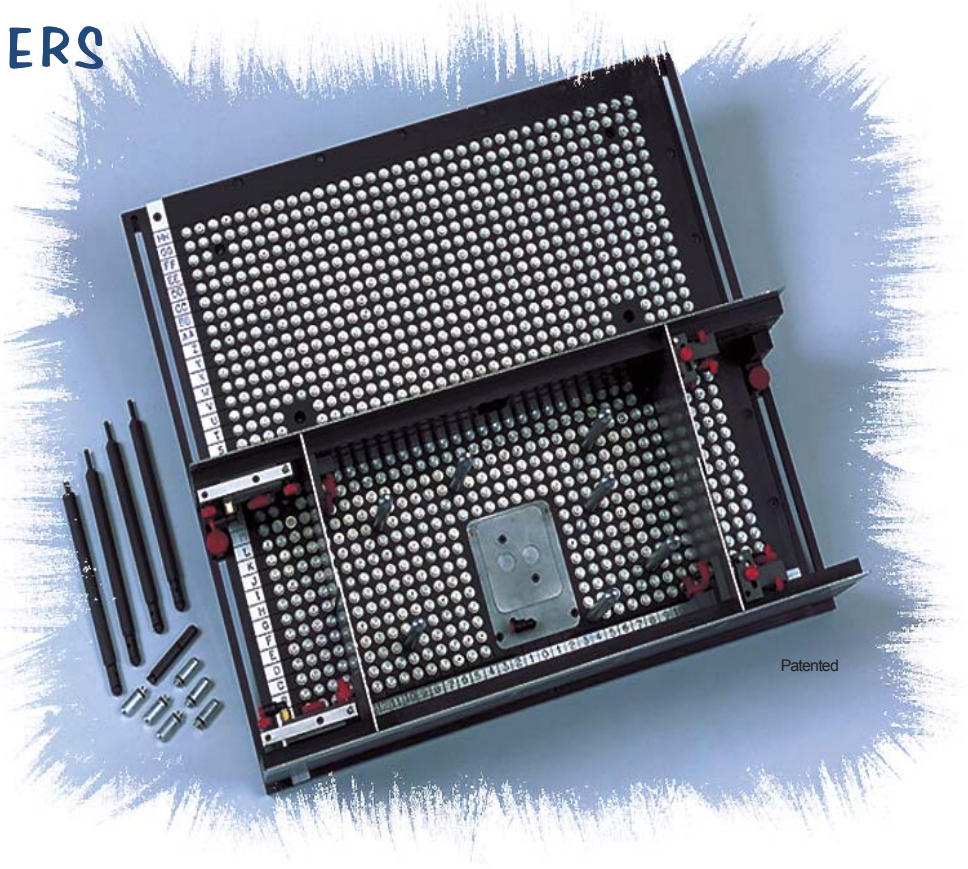
TECHNOtalk

Vol. VI Tooling Plate 2003

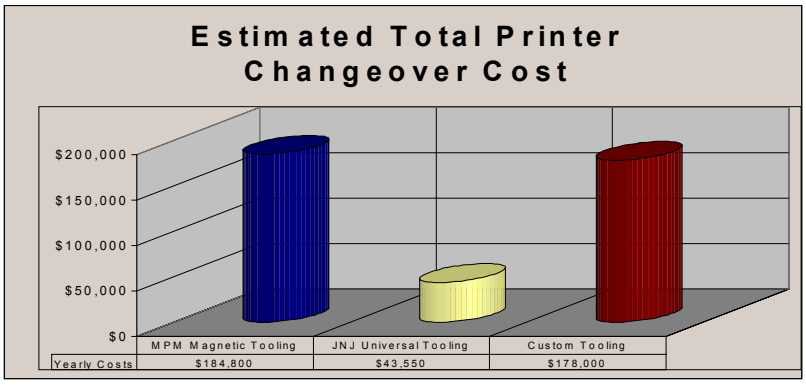
JNJ INDUSTRIES

Universal Tooling Plate Assemblies With Repeatable Set Up for MPM Printers

JNJ's Universal Tooling Plate Assemblies were designed to retrofit directly onto MPM AP Series and UP2000 stencil printing machines. This unique design is ideal for double sided boards, incorporating a precision matrix of pin support hole locations. Alphanumeric scales on the X and Y-axes respectively provide repeatable support pin location information. The Off-line Setup Fixture with corresponding support pin designation provides an ergonomic design that allows support locations to be configured on the bench. Assigning coordinate position location information for board supports off-line allows operators to set up a job in 1-2 minutes. Installation of tooling assembly utilizes the same mounting holes and vacuum system as the original MPM tooling plate and installs in approximately one hour.



