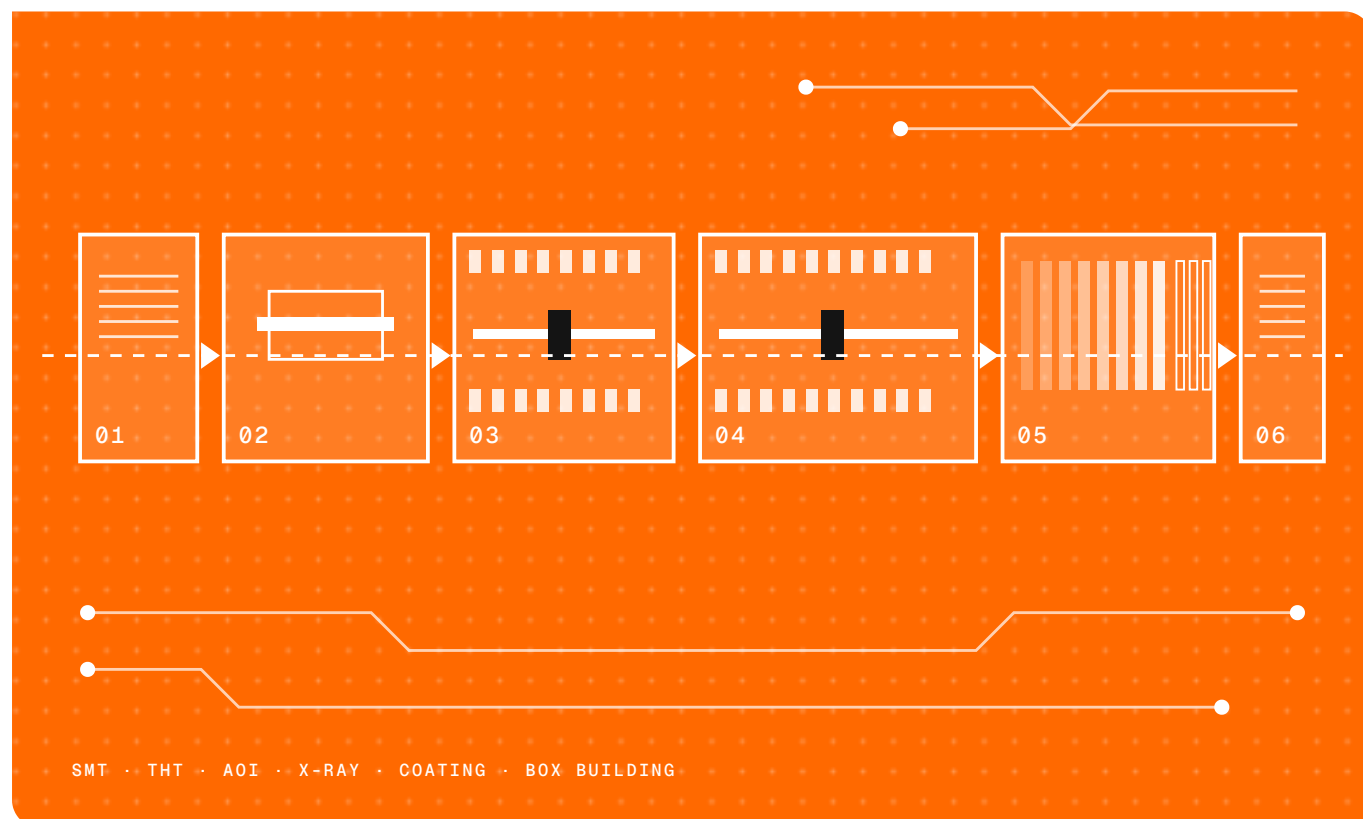


Machine park, processes and production capabilities.

Everything that stands between your design and a finished device — on one line, under the eye of one project owner.

- Machine park and technologies in use
- Production range: pitches, packages, special processes
- Quality indicators and certifications
- Development and investment plans



/ WHO WE ARE

A Polish electronics manufacturer from prototype to volume production.

For 15 years we have been assembling SMT and THT boards for companies that want a manufacturer who picks up the phone — without giving up the processes of a large factory. A small shop reacts fast but gets lost at scale. A large EMS has procedures, but your project is a number in the queue. We built Techbit so you don't have to choose.

The same team, the same line and the same project owner take your product from the first unit to series production: from DFM consultation and component sourcing, through assembly, inspection and coating, to box building and shipping finished devices.

ISO 9001:2015

certified quality management system

99.4%

FPY — boards right first time

98%

deliveries on time

15 years

of electronics assembly experience

18+

component and PCB suppliers

2 days

to quote a complete RFQ

Three things you get from the first contact

Quote in 2 days

A complete RFQ (BOM + Gerber + Pick&Place) is quoted within 2 working days. No “we'll get back to you”.

DFM consultation

Before assembly starts we tell you plainly what on your board will cause trouble on the line — and how to fix it.

Project owner

One person knows your project. A call back the same day, an e-mail within 24 h.

Who we work with

01 Prototypes

We assemble from a single unit and walk through each revision with you.

02 Small and medium series

Repeatable production without your own line — we take on sourcing, quality and deadlines.

03 Volume production

A second source that keeps up with change: agreed schedules, fast response when orders grow.

Industries we produce for

HIGHTECH

IT

BUILDING AUTOMATION

INDUSTRIAL AUTOMATION

AUTOMOTIVE

MEASUREMENT DEVICES

TELECOMMUNICATIONS

ENERGY STORAGE

ELECTRONICS DESIGN



The responsive contact and technical knowledge of the Techbit team make it possible to run both simple, smaller projects and technically more complex electronics projects smoothly.

