MYCRONIC

When passion meets innovation

MYPro series -
MY700 Jet Printer and Jet Dispenser

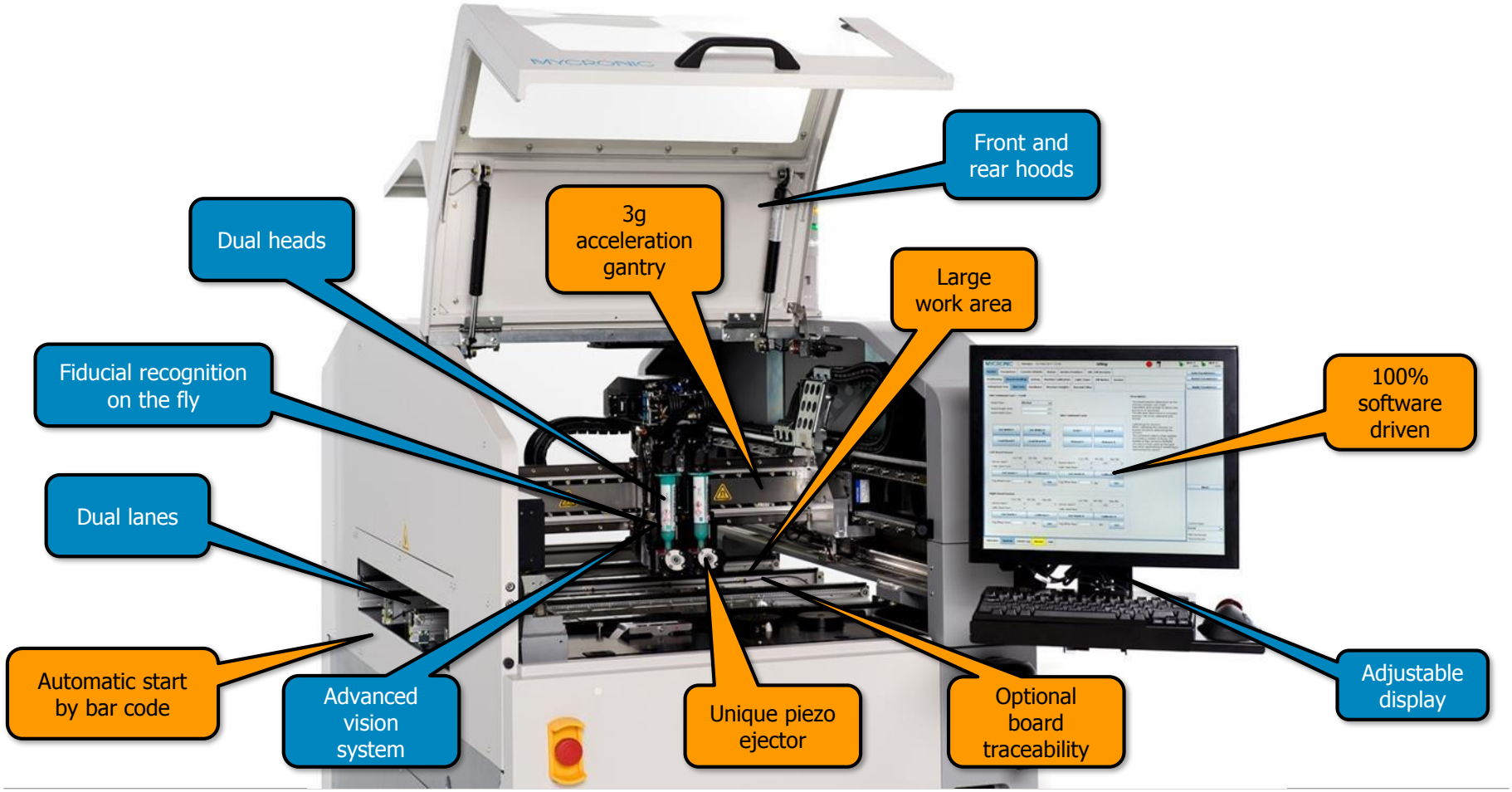
High speed jet printing and dispensing

overview

- Improves printing quality and yield
- Offers unrivalled production flexibility
- Replaces or complements the stencil printer
- Contributes to a leaner production environment
- Reduces operational cost
- Offers an operator independent production solution
- A future proof production solution

