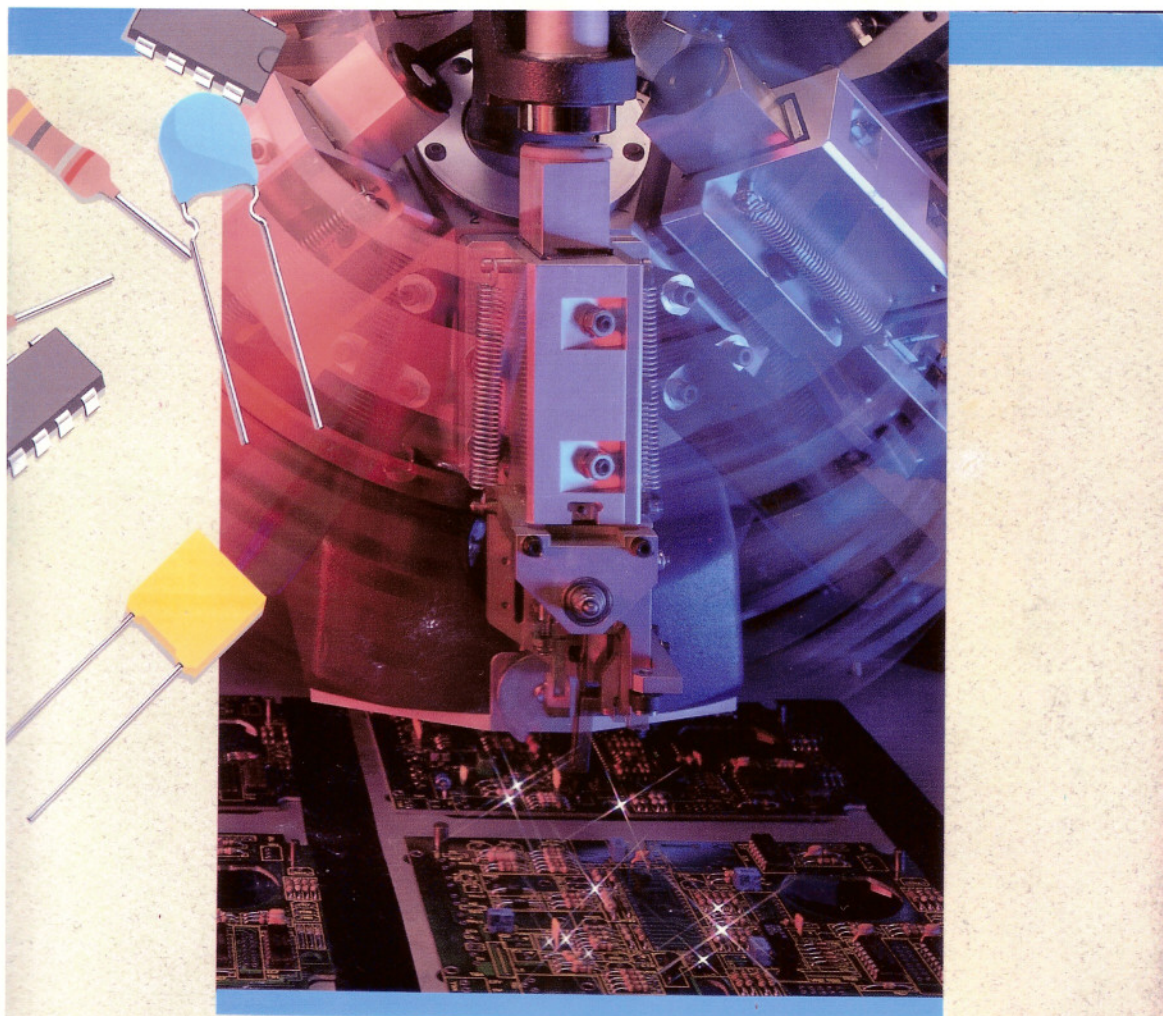


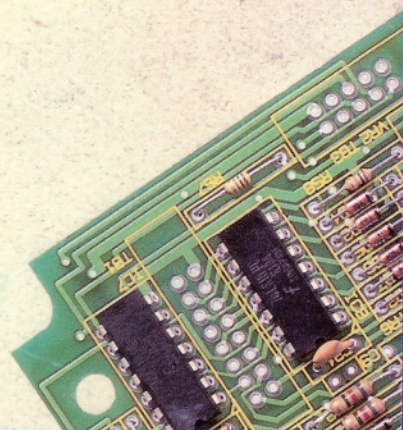
Dorset Automation Services

ROBIN



R ● **B** **I** **N**

FULLY AUTOMATIC
INSERTION OF DIL,
AXIAL AND RADIAL
COMPONENTS

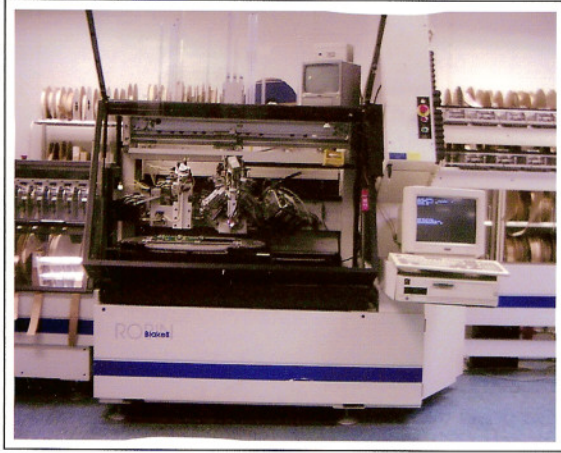


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ROBIN

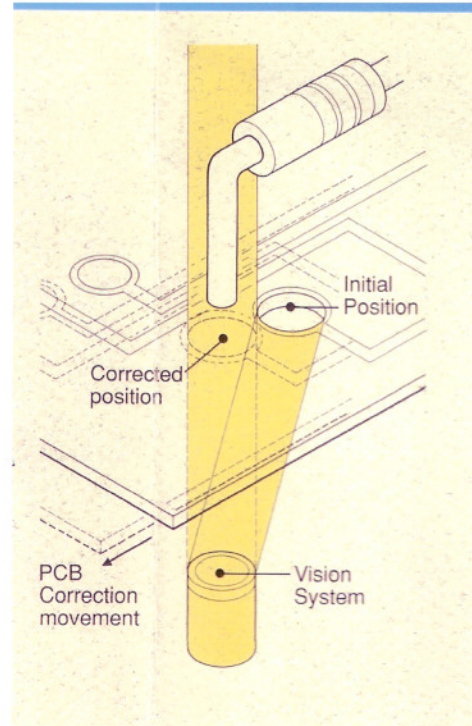
Robin - Dorset Automation Services fully automatic insertion system of DIL, Axial and Radial components.



Automatic Component Insertion (ACI) means consistent quality and lower manufacturing costs. The "Robin" now makes ACI available to a wide range of users.

