

EVO DEPANEL



ACCURATE AND DUST FREE ROUTING SYSTEM FOR PCBA DEPANELING APPLICATION

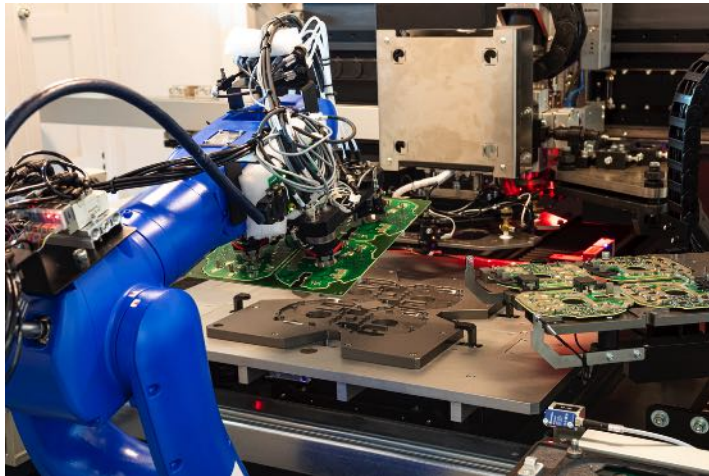


HIGHLIGHTS

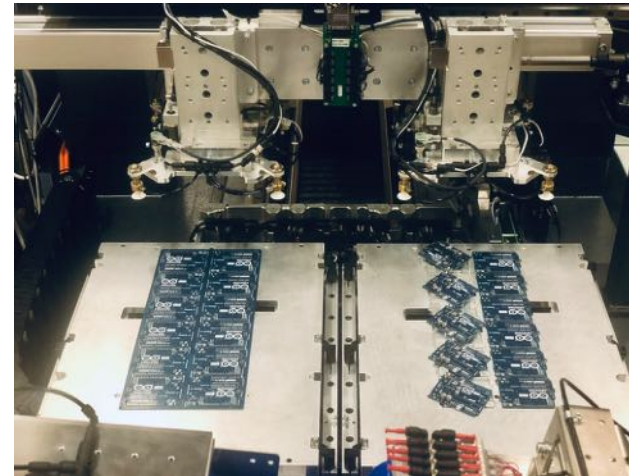
- ❑ AN INNOVATIVE SOLUTION FOR PANEL SEPARATION
- ❑ EXTREMELY HIGH ROUTING ACCURACY AND REPEATABILITY (<50u 3 Σ)
- ❑ REAL DUST FREE ROUTING
- ❑ TOP QUALITY FINISHING FOR ALL MATERIALS (FR4 , CEM, ALUMINUM)
- ❑ MAINTENANCE FREE LINEAR MOTORS ON ALL AXES
- ❑ HEAVY IRON CAST BODY FOR STABILITY AND PERFORMANCES
- ❑ SINGLE AND DOUBLE CASSETTE CONFIGURATION AVAILABLE
- ❑ MANUAL, SEMI AUTOMATIC AND FULLY AUTOMATIC PANEL LOADING UNLOADING
- ❑ MES AND FACTORY 4.0 READY
- ❑ GENEROUS WORKING AREA (310x410mm x2 - 12x16" x2)
- ❑ HEAVY DUTY ROUTING HEAD WITH CHOICE OF HIGH-SPEED SPINDLE GRANT ACCURACY AND REPETABILITY OVER TIME
- ❑ DEDICATED PRESSURE FEET CREATE THE PERFECT CONDITION FOR "REAL TIME" DUST REMOVAL IN A SINGLE STEP
- ❑ AUTOMATIC TOOL CHANGE AND BROKEN BIT DETECTION FOR UNINTERRUPTED OPERATION
- ❑ TOP CLEARANCE 35mm (1.57") BOTTOM 25mm (2.57") HIGHER ON REQUEST
- ❑ PANEL THICKNESS 0,5 TO 4,5 mm (FROM 0.20" – 1.7")
- ❑ 50 YEARS OF EXPERIENCE IN HEAVY ROUTING APPLICATION FOR PCB