A state-of-the-art production solution

MY700 for screen printer replacement and high speed dispensing



MYCRONIC

More than 12 years of experience

large installed base in all geographical regions

On-the-fly

300 Hz

piezo jet

dual heads

high-speed

few wetted parts

Easy maintenance

high-speed

non-contact

1,080,000 dph

software driven

no stencils

board stretch compensation

MYCRONIC

High-speed jet printing and dispensing

key benefits

Very fast and accurate

Dual lane, smart board handling and buffering

One database for all machines

Automatic board stretch compensate

Changeovers in no time

Board revision on the fly

Offline or online job program creation

Optimized solder paste deposits

Productivity boost

in comparison with MY600

faster board transfer

faster height measurement

improved fiducial search time

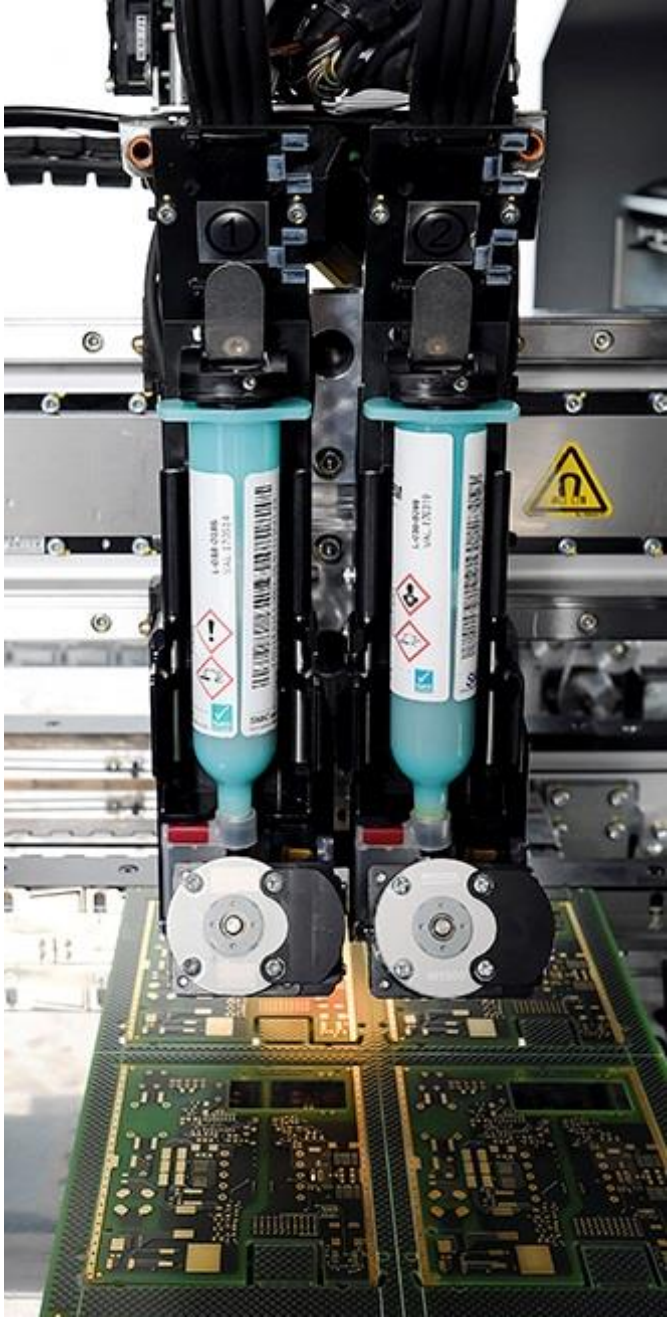
+48%*

increased dot volume

optimized buffering

dual ejectors

**actual throughput is application dependent*

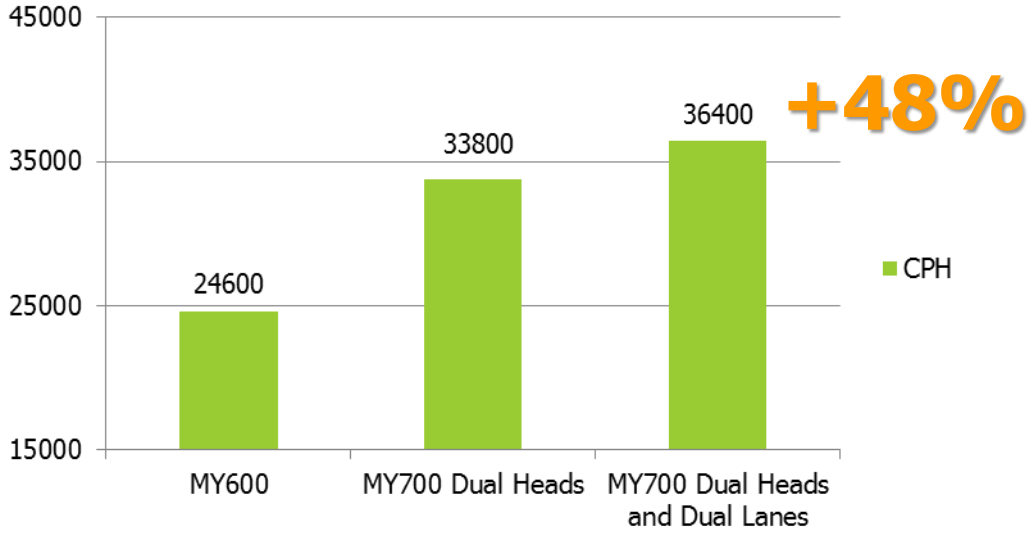


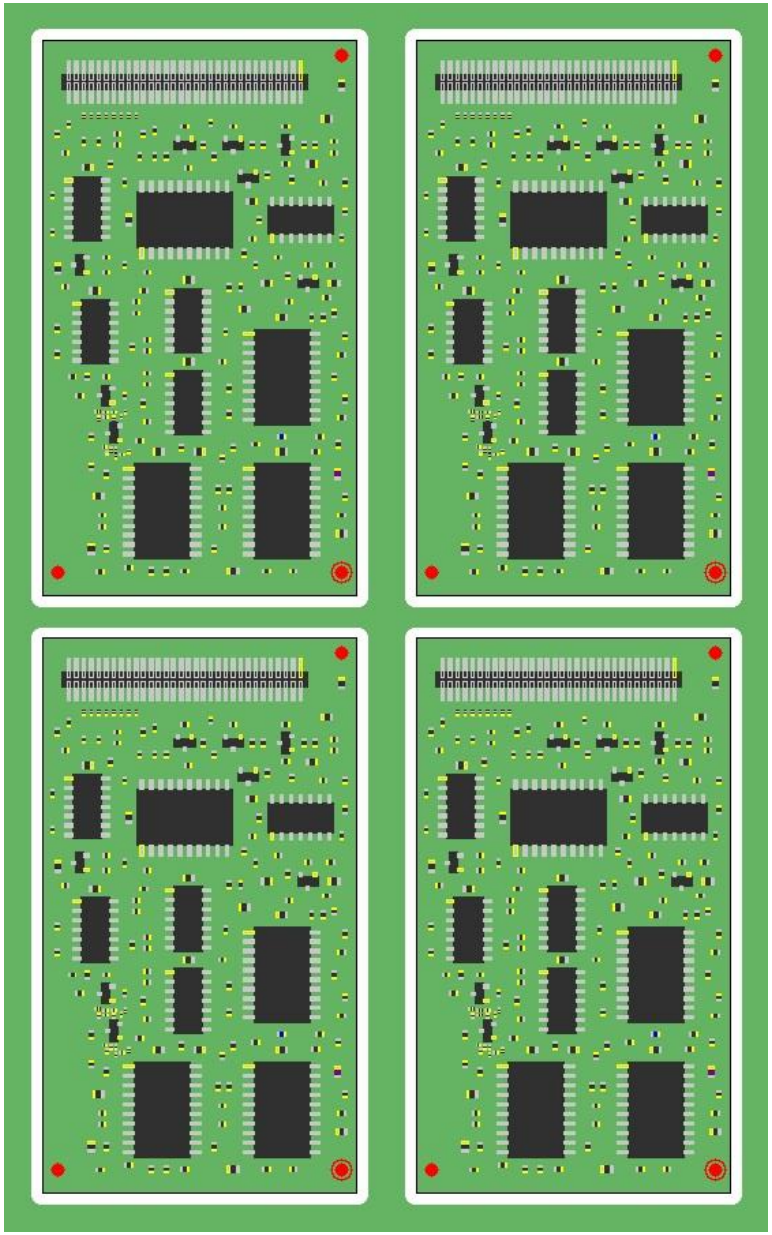
MYCRONIC

Benchmark test

based off Demo Board 16

- A panel of 4 PCB's and a total of 696 components
- Jet printed at a speed of 36 400 CPH in dual lane mode
- Dual heads configuration with AQ and AG ejectors
- The system automatically determines the optimum ejector to be used for each pad for shortest cycle time.



