

## VIBRATORY-FLIGHTBAR

for multilayer printed circuit boards

### Motivation - Background

The trend to manufacture multilayer printed circuit boards with finer lines, higher aspect ratios, smaller holes and more stringent plating requirements, has taxed the ability of conventional plating equipment to provide consistent high quality and capacity. Galvabau's new patented vibratory flightbar extends and improves any system's plating capability. With an eye to the future the vibratory flightbar was developed in collaboration with a leading manufacturer of advanced circuit board products to extend the capability of conventional equipment. Galvabau was able to apply its many years of successful research and development in the connector industry, where it used electromagnetic technology to routinely deal with the plating of small, blind holes.

### Innovation

Prior to this development, vibratory action had to be combined with conventional cathode bar agitation. Much of the effect was lost because of the damping caused by an interaction between the flightbar and



the tank saddles. All processes and all flightbars received vibration whether it was required or not. In Galvabau's vibratory flightbar, vibratory motion is applied only to the bus bar to which the circuit board racks are attached. Each flightbar is equipped with its own frequency generator. Each lot of parts can receive its own individualized settings. Because all vibratory action is generated within the vibratory flightbar, it can be used as a conventional flightbar by simply switching off the vibratory unit. On/off control is available at each process station and may be controlled manually or automatically. Galvabau's vibratory flightbar technology can be installed on new equipment or fitted to almost any manufacturer's existing installation. It can also be switched easily from direct current plating to reverse pulse plating. The flightbar is based on a mechanical construction, therefore it will be considerably maintenance-free. Systems of up to 12 feet in length have been successfully installed and will provide the expected product improvements.





## Benefits

- ✓ Improved plating coverage of high aspect ratio and blind holes
- ✓ Increased electrolyte exchange
- ✓ Higher product yields
- ✓ Faster plating speeds

## Features

- ✓ Vibration independent of other parts of the plating line
- ✓ Individually adjustable vibration intensity
- ✓ Selective process step availability
- ✓ Adaptable to most existing systems
- ✓ Each unit may be used in either a vibratory or conventional fashion

## Technical data:

Length  
Width and height  
Frame material  
Vibrating bar material  
Contacts for V-saddles  
Power supply  
Frequency  
Technical modifications reserved.  
Pat. pending

From 1 m to ca. 6 m  
105 mm x 191 mm  
1.4301 stainless steel  
Copper  
Copper and stainless steel  
24 V AC or 24 V DC to 60 V DC  
20 to 100 Hz

subject to change!

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## Branch offices

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