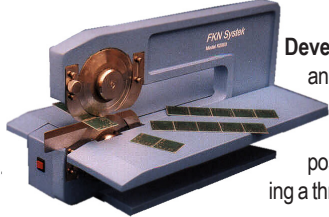


K Series Circular Blade Depanelizers

Singulate prescored PCB panels without dust or scrap.

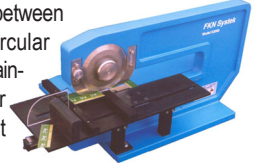
Available in a variety of models for different applications, the K series circular blade depanelizers singulate low to high volume PCB panels by passing the scoreline between two blades to break the remainder material. Recommended scoreline remainder material $>.012" < .027"$

K1000 K2000 Circular blade depanelizers.

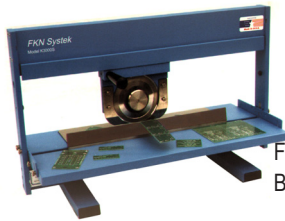


Developed for low cost singulation of panelized printed circuit cards, the **K1000** and **K2000** are a hand operated and motorized version of double circular blade PCB depanelizers which separate panels up to 12.5" in length. The blades are made of long lasting tool steel and can be adjusted for exact positioning for the separation of panels. Blades are easily replaced by removing a threaded holding disk from the main shaft.

Both machines are available with optional support tables on each working side, or with XY guide table for holding skip scored panels. PCB panels are separated by passing the scoreline between the upper and lower circular blade to separate the remaining material. Operator safety is assured by front and back blade guards.

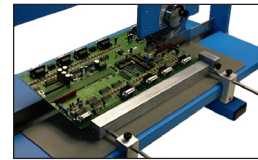


K3000 Manual linear blade depanelizer.



The **K3000** manual linear blade depanelizer is designed for singulating longer boards and scored PCBs with skip routed sections. Simply place the scored section on the linear blade and pull the circular blade carriage across the top of the scoreline to split the panels.

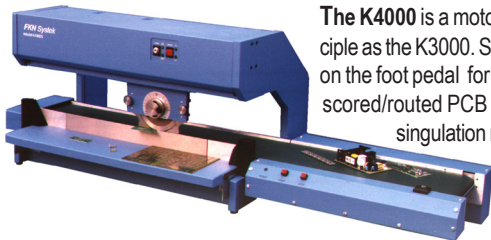
Front and back support tables can be set at a convenient height for optimal comfort. Both can be tilted to allow singulated panels to be passed to a conveyor belt.



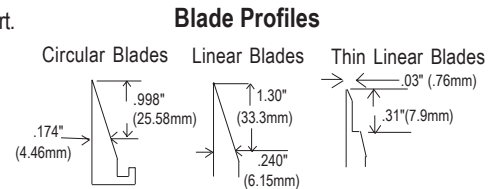
Optional K3000 tooling bar to help align long panels.

K3000S 18" Blade
K3000L 24" Blade

K4000 Motorized linear blade depanelizer.



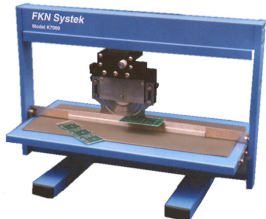
The **K4000** is a motorized linear blade depanelizer working on the same principle as the K3000. Simply place the PCB scoreline on the linear blade and step on the foot pedal for automated singulation of prescored panels. Scored and scored/routed PCB panels are safely separated by the linear circular blade singulation method. Blades are made of long lasting tool steel and are slightly rounded. Available in standard 18" linear blade or long 24" linear blade versions.



Blade guards on each working side of the circular blade provide for operator safety. For additional safety, a laser protective beam is available across the front of the linear blade. Dust extraction unit and conveyor belt are available separately.

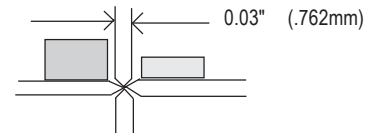
Placement of components to edge.
 $> .04"$ (1mm) for standard components
 $> .08"$ (2mm) for sensitive components (e.g. ceramic chip capacitors.)

K7000 Linear blade depanelizer for close component spacing.



The **K7000** is a circular on linear blade depanelizer developed to singulate prescored PCBs with very tight component spacing. The linear blade is 12" (304mm) long and has a .030" (.762mm) thin symmetrical cutting edge designed particularly for PCBs with closely spaced components. The circular blade is 3.8" (96.52 mm) in diameter and has the same cutting edge profile as the linear blade.

Blade Profile for K7000 Blades

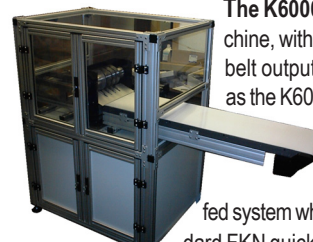


Multiple Blade Depaneling singulate up to 10 scorelines in one pass.



Singulate multiple prescored PCB panels in one pass with the FKN Systek K5000 or K6000 PCB depanelizer. Panels up to 10" wide can be separated by placement onto an input conveyor to be passed onto the separator blades.