Patryk Strzelewicz · CEO, Mindsailors Sp. z o.o.

/ WHAT WE DO

One partner for the entire assembly chain.

Eight processes under one roof — from Gerber file to packed device. Each of them has its machine and its parameters in this document.

01



DFM consultation

Before assembly starts we check Gerbers, BOM and footprints against our line. We tell you plainly what to fix before you pay for a series.

02



Component and PCB sourcing

We order components and PCBs for you from 18+ suppliers, negotiate discounts and control incoming deliveries. You collect finished boards.

03



SMT assembly

A line with an SPI-equipped paste printer, two Pick & Place machines and an 8-zone reflow oven. 0402 as standard, fine-pitch, QFN, BGA.

04



THT assembly

Selective soldering under nitrogen on a Nordson Novo 460 plus manual assembly stations for connectors and odd-form components.

05



AOI and X-ray inspection

Automated optical inspection of boards after reflow and X-ray inspection of BGA, QFN and hidden solder joints.

06



Design partnership

Full PCB design — schematic, layout, production documentation — delivered with our design partner. One point of contact from idea to series, and a design that is built for our line from day one.

07



Conformal coating

Selective application of protective coatings on a PVA Delta 6 robot: protection against humidity, condensation, dust and harsh environments.

08



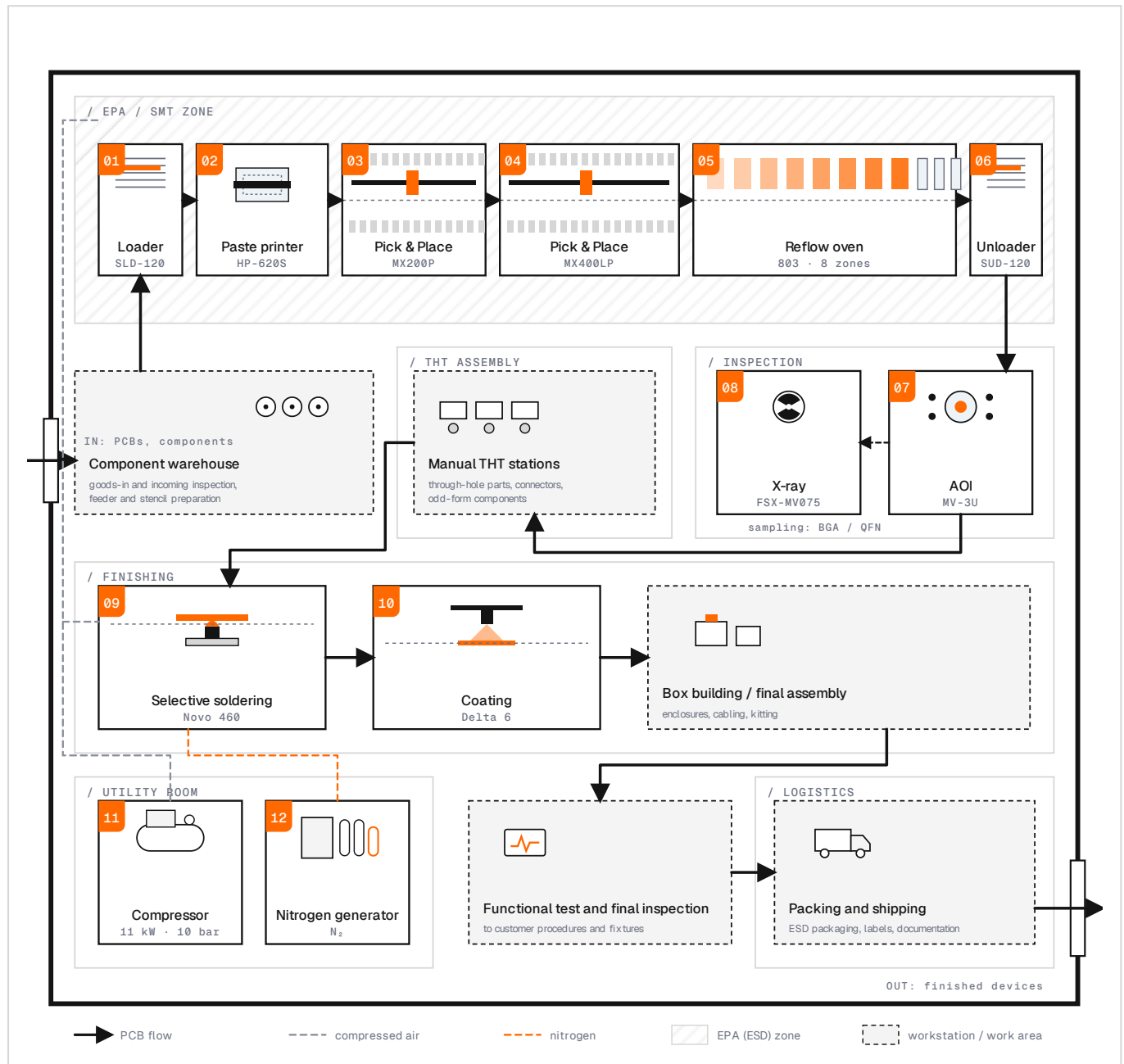
Box building and testing

A finished device, not just a board: assembly into the enclosure, cabling, functional tests to your procedures, ESD packing and shipping.

/ PROCESS FLOW

From the component warehouse to a finished device.

Schematic of the Techbit production floor — top view (not to scale). Machine numbers match the machine cards later in this document.



