



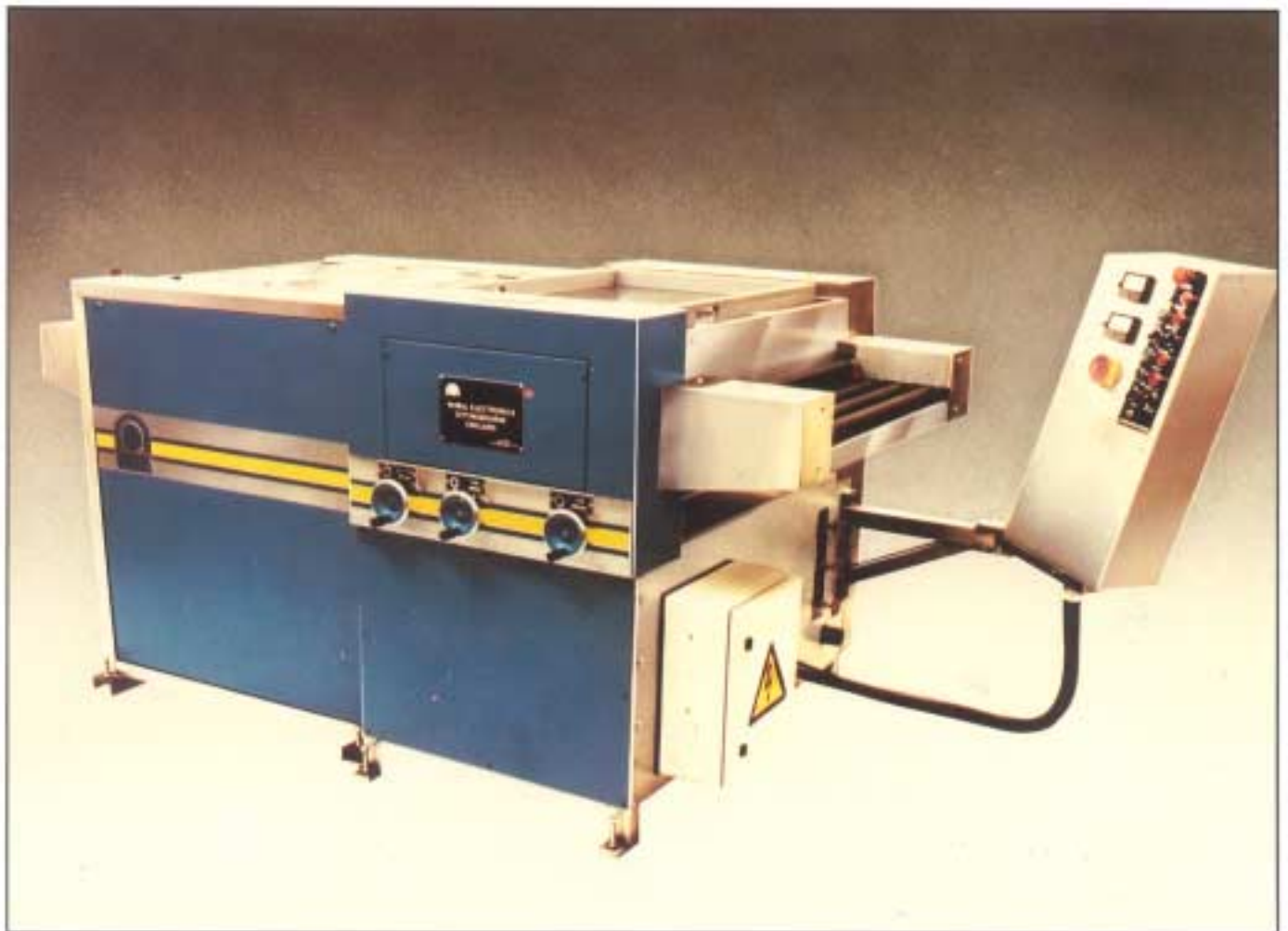
NUBAL

production and process
equipment for the
printed circuits industry

HDC 100

Heavy Duty Scrubber and De-Burrer

The HDC100 is a heavy duty, double sided cleaning machine designed to remove drill burrs or for the surface preparation of printed circuit boards, inner layers and multi-layers.



Although designed to be functional and extremely durable, the HDC has also been constructed to be adaptable.

It can fit into various configurations of cleaning lines, and depending on the process being used, it can be supplied with various types of rinse and drying modules, including a high pressure rinse section giving pressures up to 50 bar.

