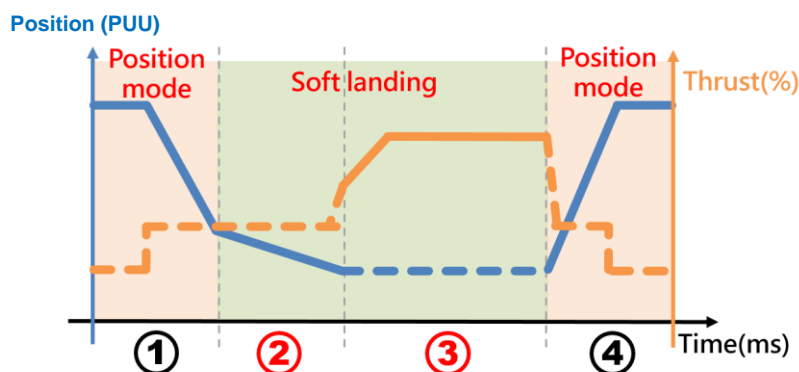
## Introduction

This solution employs Delta Linear Pocket Actuator, combined with AC Servo System's custom development platform for accurate pick & place and press motion. The linear pocket actuator is built based on the U-shaped linear motor featuring linear scale and spring to offer a compact design to significantly reduce footprint and save development time. The drive's built-in motion control kernel enables instant switch between position, velocity and torque mode, as well as soft landing and pick & place motion planning, and allows users to develop custom functions as required.

## Application

This solution is mainly used in optical and semiconductor industry for assembling of cameras of mobile phones and tablets, semiconductor wafer depiler, circuit tester and insertion machine.

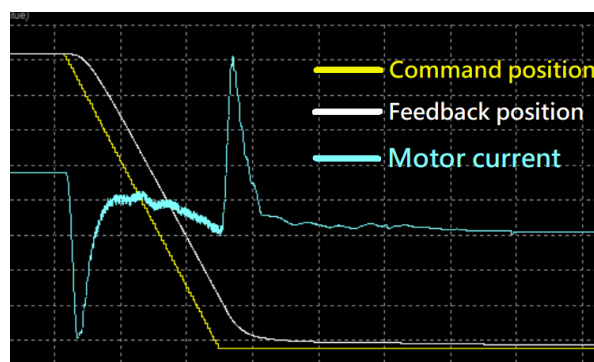
## Soft landing flow chart



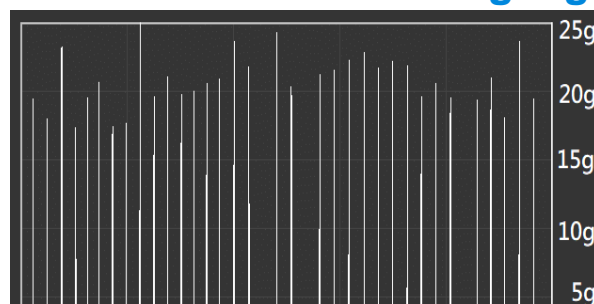
## Process

1. Descends rapidly under position mode, and quickly moves to where above workpiece.
2. Switches to velocity mode and descends slowly with the current limit for soft landing that the suction nozzle comes into contact with workpieces without overpressure.
3. Switches to torque mode and ensures the linear pocket actuator outputting a constant thrust onto the workpiece to maintain contact.
4. Switches to position mode to rapidly pull back to the home position.
5. Moves to place point with XY platform, then repeat step 1~4 to place workpieces.

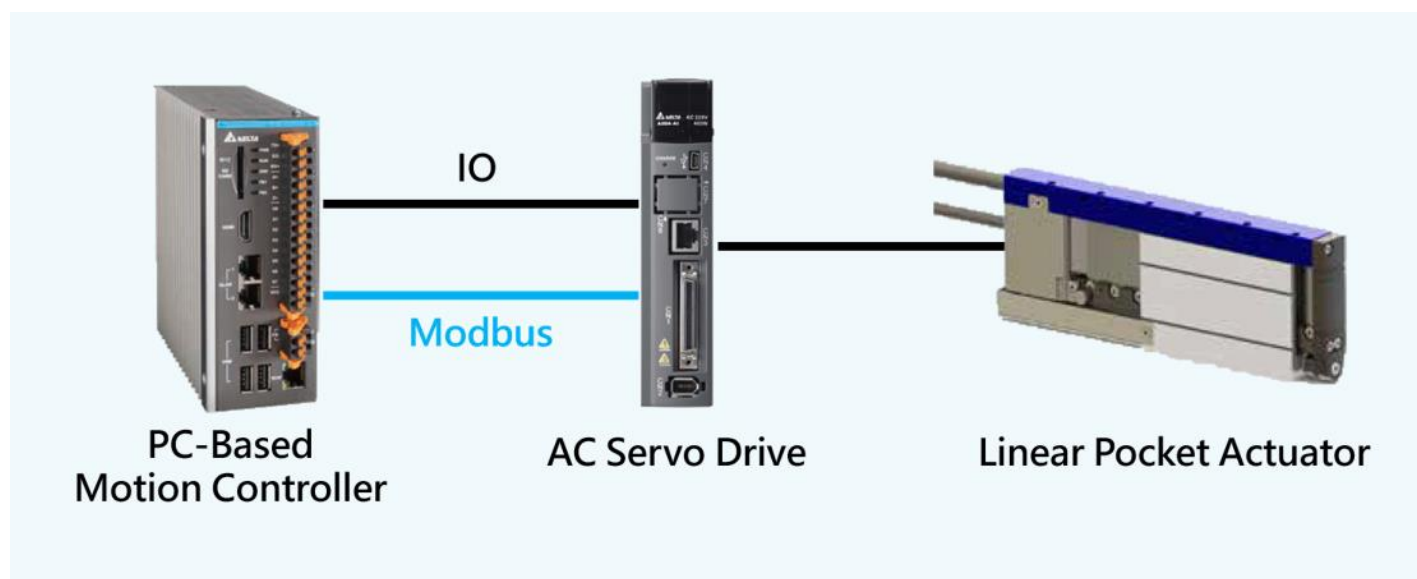
## Soft landing oscillogram



## Pressure test with force gauge



## Solution Architecture



## Features and Advantages

### Supports Multiple Communication Protocols

- Supports EtherCAT communication, capable of updating data from up to 100 stations within 1ms in real time, offering motion control for 64 axes.
- Supports Modbus communication for easy connection and control of peripheral devices.
- Delta PC-based Motion Controller features compact design for simple installation and application.

### Built-in Custom Development Platform

- Delta AC Servo Drive System has built-in custom development platform enables instant mode switch and custom program development, with a wide range of applications.
- High precision and high performance servo drive, supporting linear motors.

### Capable of Soft Landing with Modular Linear Motor Design

- Modular linear motor design with a thickness of 12mm, allowing synchronous control of multiple axes.
- The linear scale offers a resolution of up to 4nm.
- Combined with custom development platform for soft landing.

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