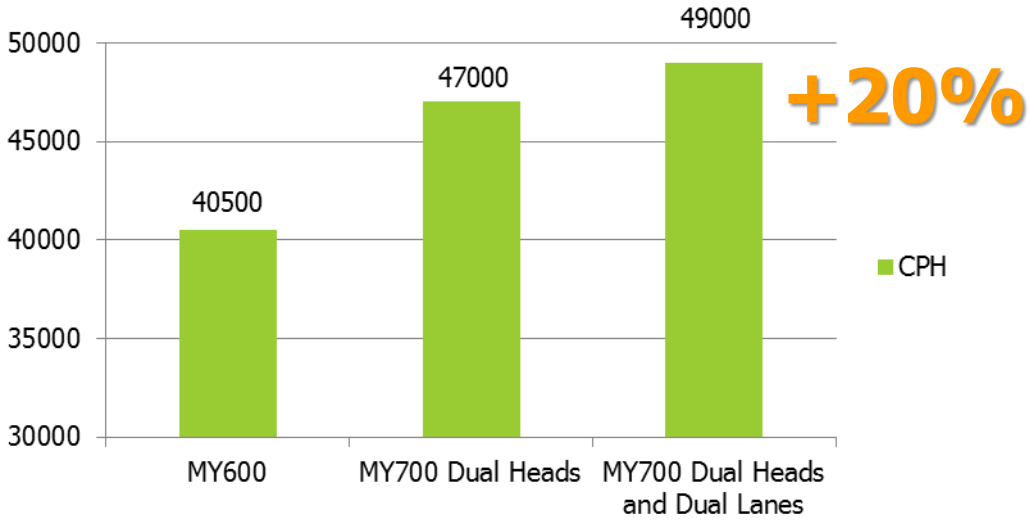


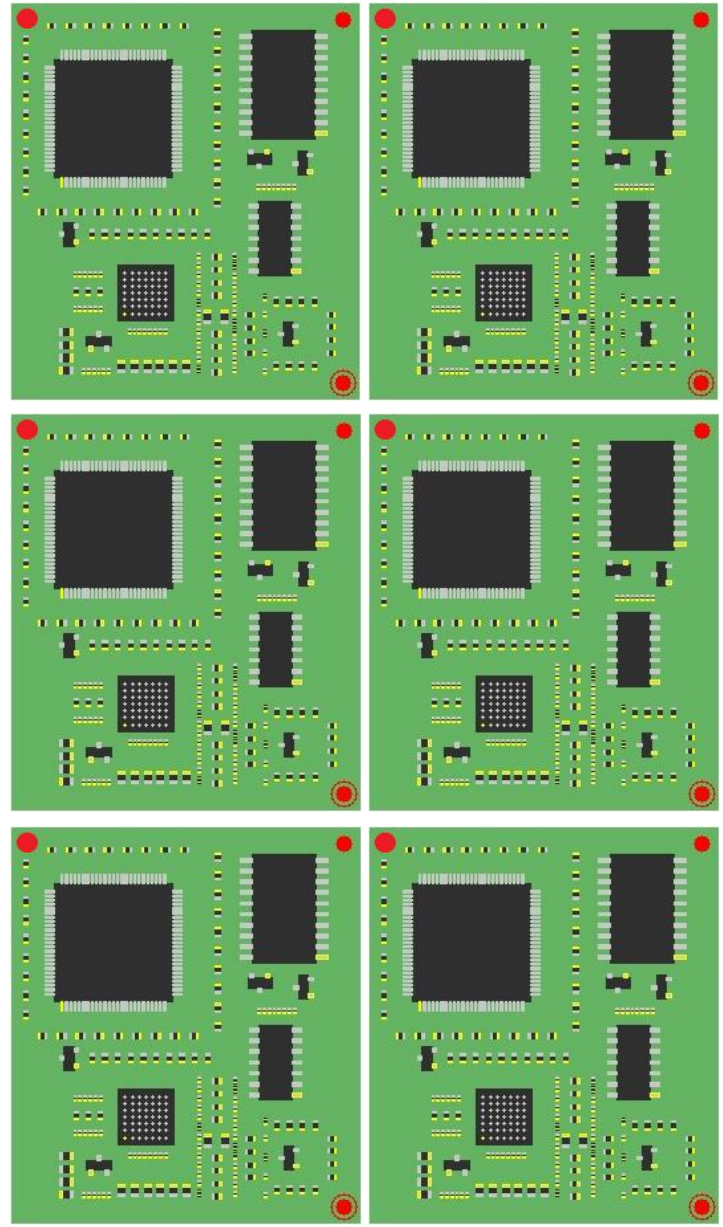
MYCRONIC

Benchmark test

based off Demo Board 21

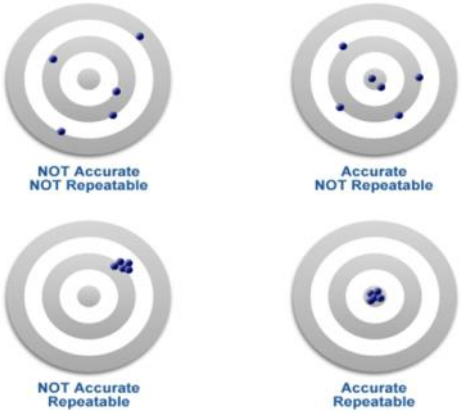
- A panel of 6 PCB's and a total of 954 components
- Jet printed at a speed of 49 000 CPH in dual lane mode
- Dual heads configuration with AQ and AG ejectors
- The system automatically determines the optimum ejector to be used for each pad for shortest cycle time.

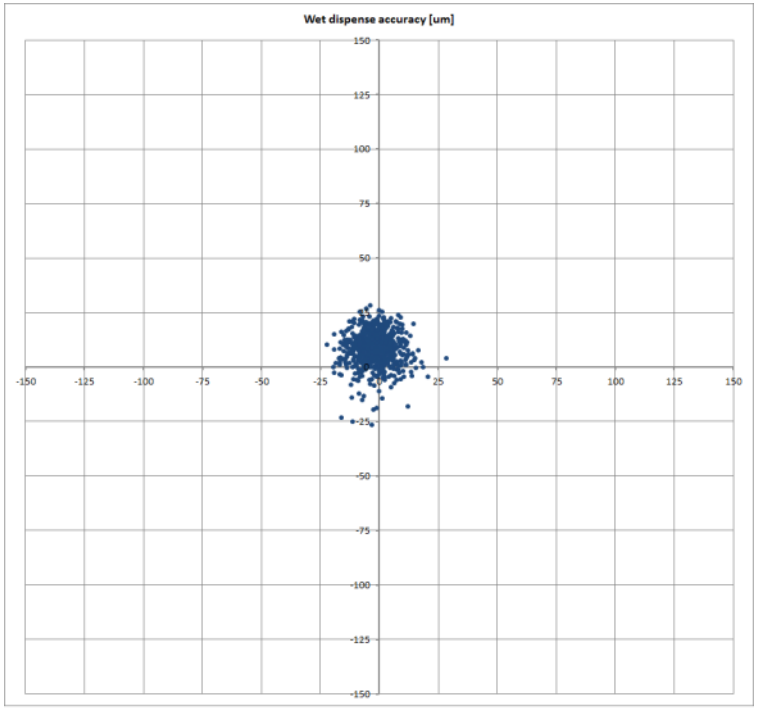




Accuracy and repeatability

- Wet dispense accuracy and repeatability test
- 722 dot pattern, 3 mm pitch, solder paste
- Single dot repeatability, 3σ (X,Y) ±35 µm
- Single dot accuracy, Cpk=1.0 (X,Y) ±40 µm





Competition uses lower speeds and larger dot size to reach similar accuracy numbers.

