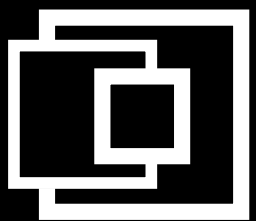
Osai Automation System



AUTOMATION ELECTRONICS LASER SEMICONDUCTOR

video

THE COMPANY

Founded in 1991 by Carlo Ferrero, **OSAI A.S. S.p.A. Società Benefit** operates in the field of the automation for industrial processes.

Today, in addition to the Italian headquarter, **OSAI has 3 branches** located in **Germany**, **China** and the **United States of America**. The branches are assisted by more than **40 commercial partners** for resale and assistance, able to guarantee rapid and efficient global support.

The solutions offered by **OSAI** are based on standard systems or on special machines for assembly and testing of high-tech components for the **semiconductor industry**, the **automotive industry** and **electronics manufacturing**. Each system is created for the specific customer applications and features the latest technologies, such as **Laser technology**.

Currently the Company has **250 employees**, **6.500 mq of production areas** and a high international export level.

The Company operates through 4 business lines:

- **Automation Division**
- **Electronics Division**
- **Laser Technologies Division**
- **Semiconductor Division**

Printed on recycled paper

INDEX

Smart solutions for lean manufacturing

OSAI's defining feature is the constant focus on improvement and innovation: **in-house project** and **design, high-quality** components and **attention to detail**. This is reflected in our systems, which are easy-to-use, reliable and versatile.

OSAI offers turnkey solutions with installation, start-up and training carried out by skilled personnel.

Automated lines

OSAI manufactures full and semi automated lines dedicated to the specific **needs of each customer**, by developing ad-hoc solutions.

These lines can be based on the concept of modularity with stations dedicated to each step of the production process.

To name a few possibilities:

- **Assembly:**
  Screwing, Glueing, Press-fit, Riveting, Crimping
- **Welding:**
  Laser, Hot punch, Induction, Ultrasonic
- **Testing:**
  Electrical, Dimensional, Optical, Air gauge measurement, Leak, Functional
- **Marking:**
  Laser, Ink jet, Label, Microdots
- **Calibration**
- **Automatic management of master cycles**

Rotary tables

Single block basement with welded steel frame and integrated electrical panel.

Operators can **easily** access the stations for maintenance purposes.

Based on a **standard concept**, they can be **customized** according to the specific needs of our Customers and their products.

Benches

The ever growing need for **flexibility** in the production processes requires **semi-automatic work benches** to assemble and test products.

OSAI offers **customized solutions** with a limited investment to automate manual operations.

Modules

Modular assembly line with **linkable modules, master line controller** and **closed MagneMotion conveyor loop.**

Each module can be equipped with **up to 12 stations** or multiple of it.

The module can be adapted according to the product. **Quick changeover** between different production components is possible.

Clear advantages to the concept of **independent modules** are the possibility to follow the technical evolution of the product and flexible re-tooling.

Speed and flexibility for any need

OSAI's portfolio includes various machines with the aim of offering smart solutions to the electronics manufacturing industry.

OSAI's solutions allow to operate on electronic devices: **Laser Marking, Depaneling** - either Mechanical or Laser – and **Assembly Systems**.

The Neo platform offers a wide range of highly competitive products to meet the market's multifaceted demands: focus on accuracy, on speed, on affordability and flexibility.

Laser Marking
GREEN, FIBER & CO_2

NEOMARK twin

NeoMark Twin is a **marking system dedicated to mass production** and to high density multiplates.

The mechanical handling of the PCBs enables high definition markings in a work area up to 480 x 480mm that will guarantee **product immediate identification**, throughput capability check, production quality level check, feedback in production floor for problem solving, capability to trace problematic lots (link between PCB and defective IC), historical data available for a long time.

NeoMark Twin features **different Laser sources**, fiducials recognition, **high accuracy** in marking position (25µm), OCR capabilities, fail PCBs recognition (Red Label), Top/Bottom Marking SW, best result marking assurance.

KEYPOINTS:

Fiducial check
for accurate marking position

100% data and quality level check
on 1D/2D code

Bad label recognition

PCB supplier logo recognition
for on-fly optimal parameter set-up

OCR for PCB version recognition

Optical check
for component presence

PCB polarization check

Automatic parameter adjustment
in production

Automatic width adjustment

Full library
(2D code, Bar code, QR code and others)

Tailored DB communication
for traceability

Remote control

Datalog available
for fast diagnostic

Industry 4.0

NEOMARK easy

Laser Marking
(CO_2 - Green - Fiber Mopa)

NeoMark Easy is the topnotch equipment for those customers who need In Line machines. Its technology allows to have **high quality, fast cycle time** (60% time saving compared with conventional Laser Marking systems), flexibility and affordable price.

Based on technological know-how and years of experience, OSAI presents a breakthrough solution to the market. The internal flip over has been fully developed and integrated in order to save marking time, ensuring the best quality.