Cost Analysis



Payback within 6 months using JNJ's Tooling Plate Assemblies with Off-line Setup Fixture

What Our Customers Say...

"As a result of the new JNJ MPM table upgrade, Schneider Automation has seen a 50% reduction in setup time and significant improvement in print quality, especially on fine pitch devices (20 mil pitch and micro BGAs)". - *Chuck Babcock, Manufacturing Engineering Mgr., Schneider Automation, Inc.*

"Now with the JNJ Tooling Plate's alphanumeric gridsystems, repeatable setups are accomplished. The setup time has gone from 20 minutes average to just 2 minutes". - *Herb Pabes, Process Engineer, Tellabs Operations, Inc.*

Our Universal Tooling Plate Assembly means one time installation, no inventory of dedicated fixtures, no damage or replacement costs

JNJ Tooling Plates

The purpose of the tooling plate is to allow a PC board to enter the print area under the stencil, be supported without dips, and held in position without movement during the print cycle.

Smart Solutions

- The Universal Tooling Plate takes approximately one hour to install and never has to be removed
- Constructed from stainless steel and anodized aluminum for a long and durable life
- With JNJ's Off-line Setup Fixture, board support position can be configured in minutes for new jobs, **without** interrupting your current manufacturing line
- Changeover from one board setup to another previously took 15-30 minutes, now takes less than 5 minutes .
- Repeatable and consistent setup of every job
- Concentric and eccentric pins allow for support of densely populated boards
- Off-line Setup Fixture means continued process throughput, no printer downtime, more savings $$$!
- Setup sheets allow operators to record setup information for future use

JNJ Developed the Universal Tooling Plate Assemblies w/ Repeatable Setup to Meet the Needs of our Customers...

According to technicians, the existing AP Series and UP2000 tooling plates are difficult and time consuming to setup. There are three main glitches with the present design: (1) the support pins are difficult to move in small increments due to the magnetic force of the pin being held on the plate, (2) the base of the support pins are approximately 1.5" in diameter, which prevents extra support in close areas, (3) time and repeatability: (a) technicians take 15-30 minutes to set up each job (both new and previously run jobs) (b) repeatability is a constant frustration because the exact tooling placement from job to job can never be replicated.

Q&A

How difficult and how long is the installation?

The Universal Tooling Plate mounts easily on the printer and takes approximately 1 hour to install*.

*a detailed step-by-step installation manual is included

How We Made It Better

JNJ's Tooling Plate Assemblies are designed with an alphanumeric matrix scale for X and Y axis for easy support pin identification and side vacuum chuck locations. This data can now be documented to guarantee precise repeatable setup and quick changeover for every job.

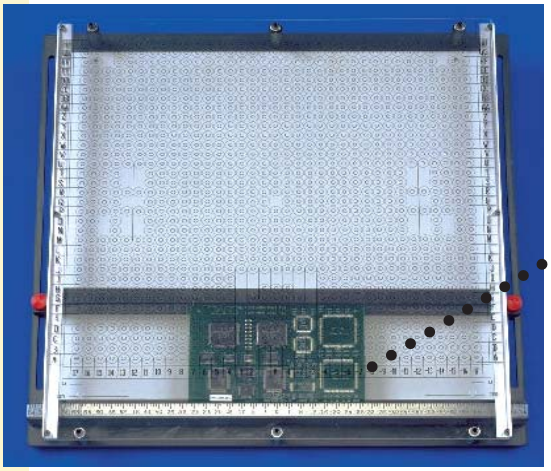
Our tooling plates have over 1000 support holes all centered on .400" pitch. This dimension allows the support pins to be closer, giving the board additional support. In addition, JNJ has developed offset support pins (top end of the pins are off center) to further bridge the spacing. Our flexible design provides extra support where needed,and gives us a tremendous advantage over the existing tooling resulting in great print results and less rework.