The future of intelligent production

the jet printing revolution continues

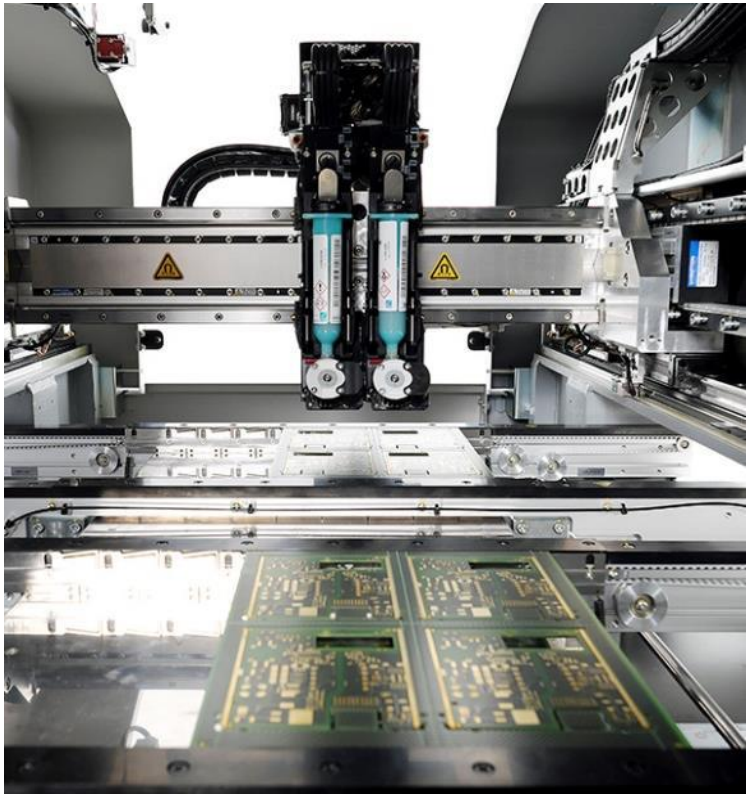
- A new jet printing and dispensing platform with dual lane and dual head capability for increased throughput
- Improved reliability, longevity and performance due to a well proven design and thouroughly field tested components
- The compact foot print reduces overall line length and frees up floor space
- The unique combination of high-speed solder paste printing and assembly fluid dispensing now allows the MY700 to do the job of two machines which saves cost

MYCRONIC

MY700JP, brings out the very best

solder paste jet printing on mixed boards at lightening speed

- The dual head system with both a small and big dot ejector increases throughput significantly
- Combination of large and small dot ejectors increases throughput with 48%[1)]
- Allows fine pitch jet printing for 0.4 BGA and 01005 components on the same board as larger QFN's and connectors
- Doubles the syringe capacity using two cassettes increases uptime and MTBA

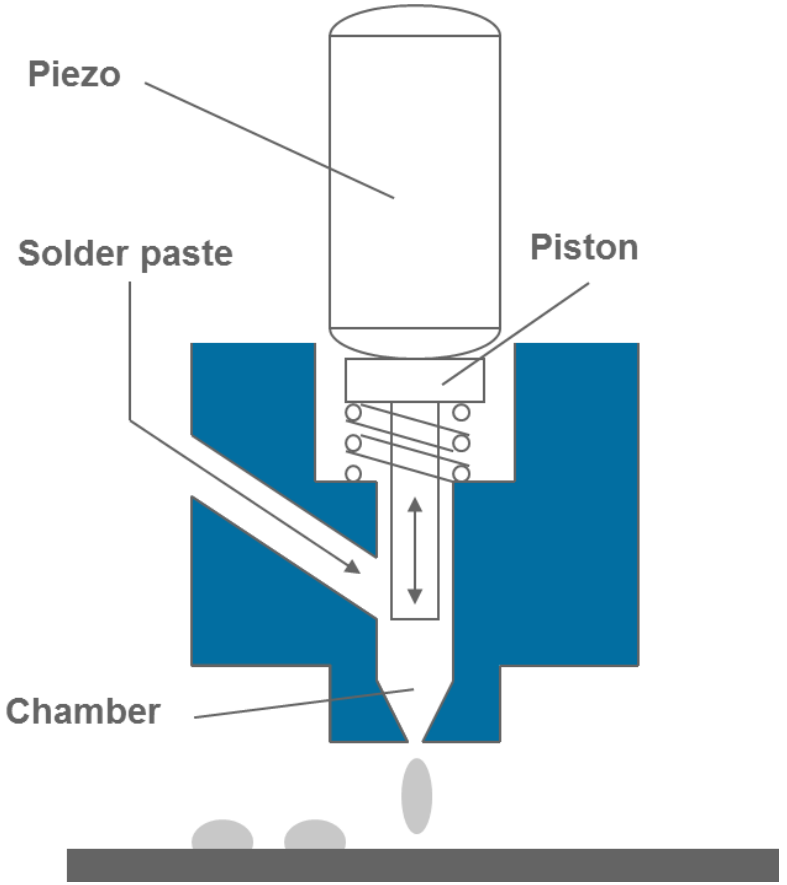


1) With reference board Demo Board 16

The ejector

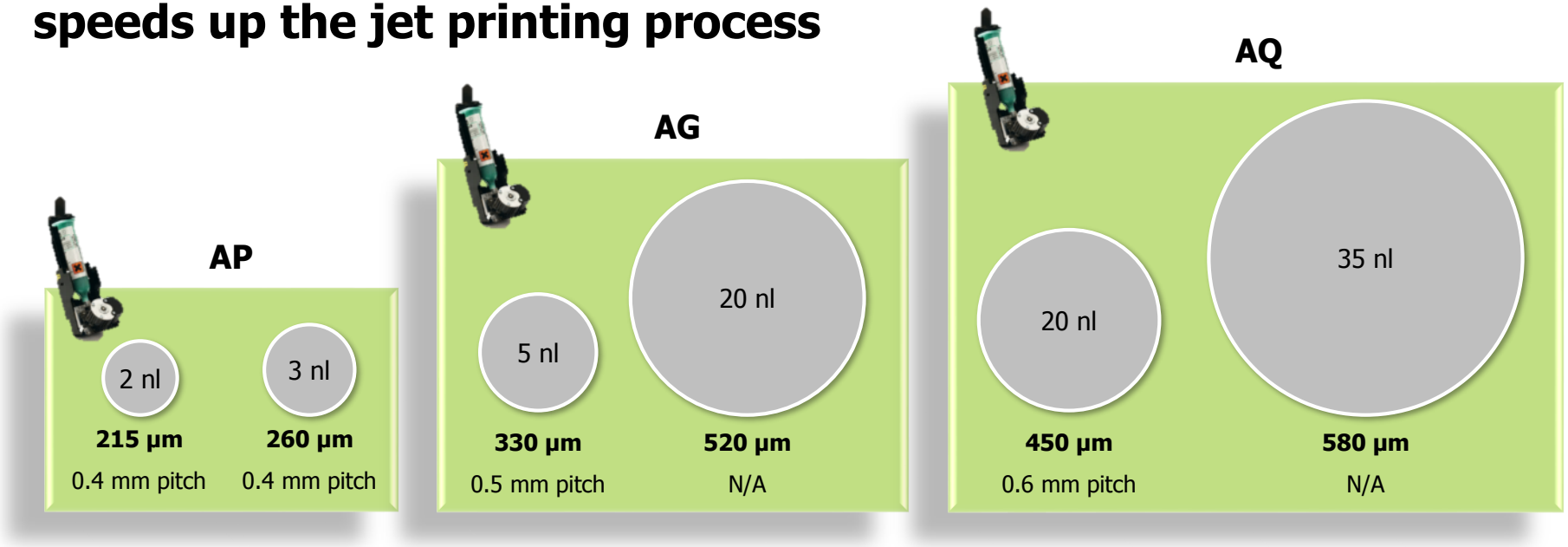
for on-the-fly application of solder paste on PCBs

- Unique ejector technology
- Only jet that can have a range of dots without changing hardware
- Combination of piezo and auger valve technology



Jet printing with dual heads

speeds up the jet printing process



- The system automatically determines the optimum ejector to be used for each pad for shortest cycle time.
- The AP ejector is approved with class 6 solder paste from Senju
- The AG and AQ ejectors are approved with the lead-free class 5 solder paste also from Senju
- Using a combination of AG and AQ ejectors can for selected applications speed up the production process
- Both Senju class 5 and class 6 can be reflowed together but class 6 requires an inert environment i.e. nitrogen.

