



# SmartRouter Singulation

## Fast Facts

- Dust free environment
- 20" x 18" panel size (standard)
- Worldwide support infrastructure
- Dedicated or Universal fixtures
- Many other options available

Imagine a Depaneling System that has cleaner air inside the enclosed chamber than outside. Imagine a PCB routing system that eliminates the need for a secondary cleaning operation because of residual dust. The Tyco Electronics SmartRouter platform makes this possible because of a vacuum system that can be selectively configured for the top and/or the bottom of the panel. Now imagine a system that eliminates the need for a technician to program.

The SmartRouter Systems are stand-alone machines for cost effective, flexible, accurate depanelization of electronic assemblies. The operator has the ability to automatically download PCB route path information by way of the SmartTAG (patent pending). Tyco Electronics offers dedicated routing fixtures with SmartTAG functionality, which is available on all SmartRouter Systems. This technology minimizes costs and operator errors associated with machine programming and fixture set-up for depaneling.

## SmartTag Fixturing

PCB fixturing is one of the most critical aspects to PCB singulation. The route path information for the Tyco SmartTAG fixturing resides in the fixture. After the fixture is placed on the system, the route program is downloaded directly into the controller. Both the fixture and its associated program are tested prior to shipment, eliminating the need for on-site programming.

## Programming and Tooling

The SmartRouter Singulation software is very user-friendly and flexible. The programs are stored on the hard drive of the PC/GUI. Programming can be accomplished using several methods: Video Aided Interface, Manual Positioning, or CAD download.

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## Other Programming Options:

### Video Aided

The servos can be jogged into position using the camera image and the GUI. Programs are created by storing the start and end point of each tab and saving to a file.

### Manual Mode

The power to the servos can be turned off and the robot can manually be moved into position to teach the program coordinates.

## Machine Dimensions:

**Width:** 48" [1219mm]

**Length:** 53" [1346mm]

**Height:** 74" [1880mm]

**Table Height:** SMEMA

## Positioning System Specifications

**X-Y Positional Travel Speed:** 19.69"/sec (500mm/sec)

**Servo Accuracy:** ±0.0008" (±0.02mm)

**Cut Speed:** 2"/sec (50.8mm/sec)

**Spindle Motor:** Industry standard with pneumatic collet

**Variable:** 2000 - 60,000 RPM

Uses standard 1/8" shank router bits

## Facility Specifications:

**Power:** 220 VAC, single phase, 30 amp, 50/60 Hz

**Air:** 80 PSI, 2 SCFM [1 liter/sec]

## Vacuum System Specifications:

Self-contained, 2.5 Hp motor.

Respirable particulates are better than 277 times **lower** than OSHA permissible exposure limits. (Independent Laboratory tested using NIOSH 0500 and 0600 test methods)

Simple and clean filter bag removal and replacement procedure. Time required to replace filter bag is less than 5 minutes.

## Control Specifications:

Self-contained PC with integrated 15" color touch screen  
Windows OS

## Panel Specifications:

**Max. Panel Size:** 18" x 20" (457mm x 508mm)

**Max. Top Side Component Height:** 1" (25.4mm)

**Component Placement:** .030" (.762mm) from board edge at tab locations

**Max. Bottom Side Component Height:** 2" (50.8mm)

**Component Placement:** .030" (.762mm) from board edge at tab locations

**Circuit Traces:** .020" (.508mm) from edge of board at tab location

**Max. Board Thickness:** .125" (3.172mm)

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