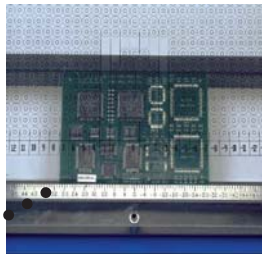
And Still Better...

Our Off-line Setup Fixture allows operators to configure new setups without interrupting your existing manufacturing run. It makes changeovers and initial setups fast and easy. Capable of handling a wide range of board sizes. Perfect for densely populated double-sided boards.

Off-line Setup Fixture

Our Off-line Setup Fixture combines alphnumeric scales on X and Y that is a mirror image of JNJ's Universal Tooling Plate Assembly and support pin locations printed on Mylar film. This setup fixture replicates the exact hole layout configuration on our tooling plate. The Mylar is sandwiched between two Plexiglass frames for protection, and a simulated set of conveyour rails have been added to hold the board in position. The board is placed on the rails upside down so that the bottom of the board can be seen from the top view. This enables the technician to clearly pinpoint the available holes for selecting the proper board support positions and record the selections accurately.





Installing JNJ's

Step 1: Remove the original MPM mounting screws

installation continued on page 3

Determining Which Plate is Right for You

JNJ manufactures two tooling plate styles for MPM printers... the UTP-1100 Rev. H and the UAYTP-1100. Each of these Universal Tooling plates has been designed with the flexibility to mount in an AP or an UP2000 MPM printer. Both models of tooling plate come pre-drilled with all of the necessary mounting holes for either top or bottom mounting configurations, and will fit all standard AP or UP-2000 printers from Speedline/MPM. Since the JNJ Universal Tooling plates come pre drilled with all of the necessary mounting hole configurations, no drilling or tapping of holes is necessary. The original factory supplied MPM tooling plate is unbolted and removed from the printer, and the JNJ plate is mounted in its place, using the same mounting holes and hardware. The overall time spent to remove the old tooling plate and install and calibrate the new JNJ tooling plate takes about 1 hour.

Tooling Plate Description

Part Number	*Printer Model*
UTP-1100(H)	UP2000 Printer-Standard & Quick Change Tooling
UAYTP-1100	AP Series & UP2000 with Y-Snugger Option

JNJ can provide drawings and a questionaire to help determine specific tooling plate for your printer

The key differences between the two plates is that the UAYTP-1100 is designed to work with printers equipped with the "Y" Snugger option, where the clamping system is incorporated into the conveyor rail system. The UTP-1100 Rev H is designed to work with any AP series or UP-2000 that does not have the Y Snugger option. The UTP-1100 Rev H and the UAYTP-1100 are both pre drilled with all of the necessary mounting holes to allow them to be installed in either an AP or UP-2000 without the need to drill or tap any holes in the printer.

It should be noted that, MPM printers utilize two sensors in their initial setup; one is the tactile height sensor, the other is the board stop sensor. In newer models, the tactile height sensor is built into the squeegee head, and the board stop sensor is part of the camera assembly. In older models, the tactile sensor is a free standing device with a magnetic base, and the board stop sensor is an electro-mechanical switch that mounts to the front vacuum chuck rail. These older systems require optional sensor mounting brackets to be ordered with the JNJ Universal Tooling plates. It is important to inform JNJ which style sensors your current system has before ordering your new universal tooling plate from JNJ.

Q&A

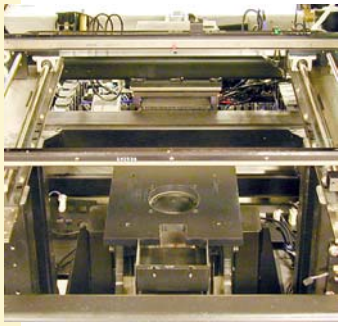
How does our Off-line Setup Fixture help you?

The Off-line Setup Fixture allows operators to configure new setups without interrupting existing manufacturing run. It makes changeovers and initial setups fast and easy.

