TECHNICAL DEVICES COMPANY 560 Alaska Avenue * Torrance * California 90503 * U.S.A.
A SUBSIDIARY OF **WINTHER** TECHNOLOGIES, INC. TEL: 310- 618-8437 * FAX: 310- 618-1543 * www.TechnicalDev.com

NU/CLEAN

INLINE AQUEOUS CLEANING SYSTEMS

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Technical Devices Company 560 Alaska Ave. Torrance, California USA

INTRODUCTION

Technical Devices Company is the largest US owned manufacturer of wave soldering and cleaning equipment. Since 1952, Technical Devices has been supplying the electronics industry with the highest quality production equipment, and has an enviable reputation for after-market service and product support. This document will provide you with an introduction to the superior technology and design incorporated into our equipment.

The NU/CLEAN Inline Aqueous Cleaning Machines have been designed to provide the most efficient cleaning, and drying, of PCB'S of any system available on the market. The NU/CLEAN design not only reduces maintenance to a minimum, but also reduces the time required for maintenance procedures to be performed. For further information about the NU/CLEAN Wave Soldering Machines, please contact our factory at (310) 618-8437.

FEATURES of the CABINET:

* EPOXY COATED WELDED STEEL FRAME
* ½" POLYPROPYLENE STRUCTURAL WALLS
* ACCESS PORTS FOR CLEANING TANKS
* RETRACTING TEMPERED GLASS ACCESS DOORS
* TANK CATCH SCREENS
* HINGED AND REMOVABLE PLUMBING ACCESS DOORS
* FRONT MOUNTED TANK HEATERS FOR EASY ACCESS
* CONCEALED INTEGRAL EXHAUST DUCTING
* DUAL INLET/DRAIN
* ALL POLYPROPYLENE WELDING DONE WITH NITROGEN
* TRIPLE WELDING IN ALL WET SECTIONS
* INSULATED SILENCING SHROUD AT EXIT END OF CONVEYOR
* TANK BOTTOMS SLANTED TOWARD DRAINS
* VENT DE-MISTER

ADVANTAGES of the CABINET:

* Steel frame assures machine sturdiness and reduces likelihood of leaks.
* Nitrogen welding assists in assuring uniform bonding of welds.
* Catch screens eliminate possibility of components falling into tanks.
* Hinged/removable plumbing access doors permit easy accessibility.
* Front mounting of the heaters allows for easy access without having to remove plumbing.
* Silencing shroud assures minimal noise level possible exceeding OSHA standards.
* Availability of 3 blowers in standard cabinet permits maximum drying capability in the shortest footprint available.
* Vent De-mister minimizes loss of chemical and/or water through the ventilation.

FEATURES of the CONVEYOR SYSTEM:

* 18” AND 24” WIDTHS AVAILABLE.
* .072” DIAMETER WIRE (1/2” mesh size)
* RATCHET SAFETY CLUTCH STANDARD
* GROUNDED FOR ESD PROTECTION
* DUAL BELT AVAILABLE (Top belt mesh size is 3/8”)
* SYNCHRONIZED BOTTOM AND TOP BELTS DRIVEN BY ONE MOTOR.

PROCESS ADVANTAGES of the CONVEYOR SYSTEM:

* Safety clutch reduces possibility of PCB and component damage.
* 3/8” top belt mesh reduces possibility of component capture.
* Top belt allows for processing of smaller/lighter PCB’s.
* Belt synchronization removes possibility of shearing effect on the PCB during the process.

FEATURES of the PLUMBING:

* STAINLESS STEEL ON ALL HIGH PRESSURE PLUMBING
* WELDED POLYPROPYLENE PLUMBING ON ALL LOW PRESSURE LINES
* MOST SPRAY BARS IN INDUSTRY
* MOST NOZZLES IN INDUSTRY
* UNIONS ON EACH SIDE OF VALVES, METERS, AND PUMPS
* STRAINER IN ALL TANK BOTTOMS
* POLYACETAL NOZZLES
* QUICK-DISCONNECT SPRAY BARS
* OPTIONAL CASCADE WATER KNIFE – WITH AND WITHOUT DEDICATED PUMP
* OPTIONAL CASCADE WATER KNIFE IMPROVES CLEANING CAPABILITY UNDER TIGHT SPACES.