MYCRONIC

Approved and jettable solder pastes

Strong partnership with qualified media vendors

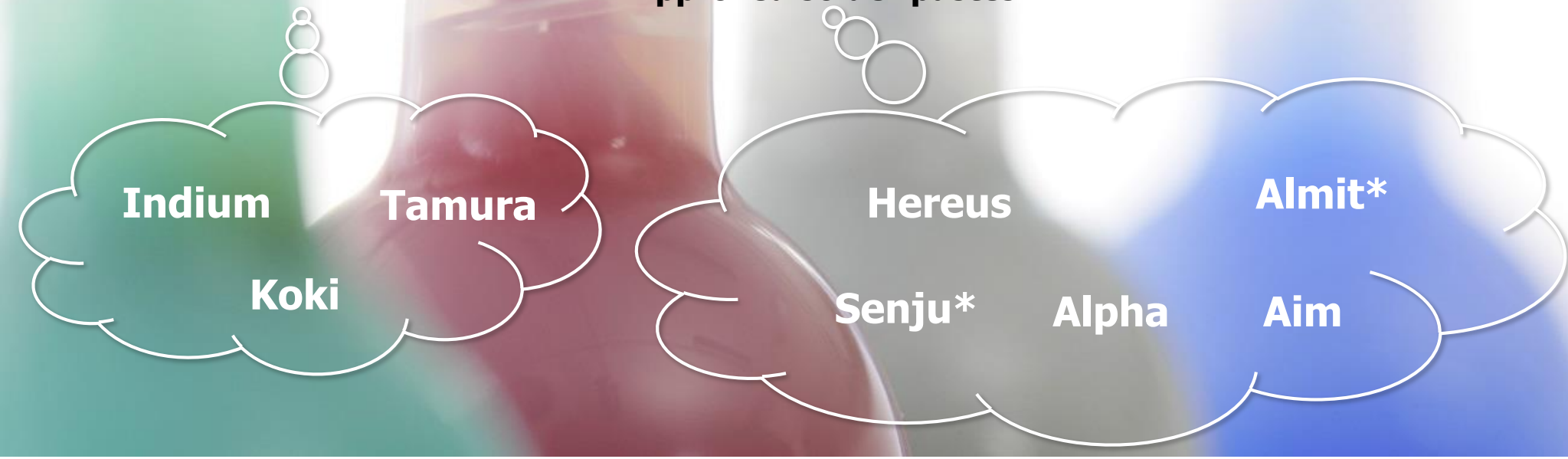
Leaded, lead-free and halogen-free

Ejector, parameters and solder paste

Distributed* by Mycronic and direct by solder paste partners

Jettable solder pastes

Approved solder pastes

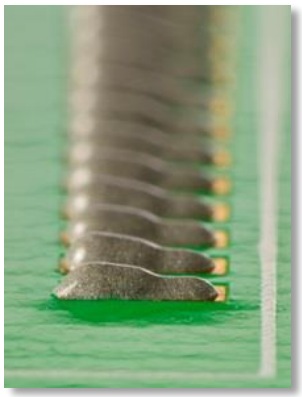


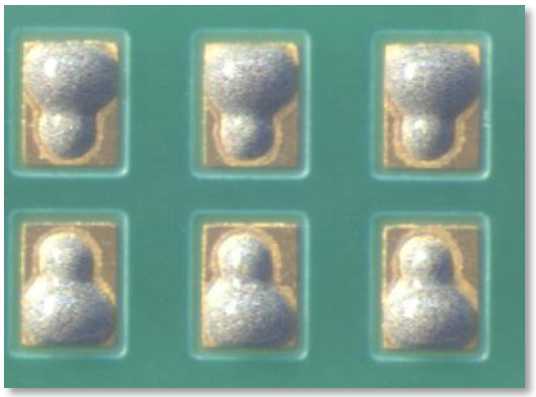
MYCRONIC

Quick setup and deposit optimization

offline job preparation and optimization

- Very flexible, software driven setup
- Fast and automatic program generation
- Allows last minute design changes
- Easy and intuitive to optimize dot shapes
- Best practice approach
- Automatic board stretch compensation
- High yield and utilization
- A repeatable and operator independent process

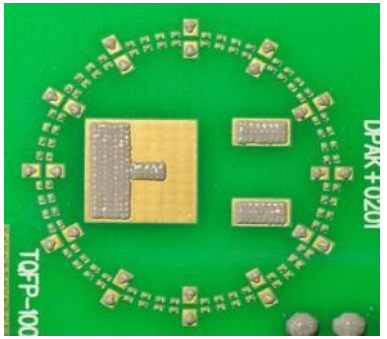




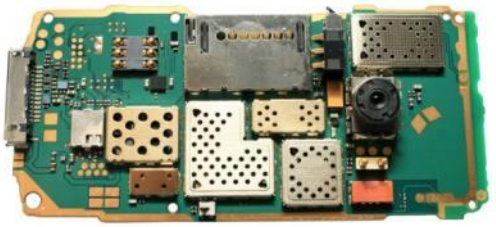
Jet printing improves quality and yield

a wide range of application and benefits

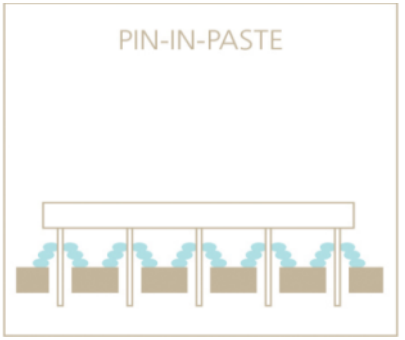
- Capable to print boards for mixed components enables a new level of design freedom
- Perfect as an add-on process for i.e. shield attach
- Pre-set strategies for PiP, easy to optimize on volume for best result
- Prints on top of bottom component for package on package applications