01 Goods-in and incoming inspection; preparation of feeders, stencils and programs.

03 AOI of boards after reflow; X-ray sampling for BGA, QFN and hidden joints.

05 Selective conformal coating.

07 Functional testing and final inspection to customer procedures.

02 SMT line in the EPA zone: paste printing with SPI → Pick & Place → reflow

04 THT assembly: selective soldering under nitrogen and manual assembly stations.

06 Box building: enclosure assembly, cabling, kitting.

08 ESD packing, labelling, documentation and shipping.

/ PRODUCTION RANGE

Assembly parameters to compare with your specification.

The values below follow from the capabilities of our machine park. If your project goes beyond any of them — write to us, we usually find a solution.

Assembly technologies

SMT assembly	single- and double-sided, mixed SMT + THT
THT assembly	selective soldering under nitrogen and manual assembly
Soldering	lead-free (RoHS) as standard; leaded on request
Order size	from 1 unit (prototype) to series production

Printed circuit boards

Board size	from 50 × 50 mm to 400 × 460 mm in line; larger formats on request
Thickness	0.6 – 3.2 mm; other thicknesses after consultation
Laminates	FR-4 as standard; other materials (e.g. IMS) after consultation
Panelisation	V-cut and mouse-bite panels, single boards

Inspection and test

AOI	5 cameras (top + 4 side), components from 01005, pitch from 0.3 mm
X-ray	75 kV microfocus tube, magnification >200×, oblique view up to 70°
Visual inspection	to IPC-A-610 at every process stage
Functional tests	on fixtures and to procedures supplied by the customer

SMD components

Smallest component	0402 as standard; 0201 on request
Fine-pitch	down to 0.4 mm (QFP, SOP); BGA / μ BGA / CSP, QFN / DFN
Largest component	up to 90 × 30 mm, height up to 18 mm (connectors, modules)
Feeding	tape 8–56 mm, trays, sticks, loose components

Paste printing and reflow

Printer	print accuracy $\pm 15 \mu\text{m}$, built-in 2D paste inspection (SPI)
Stencils	frames up to 736 × 736 mm; laser-cut stencils per project
Reflow oven	8 heating zones top/bottom + 3 cooling zones, forced convection
Profile	soldering profile per project, temperature control $\pm 1^\circ\text{C}$

Special processes

Selective soldering	boards up to 460 × 460 mm, drop-jet fluxing, N ₂ atmosphere
Traceability	order and component-batch identification; DMC laser marking from Q4 2026
Conformal coating	work area 521 × 485 mm, repeatability $\pm 25 \mu\text{m}$, 4-axis head
Box building	enclosure assembly, cabling, kitting, ESD packing

Quality and certifications

ISO 9001:2015

Certified quality management system covering the whole process — from RFQ to shipment.

IPC-A-610

Assembly and inspection to IPC-A-610 criteria; class 2 as standard, class 3 on request.

EPA zone

SMT line and assembly stations in an ESD-protected area: dissipative flooring, grounding, equipment audits.

99.4% FPY · 98% OTD

Quality and on-time delivery indicators measured across all production orders.

Twelve machines, one line, one project owner.

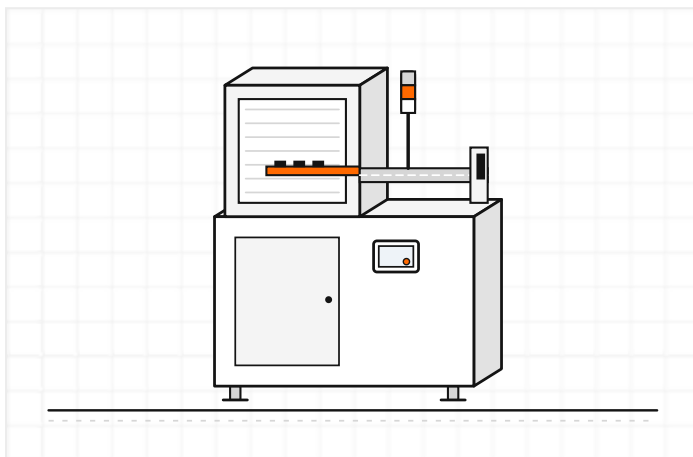
01

BOARD HANDLING · SMT LINE START

Magazine loader SLD-120

MANUFACTURER

SJ Innotech (Korea)



SMT

AUTOMATION

ROLE IN THE PROCESS

Feeds boards from a magazine onto the start of the line automatically — no hands on the board.

The loader opens the SMT line. Boards wait in ESD magazines and the machine slides them one by one onto the printer conveyor at the programmed pitch. The operator supervises the process instead of carrying boards — and nobody leaves fingerprints on the pads before paste printing.

Magazines	standard ESD magazines, 4 pitch settings 10–40 mm
Magazine change	approx. 18 s
Conveyor height	900 ± 30 mm, SMEMA
Control	touch panel, soft start/stop (inverter drive)

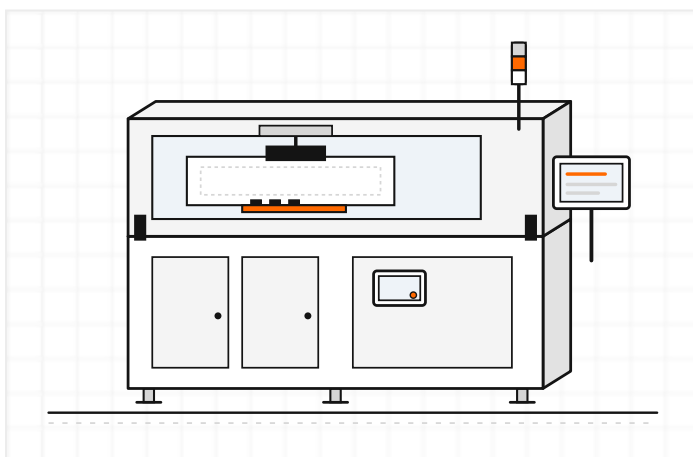
02

SOLDER PASTE PRINTING

Stencil printer HP-620S

MANUFACTURER

SJ Innotech (Korea)



SMT

SPI

FINE-PITCH

ROLE IN THE PROCESS

Prints solder paste through the stencil to ±15 µm and inspects the deposit before the board moves on.