The operating technique has been kept as simple as possible to reduce any operator related problems and to keep production flow as smooth as possible.

Machine adjustments are straightforward and uncomplicated, as are the minimal maintenance requirements, which all give reduced downtime and greater reliability.

HDC with high speed rinser/drier and optional remote switchbox.

The HDC100 is supplied with either 125mm or 150mm diameter brushes which can be bristle or conventional type.

Both types are mandrel mounted to facilitate rapid brush changes when necessary.

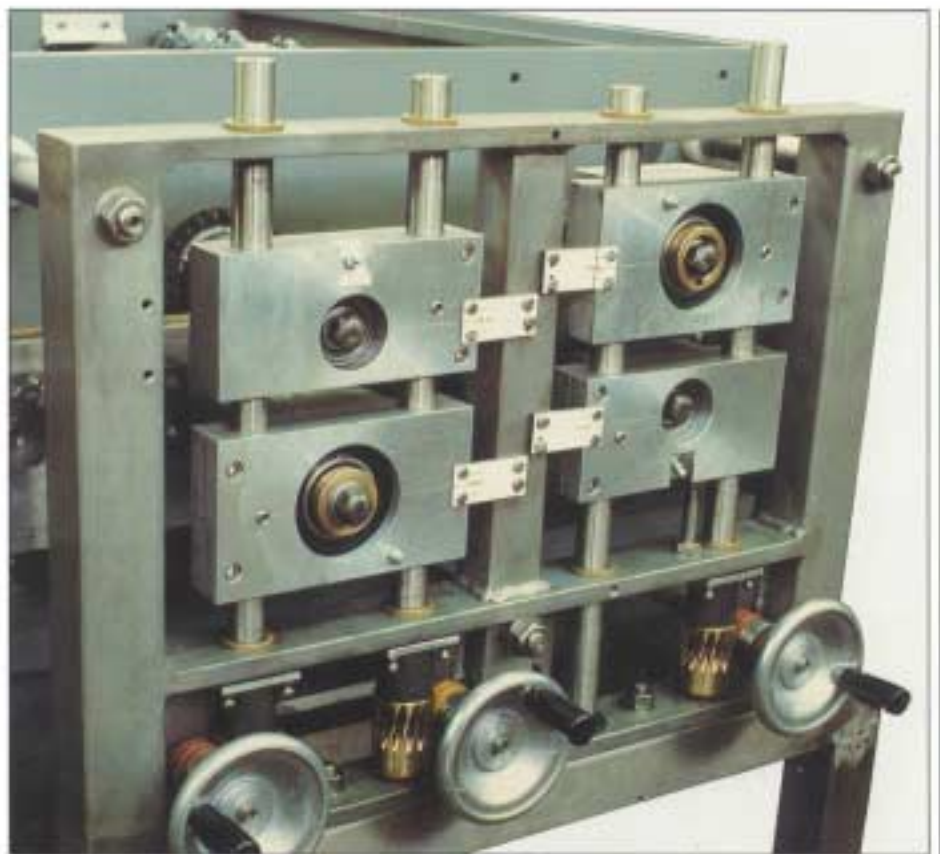
The stainless steel anvil rollers are similarly mounted and can be quickly and easily removed for lower brush changeover.

Heavy duty ball and roller bearings are used in the brush and anvil heads, and these heads are raised and lowered on 22mm mounts, precision ground and jig bored positioned guide bars. The brush and anvil roller heads are mounted in a stainless steel box section fabrication.

Oscillation of the brush heads is by separate gear reduction motors, one to each head.

A heavy pitch chain drive from a variable speed conveyor motor provides the conveyor drive with each conveyor shaft driven in 3 bearings, providing support outside the chain drive.

Water supply is either mains water or via a re-circulation and filtration system such as a sand-filter, a cyclone type separator or centrifuge.



An additional high pressure water wash can be supplied giving pressures up to 50 bar.

Ammeters giving brush pressure control are fitted as standard.

