



Electronic Circuits

Design – Assembly – Test

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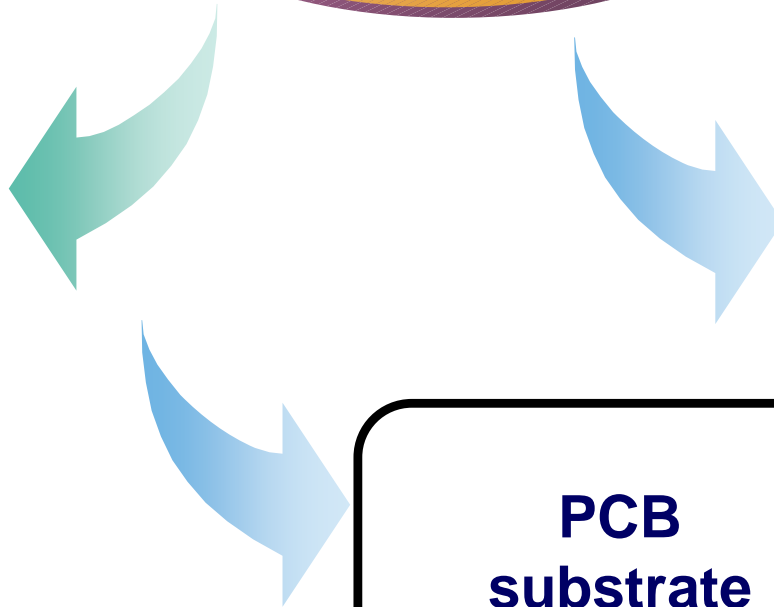
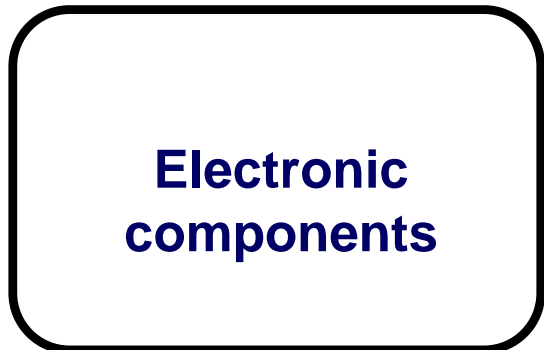
Design



- Special department dedicated to PCB design
- Personnel number 5
- Software CADSTAR and ORCAD
- Number of layers 1 to 6
- Technologies SMT - THT – hybrid
- Track width min 0.15 mm
- Comprehensive component description library
- Multiboard panel design

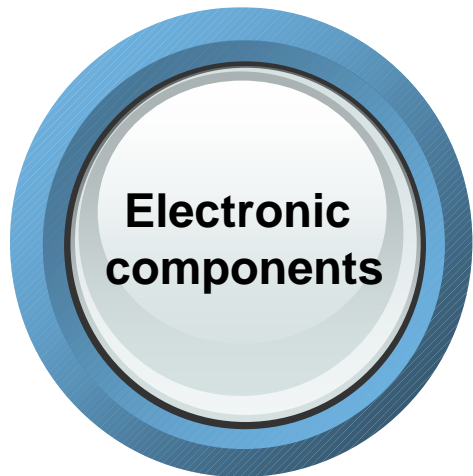


Assembly





Assembly



- Special department for the procurement of the electronic components
- Technical and technological assistance for electronic components supply and use
- Sources of supply
- Library of descriptions for component mounting by SMT and THT
- Compliance with RoHS requirements



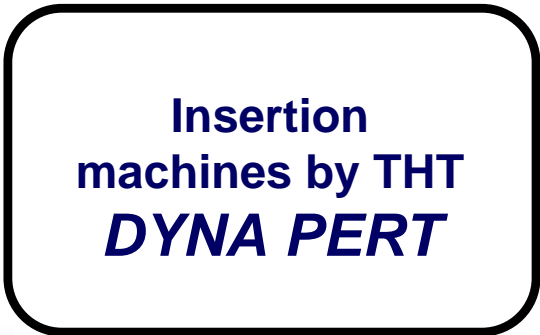
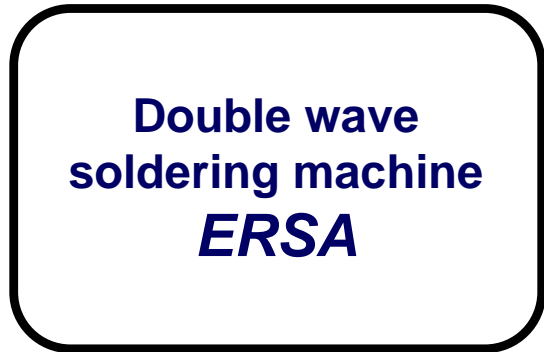
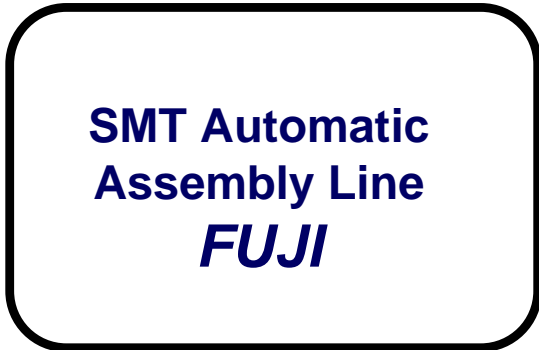
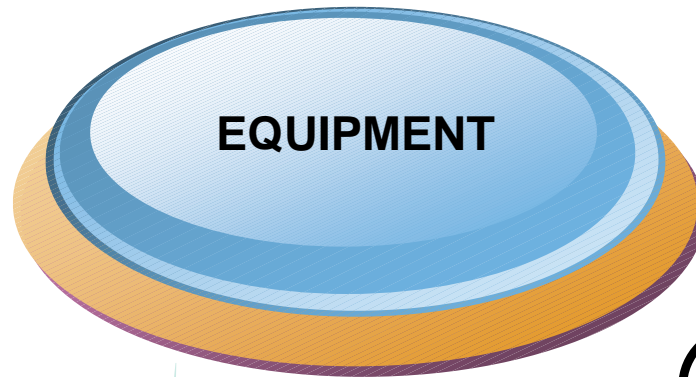
Assembly