SYSTEM VERSIONS

- SINGLE CASSETTE MANUAL
- SINGLE CASSETTE AUTOMATIC
- DOUBLE CASSETTE MANUAL
- DOUBLE CASSETTE AUTOMATIC

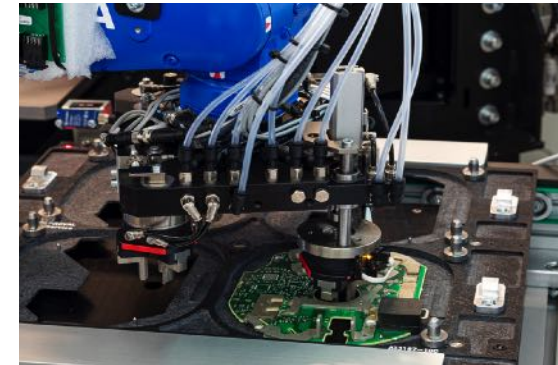
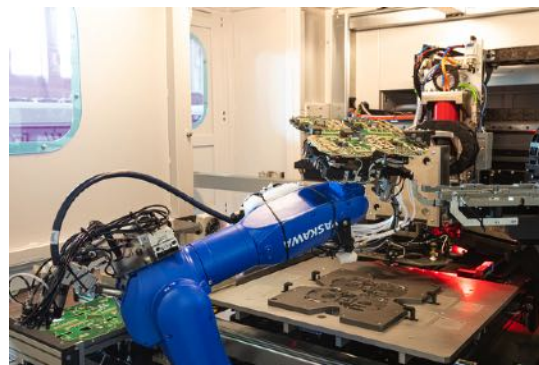
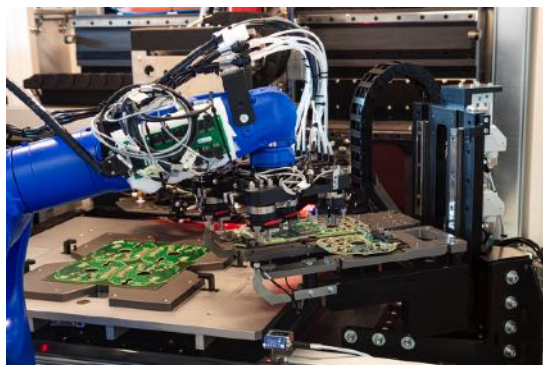
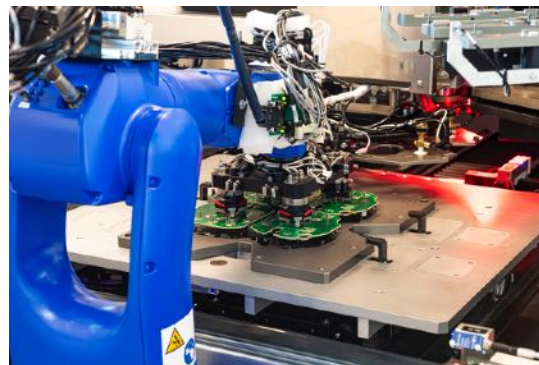
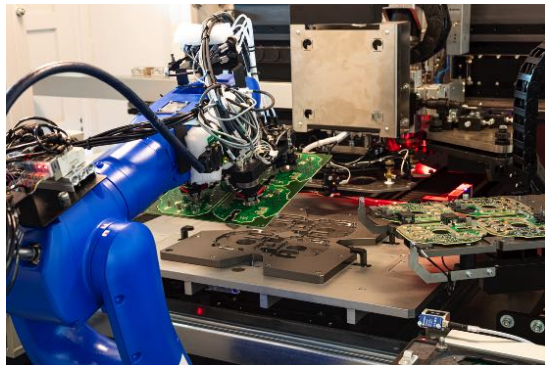