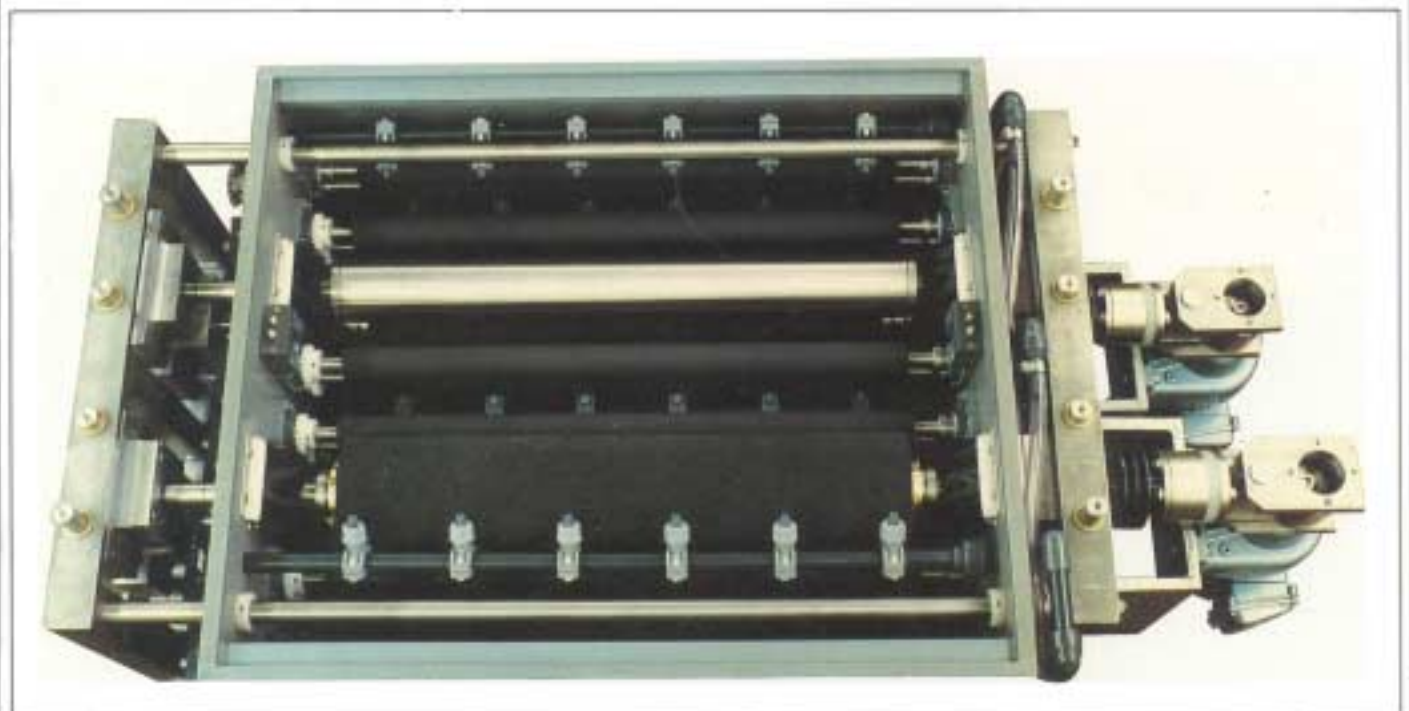
A simple handwheel adjustment gives uniform micrometer adjustment to brushes and to upper anvil roller.

The photo above shows the rugged stainless steel fabricated framework, heavy duty bearings and housings and the raise and lower mechanism for the brushes and anvil rollers.

Optional Equipment

Ceramic covered anvil rollers.
Variable speed oscillation.
Inner layer guide attachment.
Automatic brush adjustment.

The photo below shows an internal view of the HDC, minus the easily removed guards and top cover. Both of the stainless steel side frames securing the oscillating, fixed and anvil heads can be clearly seen. Also shown is the internal tank, made from 18mm PVC which is heat welded to form a very rigid structure. This tank confines almost all the water contaminants.



The HDC100 is a double brushing machine which is normally supplied with one brush above and one below the pass height, being suitable for double sided operation.

If the brush positions are required in a particular order, i.e. bottom brush first or both brushes on top, this must be stated at time of ordering.

Unless otherwise specified, 125mm diameter Scotchbrite Super-fine brushes will be fitted.

Other brushes with different grades of Scotchbrite or Tycro can be fitted as well as Stainless Steel, Brass, Nylon or Tycro de-burr.

If Tycro or a similar hard de-burring brush is used we would recommend the fitting of Ceramic anvil rollers.

Brush and anvil roller heads are anodised aluminium castings containing heavy duty ball and roller bearings.

Conveyor rollers and nip rollers are rubber covered 40mm OD with 19mm diameter stainless steel journals.

Nip rollers preceding and following the brushes are gear driven to give a positive grip on boards during brushing.

After deburring, it is recommended that a high speed rinsing/drying unit be fitted.