Prior to insertion, the board is rotated, if required and moved to the pre-programmed position. Any hole alignment errors detected by the **Vision System** are corrected and the component inserted.

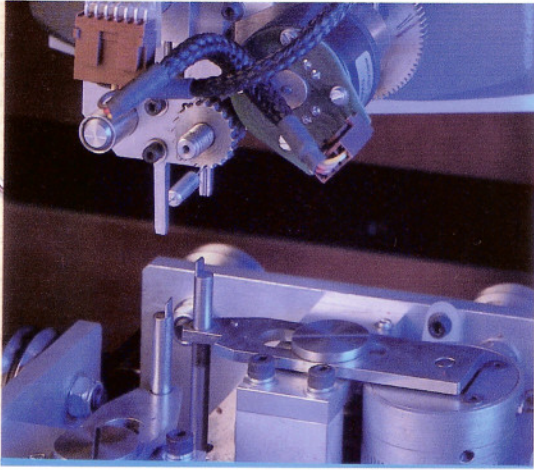
The innovative **Vision System** checks that



the insertion holes are positioned under the component leads and corrects for any misalignments. This enables "Robin" to insert into boards not designed for Auto-insertion as well as allowing for wider board manufacturing tolerances. Furthermore, a tighter lead to hole ratio can be used thus improving the clinch quality.