SINGLE CASSETTE



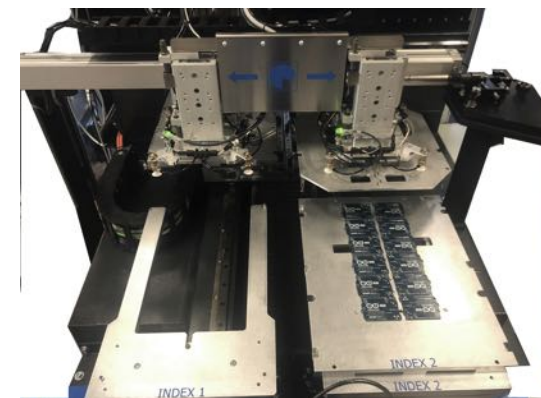
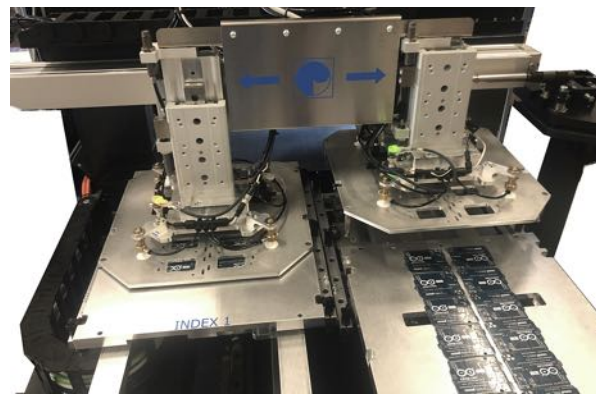
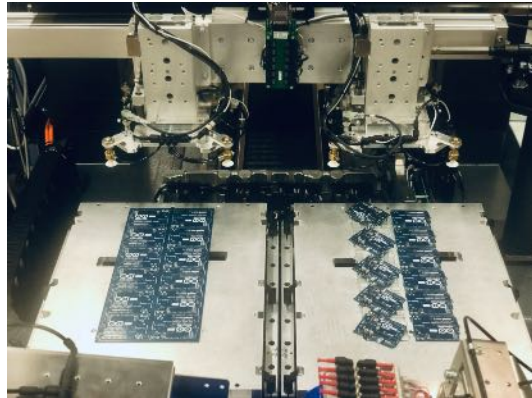
DOUBLE CASSETTE

AUTOMATIC LINE - ANTHROPOMORPHIC ROBOT



DOUBLE CASSETTE SYSTEM

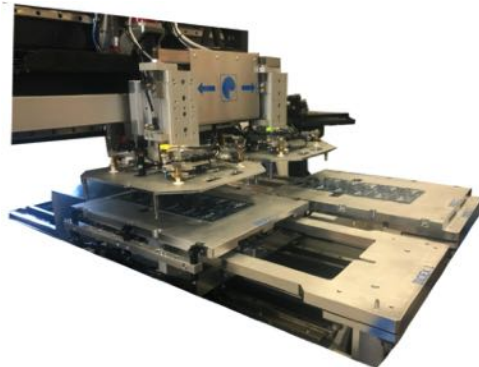
DOUBLE CASSETTE GRANTS PRODUCTIVITY AND FLEXIBILITY



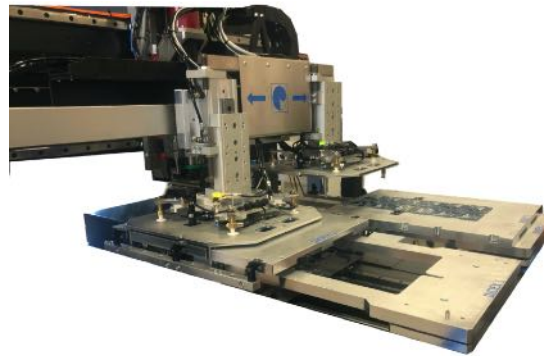
- ❑ DOUBLE CASSETTE WITH:
 - ❑ AUTOMATIC COVER MANAGEMENT (LAY DOWN – LAY UP)
 - ❑ AUTOMATIC FRAME REMOVAL AND DISPOSAL
- ❑ PANEL LOADING UNLOADING:
 - ❑ AUTOMATIC (ROBOTIC) OR
 - ❑ MANUAL PANEL LOADING UNLOADING
- ❑ AUTOMATIC TOOL CHANGE AND TOOL MEASUREMENT WITH LASER STATION
 - ❑ CHECK TOOL DIAMETER / BREAKAGE / LENGTH
 - ❑ CHECK SPINDLE RUN OUT
- ❑ FLIP STATION(S) AS NEEDED WITH AUTOMATION

