

With the prevalence of automated assembly lines and the more-frequent use of sensitive electronic devices, the depaneling process becomes increasingly more critical.

- **Ideal for high-volume, mixed assembly lines**
- **Flexible, dedicated fixturing accommodates most PCBA panels**
- **Fully enclosed, ergonomically designed canopy for safe operation**
- **Optional dual-spindle configuration maximizes throughput**
- **Easy-to-use, field-proven software**

With the TR2100 Post-Assembly, Circuit-Side Router, PMJ Cencorp provides manufacturers with superior speed and flexibility. A quick, yet gentle depaneler, the TR2100 avoids the harmful “shocking” of boards with increasingly sensitive components. The TR2100 is fast and accurate — capable of rout speeds of up to 2” per second and slew speeds of up to 20” per second, with a servo-repeatability of +/- 0.0005”.

The TR2100’s dedicated fixtures are available to meet the automated depaneling requirements of OEMs, defense contractors and CEMs. In addition, the optional adjustable tooling pin fixtures are flexible enough to provide an inexpensive solution for prototype production.

Capable of routing a panel with a maximum size of 20.8” (528mm) x 19.5” (495mm), the TR2100 performs PCBA extraction from solid or pre-routed panels. To maximize throughput, the TR2100 can be purchased in a dual-spindle configuration, enabling an operator to rout two panels with a maximum size of 10.4” (264mm) x 19.5” (495mm) in the same pallet.

PMJ Cencorp’s patented dual-pallet shuttling system allows for concurrent unloading and reloading of panels. Because each pallet is fixtured independently, different product types can be processed during the same production run. Although a stand-alone router, the TR2100 has a panel-handling time of only 4-5 seconds — competitive in speed to most in-line machines!

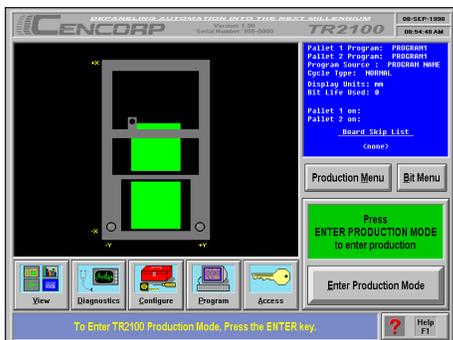
The field-proven, Windows® 95-based control software is easy to use, with an automated learn/teach mode and helpful prompts for programming. Our Video-Aided Programming option is an onboard camera, designed to allow rapid and accurate online program-

ming. The TR2100’s ergonomically designed canopy has automatic, interlocked doors, to ensure operator convenience and safety.

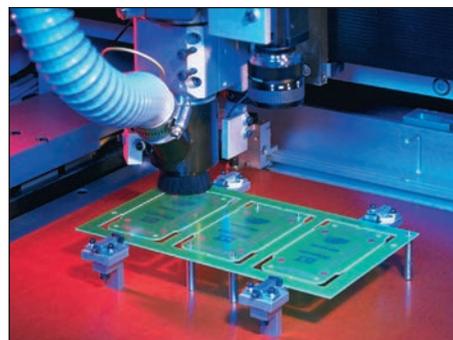
The TR2100 Stand-Alone Routing System is designed for incorporation into high-volume, mixed-product assembly lines. PMJ Cencorp is the industry leader in the design and manufacture of high-quality, post-assembly routing systems, with more than 20 years of experience in leading-edge applications. PMJ Cencorp’s complete line of Stand-Alone and In-Line routing systems provides the depaneling solution to meet the demands of today’s printed circuit board assemblers.



THE PMJ CENCORP TR2100 TOTAL ROUTING SYSTEM



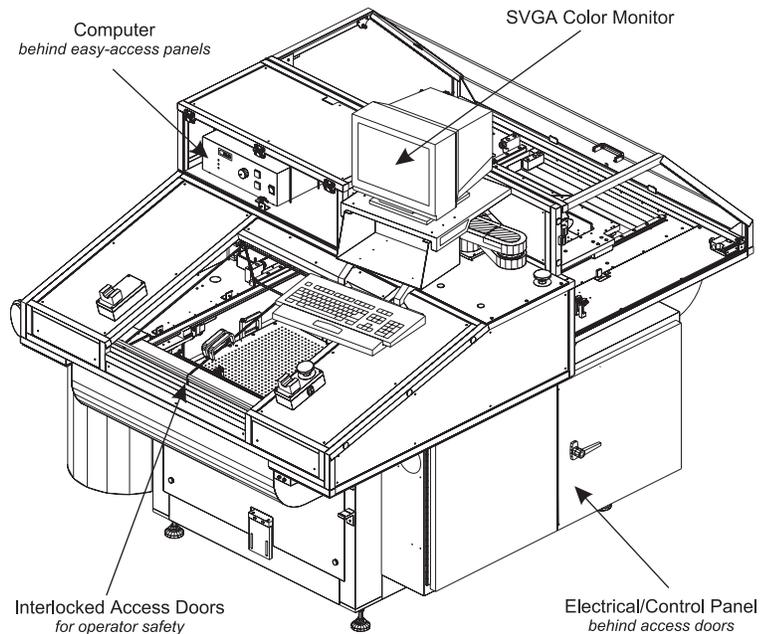
Control software for the Windows® 95 operating system makes the TR2100 easy to use. Diagnostic features keep maintenance simple and efficient.