Most soldering defects are born at the paste printing stage, so this is where our quality control starts. The HP-620S aligns the board to the stencil by vision, prints with metal squeegees at programmed pressure and has built-in 2D paste inspection (SPI) that catches insufficient deposits and blocked apertures before Pick & Place.

Board size	50 × 50 mm – 620 × 480 mm, thickness 0.2 – 6.0 mm
Print accuracy	±15 µm, repeatability ±10 µm
Cycle time	approx. 8 s (print), approx. 15 s incl transport
Stencils	frames 736 × 736 mm or 800 × 800 mm
Paste inspection	built-in 2D SPI (top and bottom), RGB vision alignment
Stencil cleaning	automatic: wet / dry / vacuum

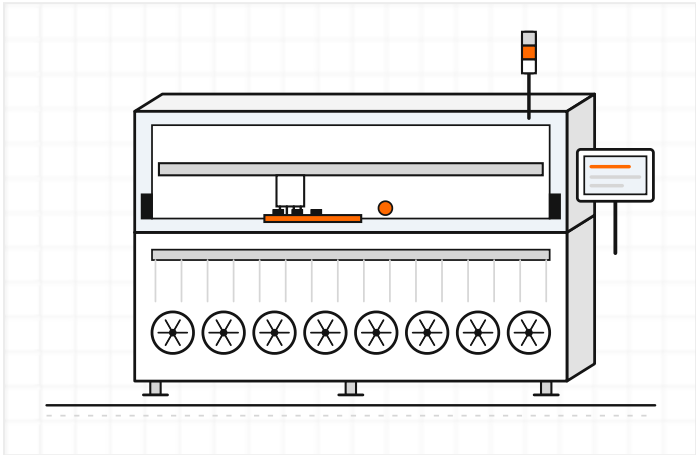
03

SMD PLACEMENT

Pick & Place machine **MX200P**

MANUFACTURER

Mirae (Korea)



SMT

FINE-PITCH

BGA / QFN

ROLE IN THE PROCESS

A flexible placer with a precision head — places everything from 0402 to connectors and large ICs.

The MX200P works in the line as the “do-everything” placer: four modular heads take care of passives, while the precision head with a $\pm 25\ \mu\text{m}$ camera handles fine-pitch ICs, QFN, BGA and odd-shaped parts. Eighty feeder positions mean most projects fit in a single setup.

Throughput	15,000 cph to IPC-9850 (up to 17,000 cph)
Accuracy	$\pm 25\ \mu\text{m}$ (precision head), $\pm 50\ \mu\text{m}$ (modular) @ 3σ
Heads	4 modular + 1 precision
Component range	from 01005 to $90 \times 30\ \text{mm}$, height up to 18 mm
Board size	$50 \times 50\ \text{mm}$ – $410 \times 460\ \text{mm}$
Feeders	$80 \times 8\ \text{mm}$ positions; trays, sticks, vibratory feeders

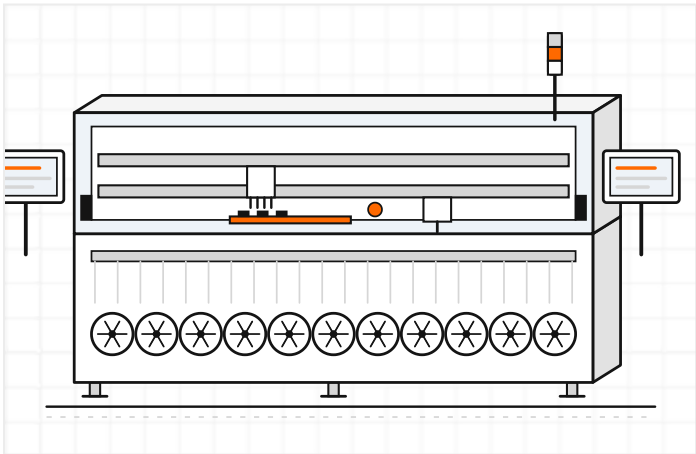
04

SMD PLACEMENT

Pick & Place machine **MX400LP**

MANUFACTURER

Mirae (Korea)



SMT

LONG BOARDS

SERIES

ROLE IN THE PROCESS

A dual-gantry high-throughput placer for long boards — the heart of the line for series.

The MX400LP is the faster, bigger sibling of the MX200P. Two gantries work in parallel: six modular heads place chips at over 30,000 cph, while three precision heads handle ICs and connectors. The LP version accepts boards up to 680 mm long, so long LED panels and industrial boards are assembled without splitting the design.