DOUBLE CASSETTE SYSTEM

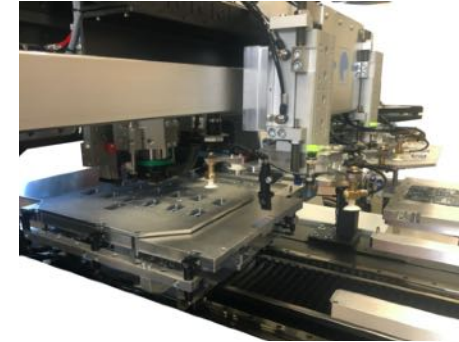
CASSETTE WITH COVER FOR ACCURATE DUST FREE ROUTING



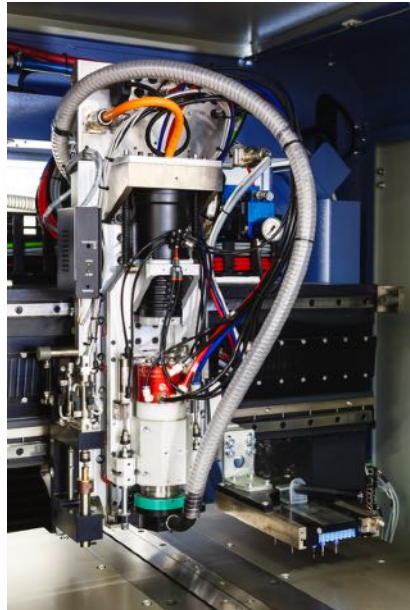
❑ CASSETTE MOVE TO COVER LAY-DOWN POSITION



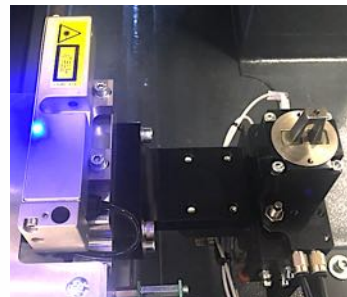
❑ COVER LAY-DOWN



❑ START ROUTING

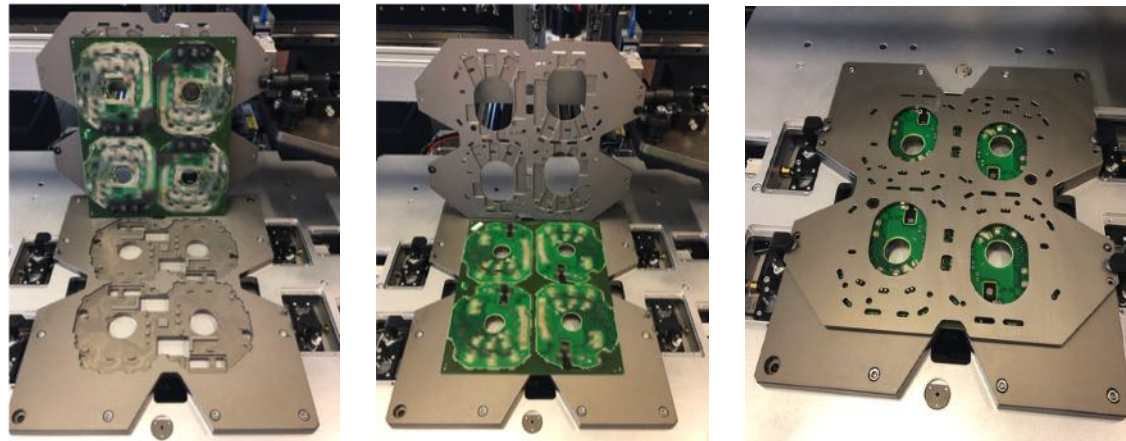


- ❑ HEAVY DUTY ROUTING HEAD WITH CHOICE OF HIGH-SPEED SPINDLE (50K RPM STD – HIGHER ON REQUEST) GRANTS ACCURACY AND REPETABILITY OVER TIME
- ❑ DEDICATED PRESSURE FEET CREATE THE PERFECT CONDITION FOR “REAL TIME” DUST REMOVAL IN A SINGLE STEP
- ❑ AUTOMATIC TOOL CHANGE AND BROKEN BIT DETECTION FOR UNINTERRUPTED OPERATION