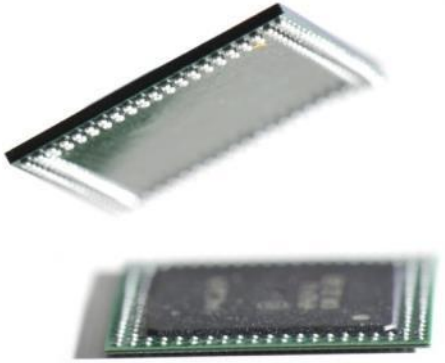
Broadband



Shielding



Pin in paste

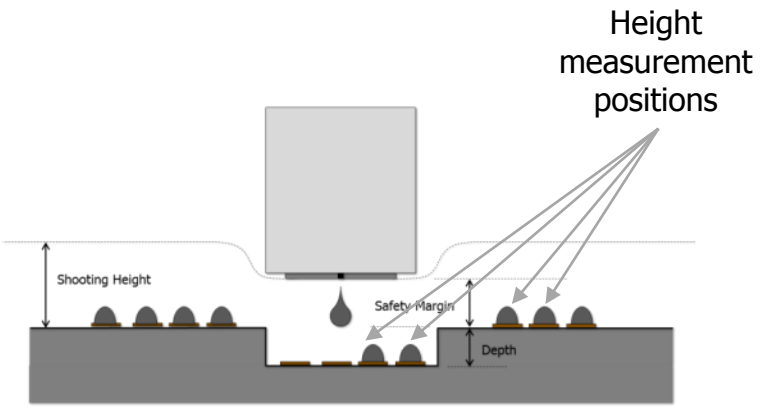


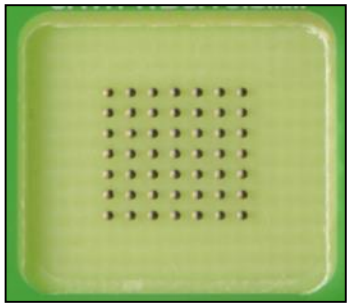
Package on package

Jet printing multi-layer boards with ease

prints in cavities, on plateaus and carriers with ease

- Advanced height measurment maps out the entire board surface
- Cavities and plateaus are assigned dedicated heigh zones
- Jetting height is maintained for low plateaus and shallow cavities
- With a safety margin of 300 um and nominal jetting height of 650 um a cavity can be 350 um deep
- Deeper cavities can be jetted but positional accuracy will be compromised.

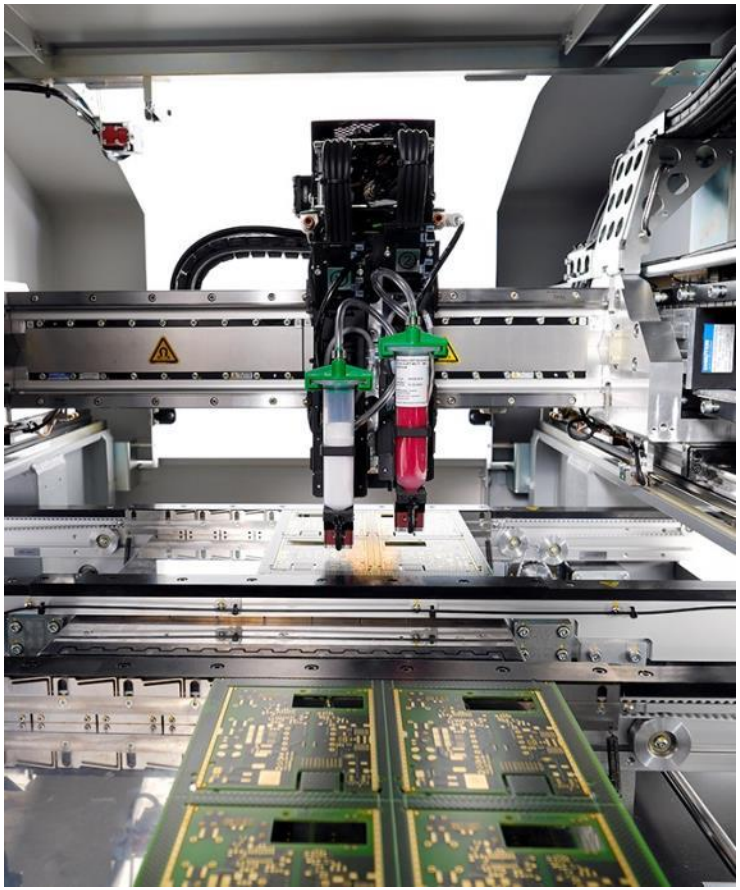




MY700JD - unrivalled throughput

based on the high performing jet printer platform

- Increases throughput significantly in a wide range of dispensing applications
- Replaces custom built multi-head solutions for bonding and selective coating applications with epoxy and SMA
- Allows dispensing of two different assembly fluids in the same process step
- Well proven and compatible with a wide range of industry fluids



MY700JX - a unique dual head solution

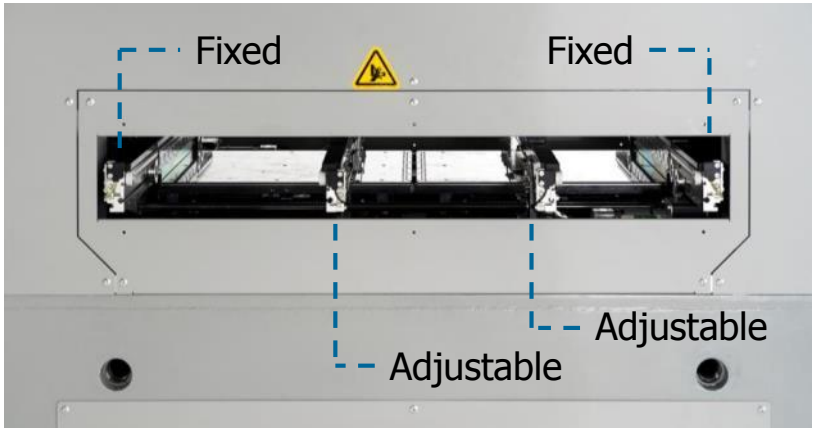
combines solder paste jet printing with high-speed dispensing

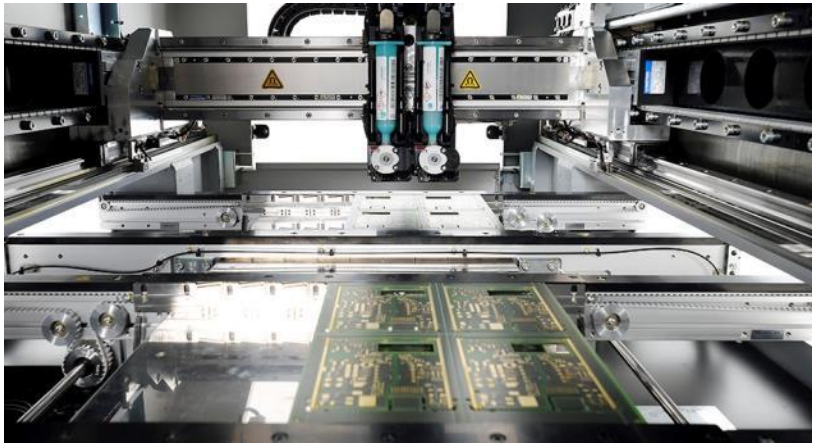
- Two heads also enables processes to be combined for a more efficient and floor space effective operation
- Combine solder paste printing and dispensing of adhesives
- Solder paste and glue to handle dual sided layouts or high reliability products
- Solder paste and flux for advanced packaging solutions driven by miniaturization.
- Unique flexibility and throughput for highly demanding production sites.