Throughput	31,000 cph to IPC-9850 (up to 40,000 cph)
Accuracy	$\pm 25\ \mu\text{m}$ (precision heads), $\pm 50\ \mu\text{m}$ (modular)
Heads	6 modular + 3 precision, 2 gantries
Component range	from 01005 to $24 \times 18\ \text{mm}$ (modular), larger on the precision head
Board size	$50 \times 50\ \text{mm}$ – $680 \times 460\ \text{mm}$, board weight up to 2 kg
Feeders	$100 \times 8\ \text{mm}$ positions (50 front / 50 rear)

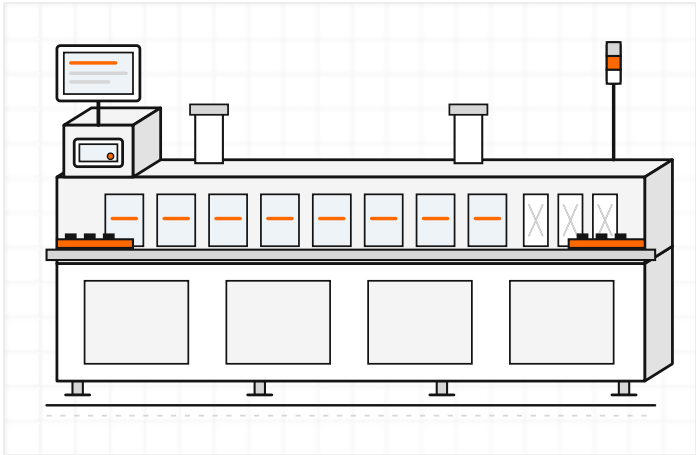
05

REFLOW SOLDERING

Convection reflow oven 803 · 8 zones

MANUFACTURER

ExplorFlow



SMT

LEAD-FREE

ROLE IN THE PROCESS

Eight independent top/bottom heating zones and three cooling zones — a repeatable profile for every paste.

A forced-convection oven with a heating section over 3 m long leaves room for a full lead-free profile: gentle ramp, soak, peak and controlled cooling. Every zone has separate top/bottom PID control, so we set the profile for the specific paste and board mass — not the other way round.

Zones	8 heating (top + bottom) + 3 cooling (top + bottom)
Heating length	approx. 3.1 m
Board width	up to 400 mm (chain + mesh conveyor)
Temperature	up to 300 °C, stability ±1 °C, PID control
Conveyor speed	300 – 2000 mm/min
Profiling	profile per project, profile change < 15 min

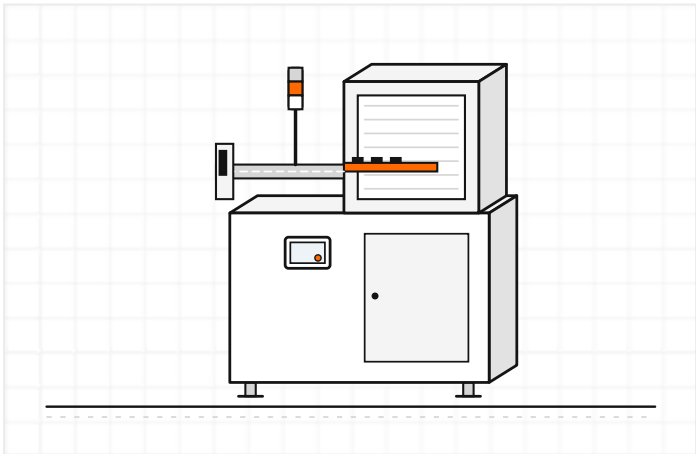
06

BOARD HANDLING · SMT LINE END

Magazine unloader SUD-120

MANUFACTURER

SJ Innotech (Korea)



SMT

AUTOMATION

ROLE IN THE PROCESS

Collects soldered boards from the oven and stacks them back into ESD magazines.

The unloader closes the SMT line: boards still warm from the oven go straight into a magazine with no manual lifting off the conveyor. The output buffer lets the line keep running while the operator swaps a full magazine — and boards travel to AOI in the same order they were soldered.

Magazines	standard ESD magazines, 4 pitch settings 10–40 mm
Magazine change	approx. 18 s, output buffer
Conveyor height	900 ± 30 mm, SMEMA
Control	touch panel, soft start/stop (inverter drive)

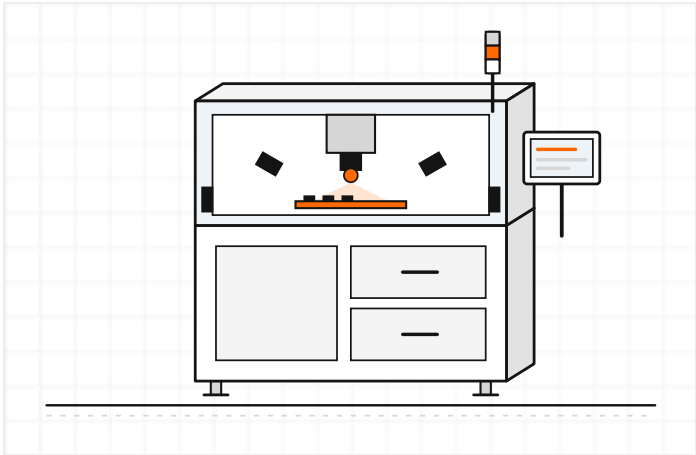
07

AUTOMATED OPTICAL INSPECTION

5-camera AOI MV-3U

MANUFACTURER

Mirtec (Korea)



INSPECTION

100% OF BOARDS

ROLE IN THE PROCESS

Checks every board after reflow: presence, polarity, offsets, bridges and solder-joint quality.

A top camera plus four side cameras look at every component from five directions, so the AOI sees what is invisible from above: lifted leads, solder balls, tombstoning, insufficient joints. Programmable three-layer lighting adapts to the solder-mask colour and pad finish. Inspection results feed back into the process — this is what we tune printing and profiles on.