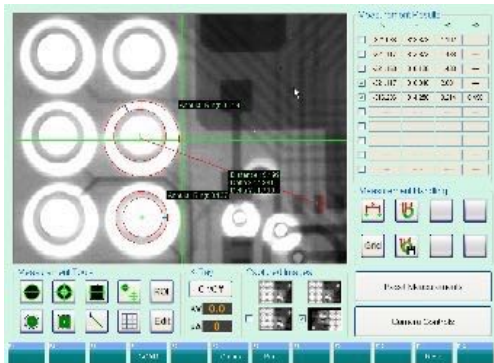
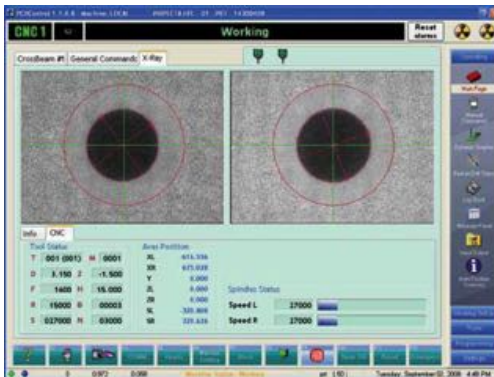
HIGH QUALITY ROUTING PROCESS

EXCLUSIVE FRAME CONCEPT ADVANTAGES:
POSITION LOCK FOR MAXIMUM ACCURACY
100% DUST REMOVAL
100% PROTECTION



- ❑ **REAL** TIME DUST FREE ROUTING – NO ADDITIONAL CLEANING STEPS
- ❑ FRAME WITH VACUUM CHANNELS GRANTS REMOVAL OF ALL DUST
- ❑ HEAVY-DUTY BODY AND ROUTING MECHANICS FOR OVER TIME STABILITY
- ❑ HIGH PERFORMANCE ROUTING SPINDLE WITH SPECIAL PRESSURE FEET FOR RELIABLE LONG-TERM CONSISTENCY

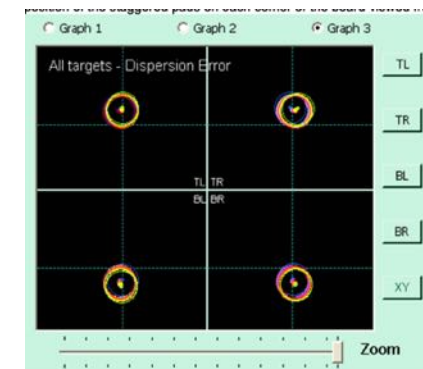
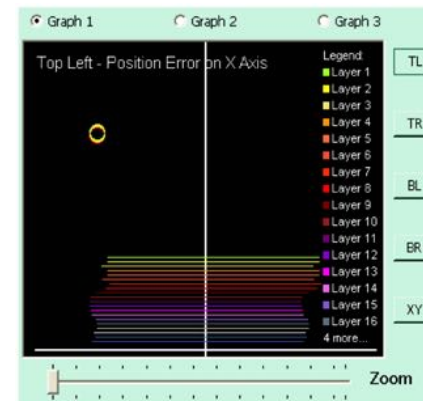
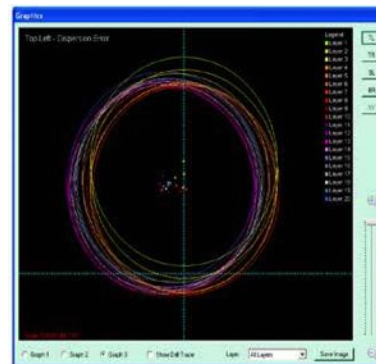
POWERFULL CNC - PLURICONTROL



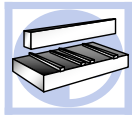
Real CNC IPC based able to manage up to 32 axis with Windows OS and Pcb Control software.

Extremely powerful and the only one with real time ALL IN ONE capabilities for:

- Drilling and routing
- X-Ray
- Vision camera both X-Ray and surface
- CMM Measurement
- Statistical and data analysis
- Remote connection
- USER FRIENDLY INTERFACE | SETTING

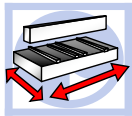


GENERAL SPECIFICATIONS



MACHINE BASEMENT

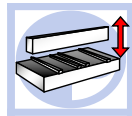
Heavy cast iron structure (3000 kg / . Grants stability and uniformity in material expansion due to temperature variation.



X AND Y AXES MOVEMENT

High precision linear guides and high-speed **linear motors** allow X/Y axes +2G acceleration and 80 m/min (3150"/min) speed.