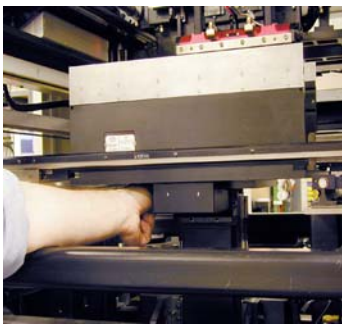
Some Standard Features

- Off-line Setup Fixture
- Over 1000 support pin locations with plugs on .400" pitch
- Uses existing printer mounting holes
- Uses existing printer vacuum system
- Board sensor mounts to side rail, or on a custom bracket for placement in hole matrix
- 4 sets of vacuum side plates - 2", 3", 4" and 8"
- Alphanumeric strips along X and Y axis allows setup operator to identifiy exact support pin location
- Hard anodized plate, vacuum chucks, and board supports
- Guaranteed Repeatable Setup & Quick Changeover

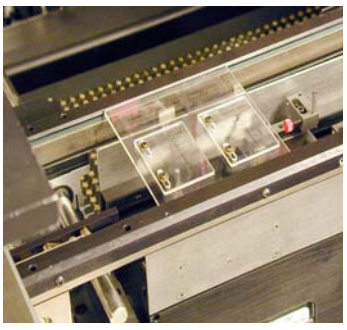
Universal Tooling Plate Assembly w/ Ease



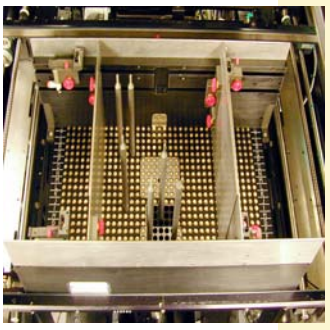
Step 2: Remove the entire MPM tooling plate assembly from the printer



Step 3: Install the JNJ tooling plate assembly into the printer, and bolt in place



Step 4: Calibrate the JNJ tooling plate assembly to the Off-line Setup Fixture



Step 5: Install side plates, snuggers, & support pins, and start saving time & money!

Providing Solutions to the End User!!

AquaSonic Ultrasonic Cleaning Systems

JNJ's AquaSonic Stencil Cleaning Systems incorporate the latest in ultrasonic technology with pulse and sweep generators and piezoelectric transducers. Our designs incorporate stainless steel plumbing and tanks, three-chamber waterfall solder traps,

power pump to drain, 5-micron filter, and transducer mounting positions that leave no dead areas or shadowing in the wash tank. All of our cleaning systems are complemented by our line of aqeous cleaning chemstries. **AQS-3500** Manual Stencil Cleaner offers a generous 1200 watts of ultrasonic power. This duel tank system includes a solder trap and 5-micron filter for minimizing waste and prolonging bath life. **AQS-7500** Fully-Automatic Stencil Cleaner features PLC control with program storage and power control suitable for a wide range of board and stencil cleaning applications. The touch screen interface panel with password protection assures ease of operation and limits program changes to authorized personnel. **RFS-25** Recirculation and Filtration System provides closed-loop processing of the rinse water used in the cleaning cycle. When combined with the AQS-7500's recirculation and filtration system, bath life for both the rinse and wash tank fluids can last up to 6 months, drastically reducing both the need and cost for hazardous waste haul removal. This system also eliminates the necessity for costly venting and high electrical costs associated with evaporators.

Consumable Products

We manufacturers screen and stencil sories and cleaning OEM stencil printing design and manufac- machined squeegee holders for most We are recognized derStencil Wiping and custom under- every printer worldwide. We also offer GlobalTech®, JNJ's advanced CFC, HCFC, VOC Free and Aqueous cleaning solutions.

high quality printing acces- products for all machines. We ture precision blades and OEM printers. experts in *Un- Rolls* - our OEM stencil rolls fit

Custom & Production Maching

JNJ has complete facilities and equipment for a wide range of machining operations. We are capable of working with all ferrous and non-ferrous metals, as well as plastic, Teflon, nylon, delrin, and polyurethane. We have the ability to design and fabricate machined parts of virtually any size and configuration. Job sizes can range from a run of one, to large jobs consisting of thousands of pieces, made to our prints and to your tight tolerances.

Samples of custom-made parts are shown in photos.

JNJ INDUSTRIES

290 Beaver Street
Franklin, MA 02038
800-554-9994 or 508-553-0529 * Fax: 508-553-9973
e-mail: equipment@jnj-industries.com
www.jnj-industries.com

The Industry Standard in uality and Performance

JNJ's commitment is not only to provide the highest quality products possible, but to make them available to you for fast delivery through a network of local, national and international distributors.

SMT PRODUCTION SUPPLIES & EQUIPMENT
CUSTOM & PRODUCTION MACHINING