PROCESS ADVANTAGES of the PLUMBING:

* The use of polypropylene plumbing, rather than PVC or CPVC, allows for much longer plumbing life. Welding the polypropylene, rather than gluing, forms a far superior bond between two sections of pipe, thereby reducing the chance of leaks.
* More spray bars means more times during the washing cycle the PCB is subjected to cleaning action of the liquid.
* More spray nozzles assures better cleaning as a result of more opportunities for the liquid to physically address the PCB.
* Polyacetal nozzles last up to three times longer than stainless steel nozzles. In addition, they are available in a far wider range of spray patterns, and flow rates than stainless steel nozzles. Polyacetal nozzles are available in different colors indicating their individual spray pattern and flow rate. Their relatively low cost permits the use of far more nozzles per spray bar.
* Quick – disconnect spray bars permit fast nozzle replacement and the ability to maintain nozzles off line. This results in more machine uptime.

ADVANTAGES OF THE DRYING SECTION:

* Up to three turbine blowers in the standard machine footprint permits the user the opportunity to buy exactly the amount of drying capability required. Additional blowers can be added as production needs increase.
* Specially engineered airknifes, specifically designed for the most efficient drying of PCB"s assure maximum drying performance.
* Airknifes are adjustable in theta, and up and down, from the front of the system without the use of tools.
* Standard noise suppression package assures the quietest operation possible.
* Slide out blowers permit easy and quick filter replacement
* Self-adjusting belts reduce maintenance time and prolong belt life.
* Optional side fin blowers assure adequate drying of edge connectors on PCB's.

CONTROLS AND GAUGES

* Standard flow meters where required.
* Pressure gauges for upper and lower spray modules.
* Digital PID temperature controllers with displays.
* Digital speed indicator.
* Auto fill and liquid level control
* High temperature protection.
* Redundant low liquid level protection.
* Magnehelic pressure gauges on all dryer blowers.
* High I.R. temperature protection.
* Emergency stop buttons at each end of the machine.
* Optional automatic start/stop PLC control.

EXPLANATION OF MACHINES:

MODEL 218 18" conveyor Model 224 24"conveyor
*For medium to high production of simple to very complex (hard to dry) PCB"s when using water soluble fluxes. The system comes standard with a 10 HP pump (upgradeable to 15 HP). Also standard on the system is either one 10 HP blower (upgradeable to 15 HP) and an I.R. panel, or two 10 HP blowers (upgradeable to 15 HP). A third blower (10 HP or 15 HP) can be added to the system without changing the footprint.

MODEL 318 18" conveyor Model 324 24" conveyor
*For low to high volume production of simple to very complex (hard-to-dry) PCB"s when using rosin fluxes. The model 318 is furnished standard with two 10 HP pumps (upgradeable to 15 HP). The drying section of the Model 318 is sold with either a 10 HP blower (upgradeable to 15 HP) and an I.R. panel, or two 10 HP blowers (upgradeable to 15 HP). A third blower (10 HP or 15 HP) can be added to the system without changing the footprint. The model 318 can easily, and quickly, be converted to a water-soluble flux application by merely turning a series of valves.

MODEL 318XL 18" conveyor MODEL 324XL 24" conveyor
*For medium production applications where a chemical is going to be used in the Wash Section. Has an air-water-air Isolation Section like the Model 600 Series. This model is furnished two 10 HP pumps and blowers. Optional 15 HP pumps and blowers are available. Only available with two blowers.

MODEL 618 18" conveyor Model 624 24" conveyor
*For high production and very complex (hard-to-dry) PCB"s when using rosin flux. The Model 618 is furnished with two 10 HP pumps (upgradeable to 15 HP), and two 15 HP blowers. A third blower can be added without changing the footprint. The Model 618 can easily, and quickly, be converted to a water soluble flux application by merely turning a series of valves.

All of the above systems are available with a number of options including automatic chemistry makeup, except the 218, heated airknife, cascade water knife, electric drain valves, U. L. Listing, CE, extra drying modules, and a water treatment system.

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