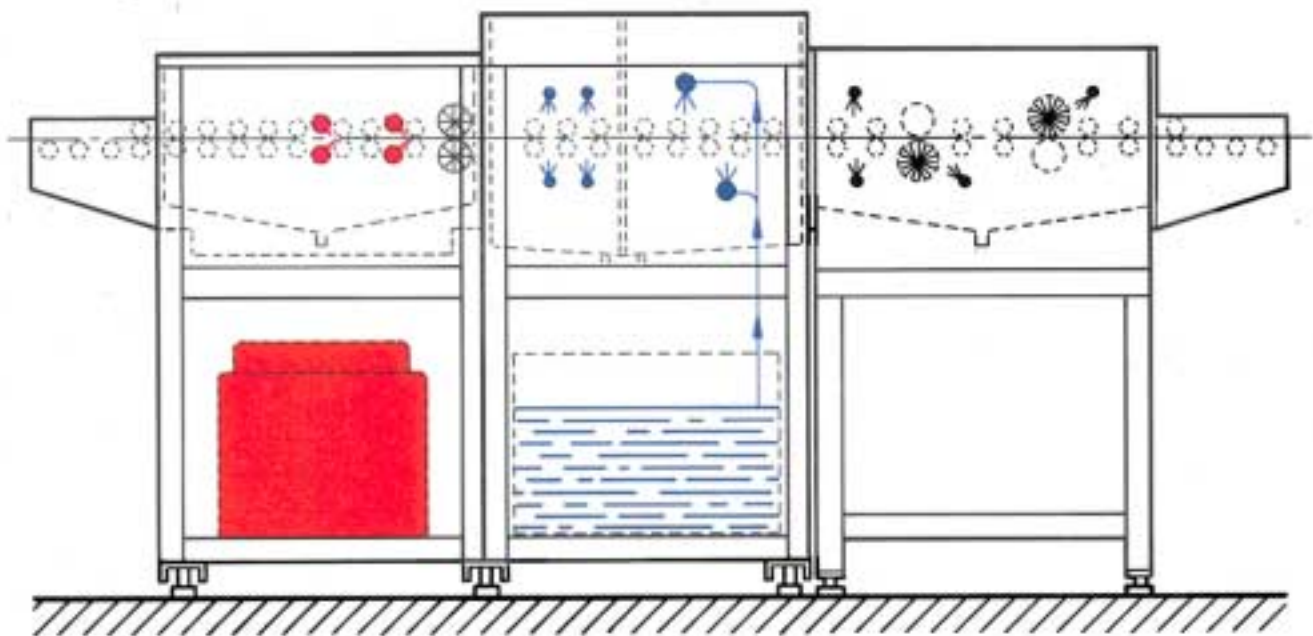
The photo of the rear of the machine (above) shows the brush rotation motors, oscillation motors, oscillating drive mechanism and rear bearing housings.

Photo showing a typical heavy duty cleaning line. This consists of (from right to left) a HDC scrubber with infeed conveyor, a high pressure rinse unit and a high speed rinse/drier with out-feed conveyor. Also shown is a remote console which controls the complete line.



SPECIFICATIONS

Length	HDC - 1000mm HDC/HPR - 1640mm HDC/HPR/HSRD - 3470mm (remote switchbox will add 650mm to length)
Height	HDC/HSRD - 1130mm HPR - 1195mm
Width	1530mm (inc handwheels)
Pass Height	915mm
Std Conveyor Speed	Variable: 0-4 metres per min
Min Board Thickness	0.75mm (see options)
Min Board Width	50mm
Min Board Length	200mm
Max Board Thickness	6mm
Max Board Width	650mm
Weights	HDC - 590 K HDC/HSRD - 750 K HDC/HPR/HSRD - 948 K
Std. Electrics	415v 3ph 50Hz (others on request)
Water Consumption	9.6 litres per min at 30 psi (per spray tube)
Brush Motor	2 Hp
Oscillation Motor	.25 Hp
Conveyor Motor	Fractional Hp
Main Side Frames	Stainless steel section fabricated, bushed and jig-bored
Brush and Anvil Bearings	Sealed ball and roller bearings mounted in heavy duty anodised aluminium castings
Conveyor Roller Bearings	Oilite in sealed housings
Guide Bars	22mm dia precision ground stainless steel
Brush Rotation Speed	1600 rpm counter direction to conveyor travel
Oscillation	6mm stroke : 100 or 200 strokes per min



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Because of our policy of continuous improvement, we reserve the right to alter specification without prior notice.

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