Smart board handling

for more flexibility and better utilization of work area

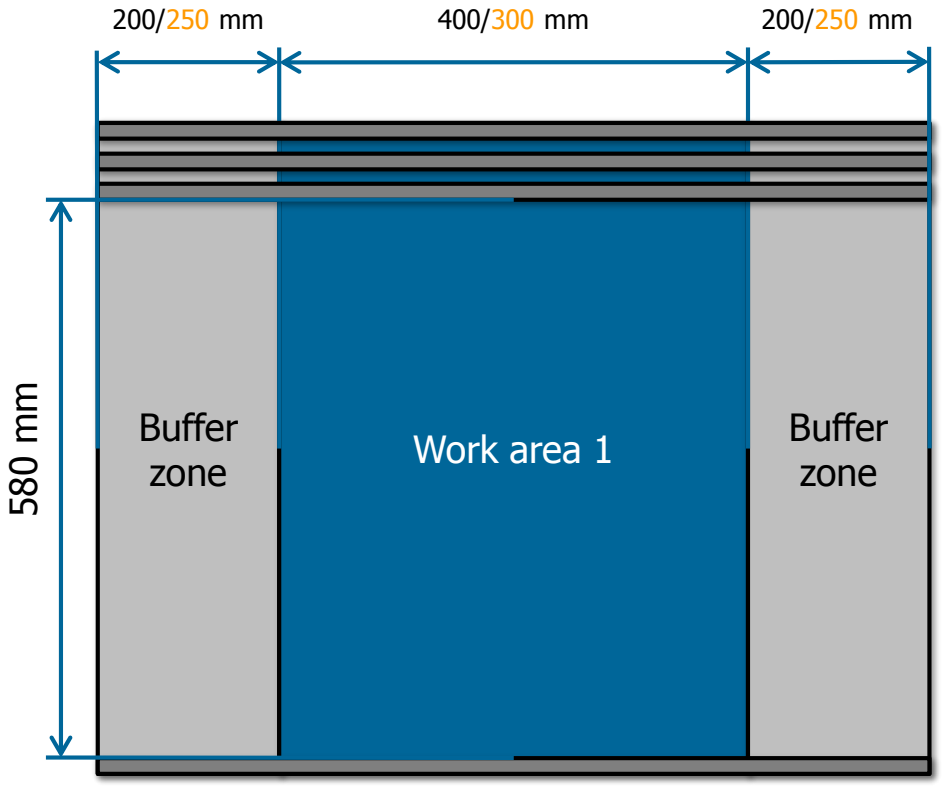
- Conveyor rails easily adjustable to accomodate single or dual lane setup. Four rails as standard.
- Large work area with best in class machine depth.
- Two internal buffering options optimizes work area and loading time to your needs.
- Dual lane virtually eliminates board loading time, board already in jetting position on the 2nd lane.
- Generous over and under board clearance allows room for tooling and pre-mounted components.



