AT3-310 Automated Programming System

A professional multiple pick & place auto programmer for ICs on / in Tray, Tube and Tape

AT3-310 is a professional multiple pick & place auto programmer for ICs on / in tray, tube and tape. System provides intelligent operation for IC programming/ testing, tape-out-marking and packing conversion with powerful software control. The resident Programming Units offer efficient and reliable multi-site IC programming.Optional tape-out-marking is available after programming. A variety of I/O devices can be mounted and changed easily providing flexibility of input / output options basing on IC packing form. System handles 4 units each pick & place thus improve throughput up to ~2200 UPH for ICs with programming time less than 38 sec.

Key features

■ **Excellent performance**

The system can operate a variety of input and output options with tray, tube and tape I/O devices thus provides programming / testing, tape-out-marking and packing conversion for most of IC products on / in tray, tube and tape.

■ **Intelligent operation**

Automatic multiple pick & place operation in sequence of IC loading / pickup / positioning / insertion / programming / sorting / optional marking / unloading with powerful software control.

■ **Accurate positioning**

System is equipped with two precise CCD. One fixed, upward CCD for IC positioning while the other carried, downward CCD for sockets / pick & place spots positioning.

■ **Reliable programming**

The built-in programmers, ALL-100AX / FLASH-100 series, are designed with high speed CPU, resided FPGA, high capacity pin drivers and USB interface, thus providing a high speed, low noise, stable and reliable programming platform.

■ **Multi-site programming**

Programming Module may have 1, 2, 4, 6 or 8 sockets on board considering programming time. Up to 8 sites x 4 sets = 32 sites can be programmed simultaneously, thus eliminating / minimizing handler idle time when programming high density memory devices.

■ **High throughput**

~2200 UPH, about 6.4 sec. handler index time for each 4 units of pick & place. System offers ~2200 units / hour consistent throughput for ICs with programming / testing time less than 38 sec.

■ **Optional marking**

System provides optional dot / alphanumeric tape-out-marking after programming / testing.

■ **Easy change-over & maintenance**

Easy and fast change-over of socket modules and I/O devices when switching IC products among tray, tube and tape. Power-on self diagnostics, I/O Mode utility and module design allow system easy for maintenance, repair and replacement.

■ **Powerful operation software**

Both setup data and test results are automatically saved for next power-on operation as well as for quality / yield traceability. Graphical user interface makes it easy to access.

Specification

■ **Motion**

- X-Y drive : High performance servo drive system
- Transmission : Ball screw & linear guide mechanism
- Resolution : X axis: ±0.02mm, Y axis: ±0.02mm, Z axis: ±0.02mm
- Max. stroke : X axis: 780mm, Y axis: 450mm, Z axis: 30mm
- Theta axis resolution : 0.15°
- Pick & Place head placement accuracy : ±0.03mm

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■ Vision

- Camera : Fixed CCD: 640 x 480 pixels.
  Carried CCD: 640 x 480 pixels
- Field of view : 25mm x 25mm
- Vision alignment : IC corner leads
- Vision accuracy : ±0.01mm
- Vision process time : ~ 0.1 sec / unit

■ Programming

- Resident programmer : ALL-100AX / FLASH-100 series universal programmer
- Programming site : 8 sites x 4 sets = 32 sites
- Pin driver : 68 universal pin drivers per set
- Applicable products : PROM, EPROM, EEPROM, FLASH, MCU, PLD, PAL, FPGA... etc.
- Applicable packages : SOP, SSOP, PLCC, MLF, TSOP, QFP, TQFP, BGA, µBGA…etc.

■ Marking

- Marking : Optional tape-out-marking with dot (1.5mm ~ 2.0mm) or alphanumeric (2mm x 3mm)

■ Throughput

- Handler index time : ~ 6.4 sec. for each 4 units of pick & place
- Throughput : ~ 2200 UPH for Tray to Tray, Tube to Tube or Tape to Tape (dual Tape In setup) operation

I/O devices

- Auto Tray : Auto tray move in, move out and replacement
  Stack up to 20~25 JEDEC trays for fresh / pass units
- Semi-auto Tray : Auto tray move in, move out but manual replacement for fresh / pass units
- Manual Tray : Two JEDEC trays for manual input / output or spares / rejects binning
- NG Plate : One small plate for prog. & other rejects
- Tube Input : 150mil, 208mil, 300mil… packages available.
  Load capacity : 4 tubes
- Tube Output : 150mil, 208mil, 300mil… packages available.
  Load capacity : 6 tubes (4P + 2F)
- Tape Input : Available for tape with 12 ~ 32mm tape width
  Up to 2 sets can be installed in parallel
- Tape Output : Both heat sealing & pressure sealing modes available
  Accept tape with 12 ~ 32mm tape width

■ Control

- Built-in Controller : PC-based control with Windows XP
- Data entry / Display : 17” LCD touch panel

■ Power & Air

- Power : AC voltage : 200 ~ 245V / 50-60Hz Single phase
  Power consumption : 1.3 KVA
- Air : Air pressure : 0.6 MPa (~6.0 kg/cm^2)
  Air consumption : 32 liter/min.

■ Dimension

- Base Unit W x D x H : 1500mm x 750mm x 1510mm
  (H: 1775mm with tower light installed)
- Base + Tray I/O W x D x H : 1500mm x 1435mm x 1510mm
- Base + Tube I/O W x D x H : 1500mm x 1150mm x 1510mm
- Base + Tape I/O W x D x H : 1500mm x 1705mm x 1510mm

■ Weight

Base Unit : ~ 600 kg

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