Inspection area	from 50 × 50 mm to 660 × 510 mm
Cameras	1 top + 4 side, up to 10 Mpx
Resolution	down to approx. 10 µm/pixel
Smallest component	01005, pitch from 0.3 mm
Lighting	programmable LED, 3 layers (horizontal / vertical / coaxial)
Defects detected	missing, offset, polarity, bridges, insufficient solder, tombstoning

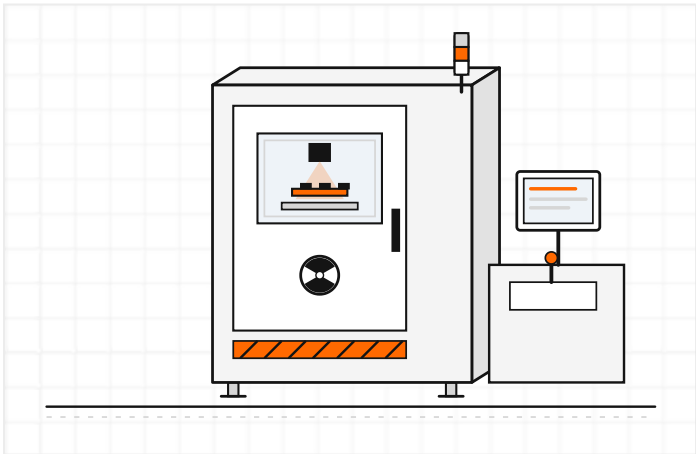
08

X-RAY INSPECTION

X-ray system FSX-MV075

MANUFACTURER

FocalSpot (USA)



INSPECTION

BGA / QFN

ROLE IN THE PROCESS

Looks under BGA and QFN: voids, bridges, barrel fill — without destroying the board.

Where AOI ends, X-ray begins. A 75 kV microfocus tube and over 200× magnification show BGA balls, QFN thermal pads and THT hole fill in a cross-section no camera can see. A manipulator with oblique view up to 70° lets us judge the shape of every joint, not just its shadow.

Tube	microfocus, 75 kV, focal spot < 33 µm
Magnification	geometric > 220×
Oblique view	up to 70° (360° with rotary fixture)
Board size	up to 406 × 457 mm
Manipulator	4-axis, joystick controlled
Applications	BGA / CSP / QFN, voids, bridges, THT fill, failure analysis

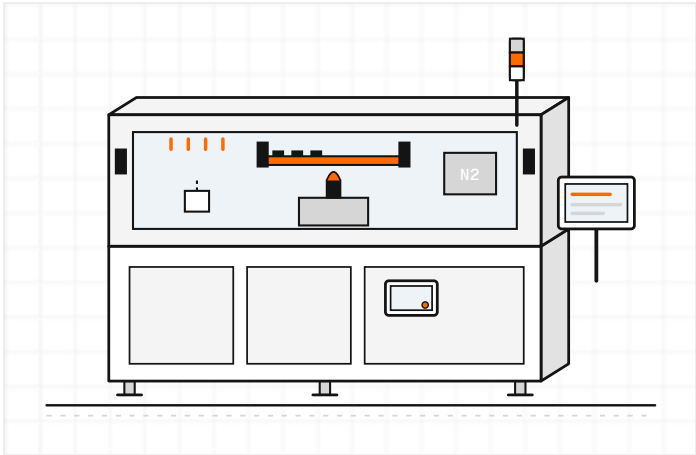
09

THT SOLDERING

Selective soldering **Novo 460**

MANUFACTURER

Nordson SELECT (USA)



THT

N₂

ROLE IN THE PROCESS

Solders through-hole parts point by point under nitrogen — repeatably and without hand soldering.

The Novo 460 replaces wave and hand soldering wherever SMD and THT mix on a board. A drop-jet fluxer applies flux only to the pads to be soldered, IR preheat conditions the board, and a titanium mini-wave nozzle in a nitrogen shroud solders every joint to program. The result: clean joints, no bridges and zero dependence on the operator's day.

Board size	up to 460 × 460 mm, double-sided SMT + THT assemblies
Fluxing	MicroDrop — maintenance-free drop-jet fluxer
Preheat	IR 1.5 – 6 kW + nitrogen preheat
Pot and pump	titanium, quick-change nozzles (magnetic coupling)
Atmosphere	nitrogen from our own generator, solder level and wave height monitoring
Programming	PhotoScan — solder points clicked on an image of the board

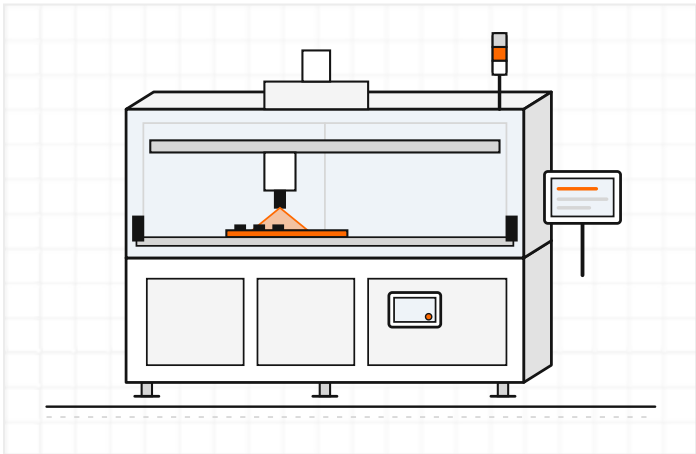
10

CONFORMAL COATING

Coating robot **Delta 6**

MANUFACTURER

PVA (USA)



FINISHING

PROTECTION

ROLE IN THE PROCESS

Applies protective coating selectively — only where needed, with ±25 µm repeatability.

Conformal coating protects the board against humidity, condensation, dust and chemicals, but must not reach connectors, contacts or vented components. The Delta 6 solves this by program: a servo-driven head with a rotate-and-tilt fourth axis applies the coating by spray or film exactly along the programmed path, skipping keep-out zones. ±25 µm repeatability gives the same result on unit one and unit one thousand.