To maximize throughput, the TR2100 can be purchased in a dual-spindle configuration. The single-spindle configuration is shown above.

SPECIFICATIONS

Footprint	Length: 82" (2083mm) Width: 58" (1473mm) Height: 71" (1803mm)
Maximum Panel Size	20.8" x 19.5" (528mm x 495mm)
Maximum Component Height	Component side: 2.0" (50.8mm); Circuit side: 0.375" (9.5mm) or to customer specifications
Load Height	37" (940mm)
Approximate Weight	2,800 lbs. (1,270 kilos)
Power	208-240V, single-phase, 50/60 Hz standard or to customer specifications
Air	80 PSI; 2 SCFM
Vacuum	2.5 HP @ 60 Hz, .3 micron filter (HEPA) disposable vacuum bags
Router Motor	45mm heavy-duty spindle; controller variable to 50,000 RPM, constant torque asynchronous electric



CONTROL

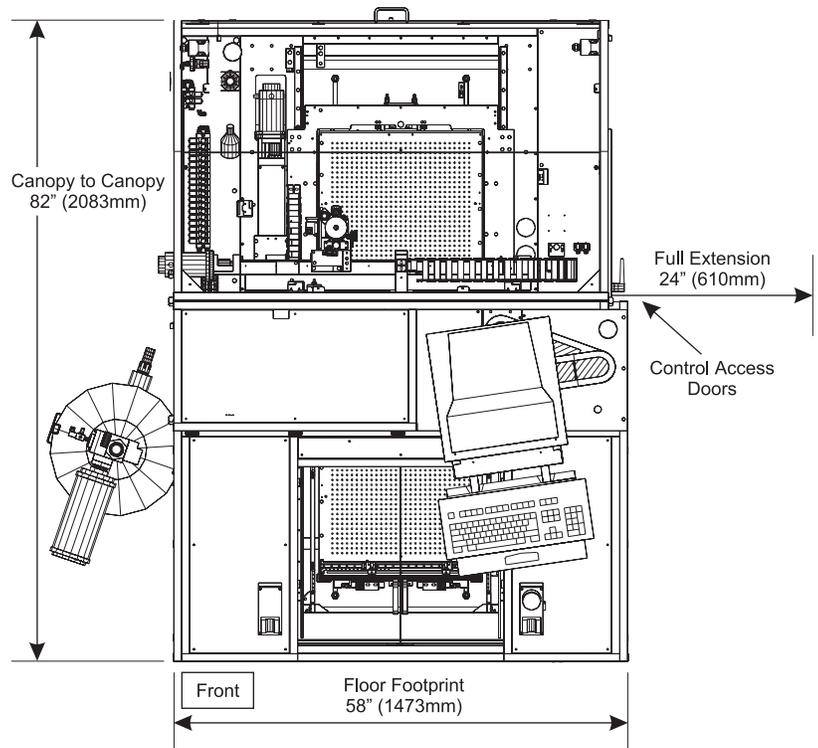
IBM Compatible	Windows® 95
Pentium Processor	PMJ Cencorp Control Software
1 Gig Hard Drive	15" SVGA Color Monitor
16 MB Memory	2 Serial Ports
3.5" Floppy (1.44 MB)	1 Parallel Port

PERFORMANCE

Servo-Repeatable Accuracy	+/- 0.0005" (0.0127mm)
Noise Level	Approximately 78 db
Rout Speed	Up to 2" (50.8mm) per second
X,Y Positional Speed	Up to 20" (508mm) per second

OPTIONS

- Video-Aided Programming
- Dual-Spindle Configuration (requires three-phase power)
- Bit-Breakage Detection
- CE Certification
- Programmable Servo Z Axis
- Fiducial Recognition
- Anti-Static LEXAN



PMJ Cencorp's line of stand-alone and in-line depaneling equipment is sold through PMJ automec Corporation. Please call your regional PMJ sales representative for further information.

PMJ automec Deutschland GmbH
Am Opelkreisel 13a
D-67663 Kaiserslautern GERMANY
Tel: +49 631 53480-0
Fax: +49 631 53480-59