Positioning accuracy of 5-micron (0.196 mils) ensured by a linear scale with 0.5 micron (0.02 mils) resolution.

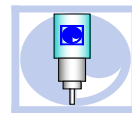


Z AXIS MOVEMENT

Spindle assembly is mounted on high accuracy linear guides, digitally controlled and driven by **linear motors**.

Speed: 35 m/min (1378"/min) / Acceleration: 2 g

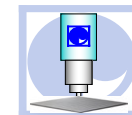
SPINDLE



Z axis design allows to accommodate all Pluritec spindles or any other commercial spindle based on application type.

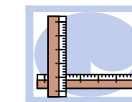
Air bearing **routing** spindles from 15,000 to 80,000 rpm

Ball bearing **routing** spindles from 5,000 to 50,000 rpm



ROUTED MATERIALS

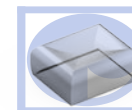
FR4, CEM, ALUMINUM with dedicated high torque ball bearing spindle from 5,000 to 60,000 rpm and high-performance vacuum system



CUTTING AREA

Single cassette up to 640x760 mm (25.00x30.00")

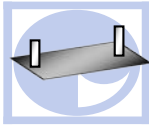
Double cassette up to (310x410mm x2 - 12x16" x2)



MECHANICAL CLEARANCE

Top 40 mm (1.57") - Bottom 70 mm (2.75")

Panel thickness from 0,5 to 4,5 mm (from 0.20" to 1.7")



INDEXING PCB

Mechanical with dedicated fixture and reference pins / Optional ccd camera for fiducial control

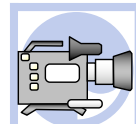


CNC CONTROL

Machine is equipped with a IPC BASED CNC control system (PCB Control) running the latest Windows OS.

Simple Programming with G commands and text file. Cad Cam / Gerber file compatible.

Real time job progress and dynamic graphic - Remote connection for technical support



CCD CAMERA SYSTEM

CNC integrated CCD camera provides perfect fiducials alignment compensating any positioning error and perfect registration.



01B4YK
F33

TRACEABILITY / DATABASE

Optional 2D reader for automatic job file downloading from server, job list checking, good/bad boards tracking.



DATABASE / MES / FACTORY 4.0

Connection to database and MES systems / Industry 4.0 automation data integration



ACCURACY

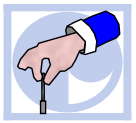
Routing accuracy: $\pm 50\mu\text{m}$ 3sigma

AUTOMATIC TOOL CHANGE SYSTEM

Optional Automatic Tool change is performed using a gripper - Tool change time 18-20 sec

User defined tool type / tool life with automatic tool change and tool life management.

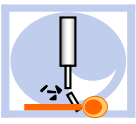
Tool magazine with 14 tools - Cassettes with 140 or 210 positions



PROCESS CONTROL

Optional laser device used to measure:

- broken / chipped tool / tool height / diameter / spindle dynamic run-out





EXHAUST CONTROL PROBE

A dedicated sensor located in the extraction tube of each drilling head detects if any vacuum fault occurs. In such a case an electrical signal is sent to the CNC which provides to stop the machine immediately.



DUST REMOVAL & VACUUM

Air Bush / Pluritec Vortice optional - Vacuum local or centralized with automatic on/off sensor



AUTOMATION SYSTEM

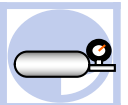
Optional Anthropomorphic robot to load and unload boards from pallets

Optional automatic pallet exchange on machine table



JOYSTICK

The dedicated Joystick simplifies parts positioning and camera manual operations



COOLING UNIT SYSTEM

The machine is equipped with a Cooling unit system with a closed loop liquid circuit.

This keeps linear motors and the spindles at a controlled temperature avoiding motors and spindle overheating and mechanical thermal expansion.



SECURITY AIR TANK

The system is equipped with a **security air tank** granting enough air to stop the spindles without damage in case of sudden lack of air or electricity.



CE – UL CERTIFICATION

All our machines meet the higher security standard.



WEIGHT

Total weight: **3400 kg (7450 lb)**



MACHINES FOR PRINTED CIRCUIT BOARDS



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WWW.PLURITEC.COM

WWW.ECOSPRAY.IT