Work area	521 × 485 × 100 mm
Repeatability	±25 µm, resolution 5 µm
Axes	3 axes + 4th axis (valve rotate and tilt)
Valves	spray, film-coat, dispensing — depending on material
Conveyor	in-line conveyor; width 50 – 500 mm
Software	PathMaster — paths programmed on an image of the board

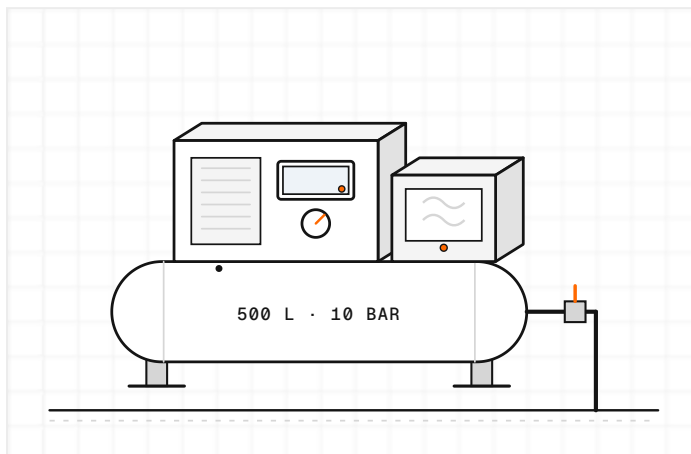
11

UTILITIES · COMPRESSED AIR

Rotary screw compressor E1110 500 10

MANUFACTURER

ABAC Spinn (Italy)



UTILITIES

INFRASTRUCTURE

ROLE IN THE PROCESS

Supplies the whole line with dry, oil-free air at 10 bar — without downtime.

The printer, the Pick & Place machines, selective soldering, the coating cell and the loaders all need stable pressure. An 11 kW screw compressor with a 500 l receiver and integrated dryer gives capacity headroom for the whole floor, while the electronic controller watches pressure, temperature and service intervals.

Power 11 kW (15 hp), 3 × 400 V supply

Free air delivery approx. 1,400 l/min at 10 bar

Pressure 10 bar

Receiver 500 l

Air treatment integrated refrigerant dryer, filtration

Operation 100% duty cycle, electronic controller, quiet approx. 69 dB(A)

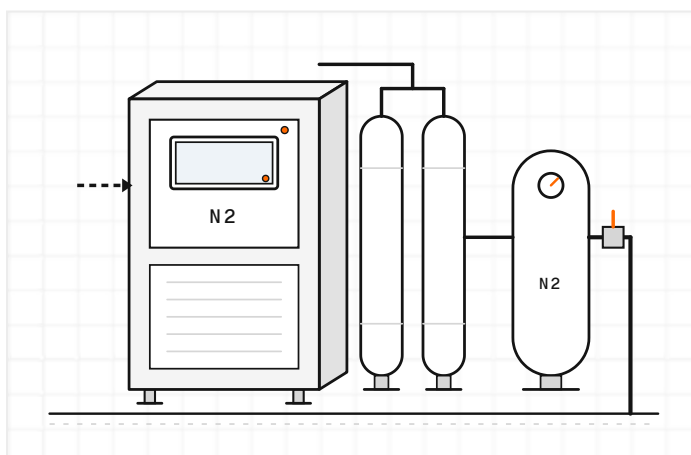
12

UTILITIES · NITROGEN

Nitrogen generator 04-202-024

MANUFACTURER

OKS



UTILITIES

N₂

ROLE IN THE PROCESS

Produces nitrogen on site — a protective atmosphere for selective soldering.

Soldering under nitrogen limits tin oxidation, improves wetting and gives cleaner, shinier joints — especially in lead-free processes. Our own generator makes us independent of cylinder and bundle deliveries: nitrogen is produced from compressed air whenever the line needs it, and a buffer tank smooths peak demand.

Principle nitrogen separation from compressed air

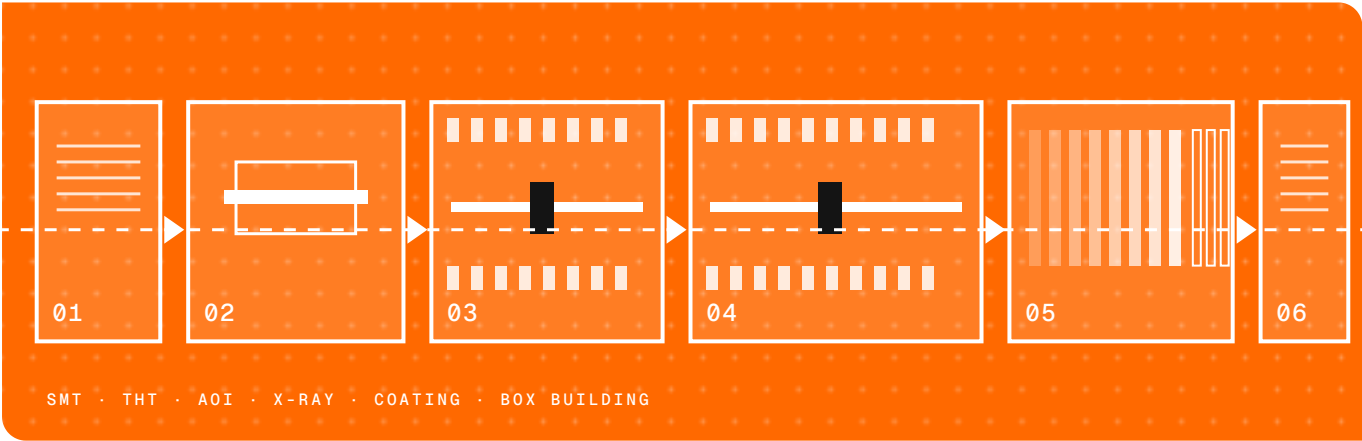
Consumers Nordson Novo 460 selective soldering