The **K5000** is manually fed and unloaded. The cutting area is protected by a see through cover to prevent access during operation. Separated panels slide down a gentle incline onto an output tray or conveyor belt. Up to 10 sets of blades can be placed side by side onto the separator mandrels. Changing blade sets for different PCB panels is done from the side and takes about 15 minutes.



The **K6000** is an in-line version of the same basic machine, with PLC, adjustable side rail input conveyor, flat belt output conveyor and SMEMA interface. Available as the K6000 IL, an in-line system receiving boards from the conveyor at the end of an automated assembly line, or as the K6000 AF. The **K6000 AF** is a fully integrated PCB cartridge fed system which automatically accepts boards from a standard FKN quick adjust rack.

Go to fknsystek.com for more information.

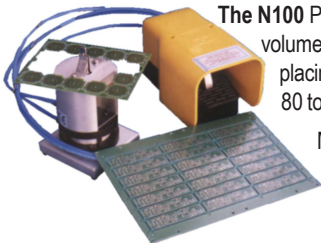
More ways to singulate PCB panels

Depaneling tools for tab routed boards - or for cards with overhanging components.

FKN systek has tools to help singulate PCB panels for each of five methods to depanelize. The K series, N series punch, S series diamond blade saws, R series routers and bend and snap tools. The N series of punches provide a clean and quick way to finish tab routed panels. For panels with overhanging components it is possible to use the B series to bend and snap scored card handling strips. If you need a smooth edge finish and straight cut, the S series will do the job.

N100 Nibbler

Cut straight tab routed panels.

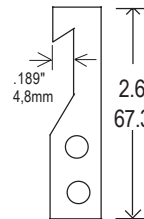


The N100 PCB Nibbler for tab routed printed circuit cards is ideal for low to medium volume production or as back up to your high cost routers. Tabs are cleanly cut by placing them under the blade and stepping on the foot pedal. All that is needed is 80 to 100 PSI factory air.

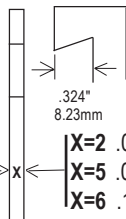
Material from the tab is stored inside a compartment of the tool and can be easily removed at operator convenience. Just lift the clear front cover of the tool housing and discard the scrap. No secondary deburring operation is needed.

N100 Blades

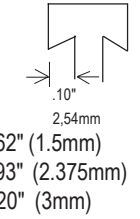
Standard 97-010XN



Long Tab 97-020XN



Double Edge 97-030XN



N200 Punch

Singulate curved tab routed panels.

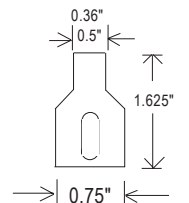


The N200 is a low cost top down air operated punch for singulating tab routed PCB panels one tab at a time. An upper and lower matching knife blade is used to pinch the tabs apart. This method produces less stress on the PCB than a punch and die since the cutting action takes place from both sides.

The standard die set consists of an upper and lower knife for cutting a single tab at a time. The tab is located on the lower knife by placing the routed section of the panel on a set of locating pins and holding the PCB or letting it rest on the support table.



Blades



The exact cutting location can be set by turning an adjustment screw which brings the locating pins to the desired position for cutting a tab at the board side. Dies for cutting a complete small panel can be supplied on request.

S200/S300

Diamond blade saws for clean edge finish and no board preparation.



The S series diamond blade depaneling saws are used to singulate assembled PCBs. The saw blade is 2.95" (75mm) diameter .021" thick. On the S100 an adjustable front and back blade guard assure that the PCB is held at the correct height to cut just deep enough for clean board singulation.

These saws can be used to singulate PCBs without scorelines, or to singulate PCBs with overhanging components on the parting line. Since the cutting depth can be set to just cut through the PCB itself, any components which overhang the parting line will remain intact.

The S300 depicted here is an automated multiple blade system for cutting up to 8 lines in the manufacture of products such as ballast for the lighting industry. Also available in a dual blade version for removing the side carrier strips from DC/DC converters or SIMM cards.

An operator places the panel to be cut onto the left input tray and begins the cutting sequence by pushing a start button to automatically bring the panels past the two blades for singulation.

R Series

Router with XY guide table.

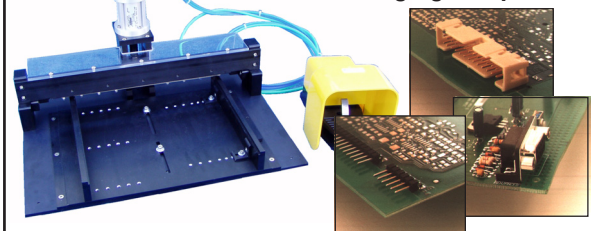


For prototyping and low volume production, FKN has developed the R100 hand operated router system. Dual positioning pins on each side of the router bit insure that the bit can only be inserted in the routed channel to finish routing the tabs.

Built in dust extraction channels underneath the PCB mounting table remove all debris during the singulation process. The R100 can pay for itself by eliminating the need for support tooling and programming for small runs and prototyping. See our home page for more information. Dust extraction vacuum is available separately.

B 300

Bend and snap handling strips with overhanging components.



Edge strips on panels with overhanging components can be removed quickly and economically by bending and breaking scrap strips from underneath the components.

Representative:

Go to fknsystek.com for more information.