- Substrate material
 - Glass epoxy laminate
 - Composite
 - Paper phenol
 - Ceramic
 - Flexible polymer film
- PCB current suppliers: over 5
- Final deposition: HALS, gold flash, OSP, etc.
- According to RoHS requirements
- Technical and technological assistance for the fulfillment of machine/equipment requirements



Technologies





EQUIPMENT



- Maximal placement rate: 23,000 components / hour
- Double sided assembly
- Automatic feed
- Component size: from 0201 to IC 54 x 54 mm
- Component range (passive and active components) : resistors, ceramic capacitors, tantalum / aluminum electrolytic capacitors, bobbins, trimmers, micro switches, diodes, IC, etc.
- Component types: square chip, MELF components, LED, SOJ, glass-tube diode, SOIC, PLCC, VSOP, QFP, BGA, components without symmetry axis
- Pitch: 0.5 mm
- Component supply: tape & reel, stick, trays
- PCB thickness 0.8 - 4 mm
- PCB's minimal dimensions 90 x 50 mm
- PCB's maximal dimensions 356 x 457 mm

SMT
Automatic
Assembly Line
FUJI



EQUIPMENT

**SMT
Automatic
Assembly Line
FUJI**

GSP-3 Automatic Screen Printer



- Optical support system at printing
- Automatic alignment of printing mask
- Programmable printing speed
- Programmable printing cycle
- Control of PCB circulation
- Three methods for PCB fixing: lateral, vacuum, both .
- Internal heating system

FGL-V High-Speed Glue Dispenser



- Integrated viewing system for the control of glue drop and PCB position
- Dripping speed 0.13 s /dot
- Dripping accuracy $\pm 0.15\text{mm}$
- 3 programmable syringes
- Large range of drippers for SMDs
- Providing steady viscosity
- Temperature control in the processing room



EQUIPMENT

SMD-FUJI
Pick&Place

FCP IV-3 4000 High-Speed Chip Placer



- Feed: rolls
- Turret Type 12 Placing Heads, each placing head carries 3 sizes of Pick & Place nozzles
- SMD range: 1005 (0402).....PLCC52
max. 16.5 x 20 mm backlight
max. 20 x 20 mm frontlight
- Component types: 160x8mm (2x80)
- 3 feed modes using 2 tables
- Placing accuracy: ± 0.1 mm
- Theoretical placement rate: 0.15s/comp.
- Practical placement rate: 15-18000cph
- Repeatability: 99.99%
- 5000 sequences/program maximum

FIP-II-4000 Multifunction Placer



- Feed: roll, stick, tray
- 2 pick&place heads, 2 nozzles/head, max.7 nozzles
- Component types: 74x8mm max. +10 trays
- Tray feed unit
- Placing accuracy : ± 0.1 mm
- Speed: 0.7s/component(5100cph) for chips, approx.4s/component (900cph) for large QFP
- Repeatability: 99.99%



EQUIPMENT

SMT 400/3.2 Convection Reflow Soldering System

SMD-FUJI
Soldering



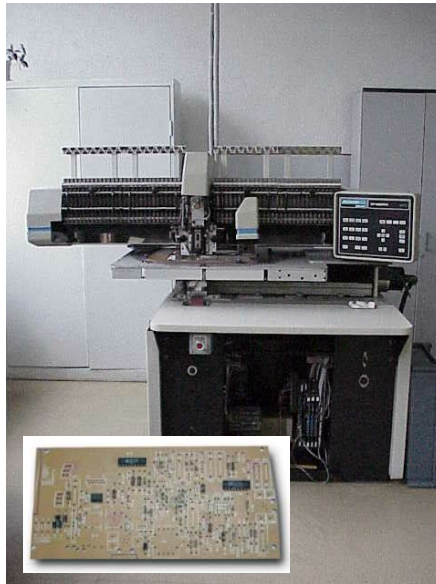
- Standard system with 5 areas
- Conveyer with driving motor
- Conveyer greasing device
- Device for central support of PCB with driving motor
- Asymmetric adjustment support
- Temperature reduction for adhesive polymerization
- Operating interface



EQUIPMENT

IC INSERTION MACHINE

THT
DYNA PERT



- Feed: stick
- Component types: 6.....20 leads
- Component material: ceramic, plastic
- Placement rate: 5000 components/hour
- Machine working area: 457.2x457.2mm

VCD-F AXIAL INSERTION MACHINE



- | | |
|------------------------|------------------------|
| ▪ Feed | sticks |
| ▪ Component dimensions | 9.5 x 28mm max. |
| ▪ Lead diameter | 0.42...0.91 |
| ▪ Tape range | 41.65.....77.72 |
| ▪ Working area | 457.2 x 457.2 mm |
| ▪ Placement rate | 6000 components / hour |

UCSM-C SEQUENCER



- feed: rolls, conveyer
- Interval between components: 5 -10 mm
- Number of stations: 60



Testing



- PCB assemblies and related products are tested with equipment designed and manufactured in ELECTROMAGNETICA.





Thank you !

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