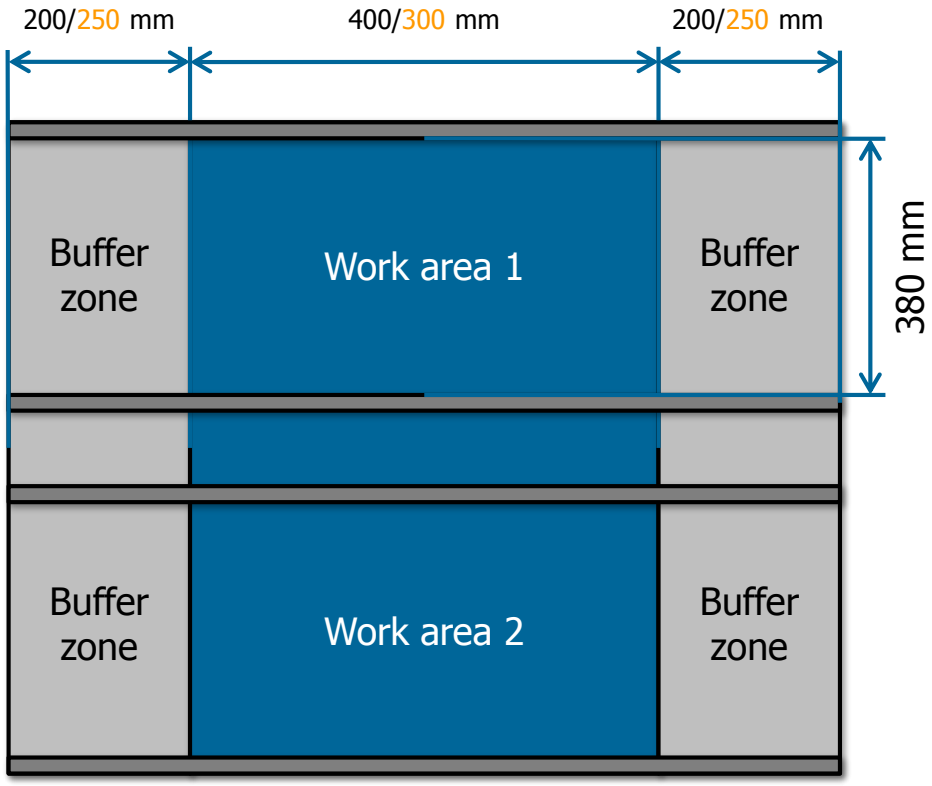


Configurable and flexible work area

flexible buffering options for better utilization of work area



Single lane mode

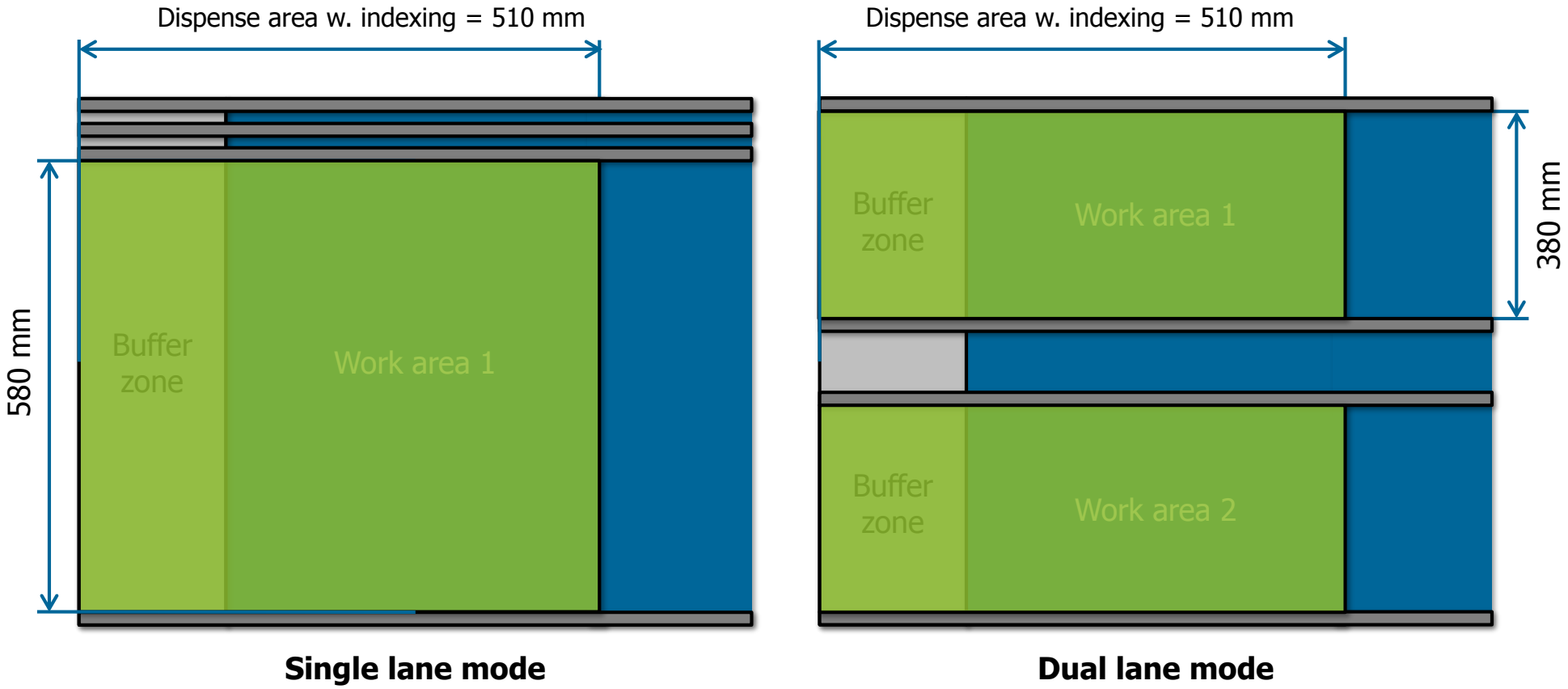


Dual lane mode

xxx/yyy = 200 mm buffer option / 250 mm buffer option

Configurable and flexible work area

board indexing allows bigger boards to bet jetted



Single lane mode

Dual lane mode

xxx/yyy = 200 mm buffer option / 250 mm buffer option

Great ergonomics and serviceability

- Double hoods for easy and fast access to all service points. Hoods are intelligently damped and virtually weightless.
- Grease points are easily accessible from both front and rear.
- 20% lower machine weight than previous generation.
- The adjustable screen is ergonomic and the GUI intuitive for the operator.

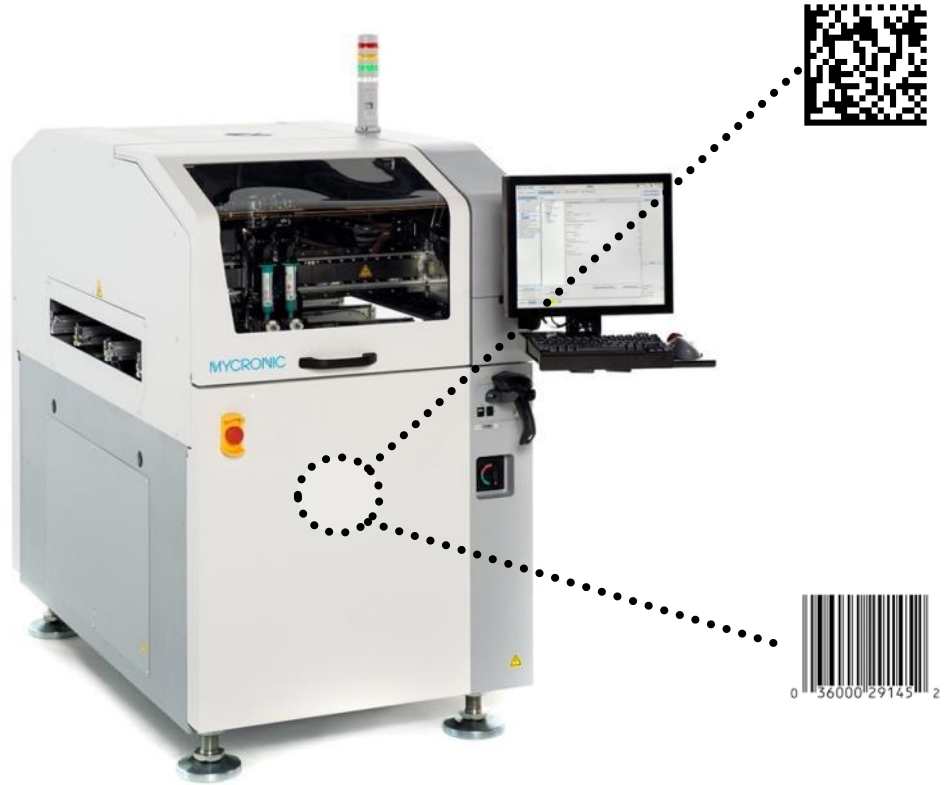
MYCRONIC

A user-friendly and error-proof operation

- The cassette has ID chip and barcode on the cartridge which ensures that the right fluid for the job is used
- The system keep track of fluid consumption and alerts the operator when fluid level is running low
- The improved cassette handling guidance on the machine display improves ease of use
- Smaller fiducial marks can now be read by the new vision system
- Higher camera resolution allows smaller bar codes with more data often found on consumer products readable.

Automation options

continuous development of capabilities and technologies



Board Traceability

I have a faulty board. From which batch of solder paste were the boards printed?

Did the cassette get exchanged at some point?

Which date were these boards produced?

Were any dots missing and repaired?

Barcode software

Now I can have my next job loaded automatically and have an operator independent process.

This is how I want to run my factory!

Increase the return on your investment!

jet printing for high mix and high volume

- Cost savings from reduced need to store, clean and replace stencils
- Increased line utilization due to a significant reduction in changeover time
- No manual adjustments, conveyor width adjusted automatically
- Combine with conveyor scanners and optional sw for an automated NPI line
- Increased yield reduces the cost for re-work

MYCRONIC

MY700 facts

basic specification

Machine weight
1,600 kg (4,400 lbs)

Environment
18 – 32°C
30 – 80% RH

Footprint
1,550 x 843 mm

Air consumption
5-10 bar
250 l/min
ISO 8573-1 4 4 4

Power, AC 3-phase
Peak 4 kW
Average 3 kW

MY700 basic specification	
Models	JP, JD, JX
Jet frequency	720,000 dph / 1,080,000 dph(1)
Production Performance	49 000 cph(1)(2)
Single dot repeatability, 3σ (X,Y)	±35 µm
Single dot accuracy, Cpk=1.0 (X,Y)	±40 µm
Dot volume	5 to 35 nl(3)
Media	solder paste SMA, epoxy and more

(1) Requires additional high-speed option
(2) Demo Board 21 used as reference board
(3) With dual heads and in dual lane mode

MYCRONIC

Offline programming

100% software driven

- Jet printing is completely software driven. Program offline with the graphical editor and simply send the job description to the machine.
- Programs are easily fine-tuned off-line, verified and ready to run – before the first board enters the line.
- Each and every solder joint on a board can easily be optimized, using the graphical drag-and-drop functionality; volume, position, height, shape, pad coverage.

Summary

High Speed/ High Accuracy Platform

3G acceleration

encoder resolution of 0.2 micron

Unique Solder Paste Jetting Technology

>12 years solder paste experience

World's fastest solder paste dispenser (>1M dph)

Unique SW features

Random dots on the fly

auto balancing of ejector types and machines

MYCRONIC