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ROBIN



Kitting of "Robin" is simple and easy. Batch related kits can be prepared off-line and loaded on the machine in a few minutes.

Axial components are pre-cut and held securely in boxes which are loaded in magazines onto the right hand side of the machine. An optional **Direct Bandolier Feed** allows taped **Axial** components to be used directly from standard reels or boxes. Standard 0.3 and 0.6 inch **DIL** tubes are held in cassettes which are positioned at the rear of the "Robin".

The optional **Radial** feed will take up to 10 standard reels of taped components.

Programming of the "Robin" is simple. it is achieved on the **Off-Line Workstation** by keying in component physical data and digitising their positions straight from the artwork. The workstation software runs on a standard PC running Windows95, Windows98, WindowsNT and WindowsXP. The data format for the databases created using the "Robin" workstation is compatible with the 'Jet' database engine. The .MDB files created can be edited by the Microsoft Access 2 database directly and can also be created from CAD data by manipulating data to generate "Robin" job files.

The "Robin" workstation software analyses the components and their geography in order

to determine the correct sequence to maximise the insertions- all fully automatically.

After the batch size has been decided, kitting information and Robin control instructions are produced.

One or more boards are placed on an Adaptor plate. There may be a single image or multiple 'Step and Repeats'.

After insertion, the clinched component leads allow the safe handling of assemblies during subsequent processes.

Due to the small 'footprint' of the clinch tools, the "Robin" has the ability to insert components in 'Mixed Technology' surface mount and through hole boards even with SMT components mounted on the underside of the board.

The "**Robin**" System leads to improved quality and reduced rework, while it's versatility makes it easy to integrate into the **Just-In-Time** environment with constant and flexible production.

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ROBIN

Specifications:

Dimensions & Weight

Height: 2000 mm (79")
Width: 1753 mm (69")
Depth: 1552 mm (61")

Power Requirements

100/260 V ac 50/60 Hz 500 VA

Compressed Air

Dry air at 4.4 - 6.8 bar, 1.31 l/sec max
(80 - 100 psi, 2.7 cfm)

Operating Environmental Conditions

Temperature: 18° C - 26° C
(64° F - 79° F)
Relative Humidity: 0-80% non
condensing
Max Rate of Change for ambient
temp. of machine: 1°C/hour

Speed

Maximum insertion rates (cycle times
component to component)

Axial: 1.8 secs/component 2000/hr
DIL: 2.3 secs/component 1565/hr
Radial: 4.5 secs/component 800/hr

Effective throughput depends on
component mix, board layout and
feed hopper positions.

Axial Components

Body Diameter: 0.7 - 8.0 mm
(0.028"-0.315")
Body Length: 20 mm max.
(0.79")
Lead Diameter:
Copper Leads 0.37 - 0.9 mm
(0.015"-0.036")
Steel Leads 0.37 - 0.5 mm
(0.015"-0.020")

Lead Lengths for loading
into Boxes: 48[±] 0.75 mm
(1.89" [±] 0.03")

Axial Components (continued)

Body Centralisation / Difference in Lead
Length each side of body:
0.37 mm Max
(0.015")

Insertion Pitch: 7.62 - 25.0 mm
(0.3"-1.0")

DIL Components

0.3" DIL: 8 to 24 pin
0.6" DIL: 24 to 40 pin

Body 2.03 - 4.57 mm
Thickness: (0.081"-0.180")
Lead Length: 3.05 - 4.83 mm
(0.120"-0.190")

Radial Components

Pitch: 0.1" & 0.2"
(2.54 - 5.12 mm)
Lead Dia. 0.37 - 0.7 mm
(0.015"-0.028")

Printed Circuit Board

Maximum 380 x 380 mm
Insert Area: (15"x15")

PCB 0.75 - 3.2 mm
Thickness: (0.030"-0.125")

Recommended

Component Lead Dia +
Hole Size: 0.1 - 0.2mm
(0.004"-0.008")

Work Holder (Platen)

Thickness
Standard: 6mm +/- 0.1 mm
(0.236" +/- 0.004")
Optional: 0.25" +/- 0.004"
(6.35 mm +/- 0.1 mm)

The **Robin** can be set up for either Standard
or Optional thickness.