Supply compressed air from the plant network (compressor 11)

Buffer nitrogen receiver smoothing peak demand

Machine park summary

NO.	PROCESS	MACHINE	MODEL	MANUFACTURER
01	Board handling · SMT line start	Magazine loader	SLD-120	SJ Innotech (Korea)
02	Solder paste printing	Stencil printer	HP-620S	SJ Innotech (Korea)
03	SMD placement	Pick & Place machine	MX200P	Mirae (Korea)
04	SMD placement	Pick & Place machine	MX400LP	Mirae (Korea)
05	Reflow soldering	Convection reflow oven	803 · 8 zones	ExplorFlow
06	Board handling · SMT line end	Magazine unloader	SUD-120	SJ Innotech (Korea)
07	Automated optical inspection	5-camera AOI	MV-3U	Mirtec (Korea)
08	X-ray inspection	X-ray system	FSX-MV075	FocalSpot (USA)
09	THT soldering	Selective soldering	Novo 460	Nordson SELECT (USA)
10	Conformal coating	Coating robot	Delta 6	PVA (USA)
11	Utilities · compressed air	Rotary screw compressor	E1110 500 10	ABAC Spinn (Italy)
12	Utilities · nitrogen	Nitrogen generator	04-202-024	OKS



Plant infrastructure			
EPA zone dissipative flooring, grounded workstations and equipment, ESD control to IEC 61340-5-1	Compressed air plant network with drying and filtration, connection at every machine	Nitrogen own generator with buffer, piped to selective soldering	Warehouse components in ESD packaging, humidity control for MSD parts

/ MACHINE PARK EXPANSION PLAN

New Hanwha Pick & Place line — Q4 2026.

In the fourth quarter of 2026 two new Hanwha DECAN placers, a laser marking machine and a line-management system join our SMT line. It is the largest investment in Techbit's history — and the first we describe to customers before the machines stand on the floor.

Hanwha DECAN S1

HIGH-SPEED CHIP SHOOTER

One gantry with 10 spindles and a flying camera. 47,000 cph (optimum) and $\pm 28 \mu\text{m}$ accuracy @ Cpk ≥ 1.0 on 03015 parts — a new standard for passives, including 0201.

47,000 cph $\pm 28 \mu\text{m}$ 03015 - $\square 16 \text{ mm}$ (fly), up to $\square 55 \text{ mm}$ (fix)PCB up to $510 \times 510 \text{ mm}$

Hanwha DECAN L1

MULTI-FUNCTIONAL PLACER

A 6-spindle gantry with a fixed camera for ICs, connectors and odd-form parts — up to $\square 55 \text{ mm}$ and 25 mm high. Works with the S1 in one line, sharing the program and feeder base.

parts up to $\square 55 \text{ mm}$ height up to 25 mm

SME feeders shared program base

EF-F-50 laser marker

TRACEABILITY

A 50 W fibre laser with fume extraction — a permanent DMC code on every board before paste printing. Every board gets an identity we track through the whole process.

DMC / 1D / text 50 W fibre laser

fume extraction ahead of the SMT line

Hanwha T-OLP + T-PnP

LINE SOFTWARE

Line management (T-OLP Multi/Pro): production monitoring, feeder verification, reports. T-PnP for offline programming — we prepare the next project while the line is still running the previous one.

on-line monitoring setup verification

offline programming integration with Techbit ERP

SMT line today and after the expansion

SMT LINE TODAY

Loader > Paste printer > Mirae MX200P > Mirae MX400LP > Reflow oven > Unloader

AFTER EXPANSION · Q4 2026

Loader > Laser marker > Paste printer > Hanwha DECAN S1 > Hanwha DECAN L1 > Reflow oven > Unloader

 new machines

Schedule

- 09 / 2026 ● Floor and IT infrastructure preparation, Hanwha ecosystem installation
- 10 / 2026 ● Machine delivery to Poznań
- 10-11 / 2026 ● Installation, calibration, training (20 days), first test orders
- 12 / 2026 ● Series production on the new line; update of this document

What it changes for your project

- Throughput** Several times higher placement capacity — shorter lead times for series and room for new projects.
- Miniaturisation** 0201 and 03015 parts and fine-pitch as a standard process.
- Traceability** A DMC code on every board: full process and component-batch history.
- Time to production** Offline programming and feeder verification shorten NPI and changeovers.

/ Investment carried out under a project co-financed by the European Union. Parameters of the new line will be confirmed in the next edition of the Capabilities Sheet once production starts.

Send your project today. The quote is on your desk in 2 days.

The longer a project waits with a supplier who doesn't answer, the more the silence costs you. Start with a quote and see what working with a manufacturer who picks up the phone looks like.

CONTACT

PHONE

+48 883 950 995

E-MAIL

zaczynajmy@techbit.com.pl

WEB

techbit.com.pl

GET A QUOTE IN 2 DAYS

zaczynajmy@techbit.com.pl

What to prepare for a quote

BOM	bill of materials with manufacturer part numbers
Gerber	PCB production files (or finished boards)
Pick & Place	centroid file from your design
Quantity and date	batch size and expected delivery date

Company details

Techbit sp. z o.o.
ul. Święty Marcin 29/8
61-806 Poznań, Poland
VAT ID PL7831735535 · REGON 363348710