NeoMark Easy is equipped with OSAI Laser (**CO_2 - Green - Fiber Mopa**), guaranteeing the well-known reliability already appreciated by the market.

The easy and user-friendly SW, based on Touch Screen HMI, also allows operator, with a low level of experience, to properly develop recipes in less than 10 minutes.

KEYPOINTS:

LASER
CO_2 - Green - Fiber

Fiducial check
for accurate marking position

100% data and grading check
on 1D/2D code

Bad label recognition

PCB supplier logo recognition
for on-fly optimal parameter set-up

Optical check
for component presence/absence

PCB polarization check

Automatic width adjustment

Full library
(2D code, Bar code, QR code and others)

Tailored DB communication
for traceability

Remote control

Datalog available
for fast diagnostic

Industry 4.0

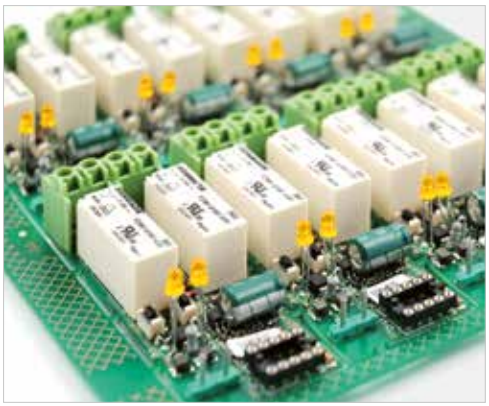
Scalable & modular ODD-shape assembly

NEOPLACE 304 modula

NeoPlace 304 modula is the **optimal solution** wherever the **assembling** of a limited number of different components and a high production performance are needed.

The compact mechanical structure allows to scale the requested configuration to achieve the needed throughput. Each NeoPlace 304 modula is a system fully integrated in order to create a modular, flexible and scalable assembly line.

The **fast and easy set-up**, together with the **wide range of OSAI feeders and grippers**, guarantee the necessary flexibility required by production for sudden configuration changes.



KEYPOINTS:

High throughput
1,5" per component

High flexibility
set up change in 5 minutes

Active or passive clinch

Optical camera
for fiducial check and 2D code check for traceability

Automatic gripper change

Fully modular and scalable
configurable for assembly and dispensing

High reliability
linear motor and optical encoder for intensive use 24/7

Remote control

Datalog available
for fast diagnostic

Industry 4.0

NEOROUTER
modula

Scalable modular production

NeoRouter is the ideal solution for mechanical separation of PCB panels. Due to his high flexibility, NeoRouter is ideal for **high volume mass-production** but also for high mix, thanks to the special clamping head that doesn't require modifications (except the fingers) when the product changes. NeoRouter is **SMEMA** compliant.

Routing bits are automatically replaced, without the operator intervention. The machine assures the control of the presence of the routing bit with automatic change. A cleaning station can be integrated before the automatic sorting, to remove the dust particles on the boards.

It's possible to sort the separated parts on trays, feeders or magazines; it's also possible to connect the NeoRouter to the testing machine (or to the Customer traceability) in order to discriminate the OK and KO parts.

The **programming is easy and fast**, due to the operator interface developed by OSAI for the **Neo Modula platform.**

Those features guarantee a low cost of ownership and very fast set up, basic elements to be competitive in the market.

KEYPOINTS:

High throughput
0,5" per TAB

High Flexibility
Setup change in 1 minute

Fixtureless
Reduced ownership cost

Optical Camera
Fiducial recognition for optical alignment
2D code reading for automatic Pass/Fail sorting

Automatic bit change
Fast and accurate cycle

Flexible routing configuration
Top or Bottom routing head or both
For even faster production cycle

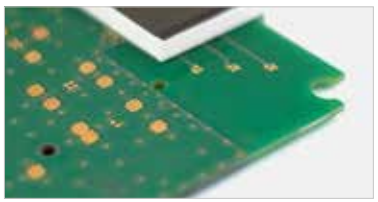
Multiple options for separated PCB's unloading
Blister, single or dual tape conveyor or Jedec tray

High reliability
Liner motor and optical encoder for intensive use 24/7

Remote control
For application and service support

Datalog available
For fast diagnostic

Industry 4.0



Laser Depaneling

NEOCUT easy

NeoCut Easy is a **Laser depaneling equipment**, based on **OSAI Laser Cut Technology**, capable of performing clean and safe cuts without generating neither dust nor mechanical stress on the electronic components.

Laser depaneling is the best way to perform extremely **fast depaneling processes** (up to 70% saving on cutting time compared with traditional methods) and flexible cutting (tabs or Vcut depaneling PCBs up to 3 mm thickness).

KEYPOINTS:

Rigid PCB depaneling
up to 3 mm thick

High cutting accuracy
+/-20 µm

Zero mechanical stress

Optical camera
for 2D code reading and fiducial check

Stand alone or In Line
equipment configuration

Zero dust

Clean cut
without PCB contamination

Sorting capability

Low cost of ownership

Suitable
for mass production

Double speed
compared with conventional routers

Remote control

Datalog available
for fast diagnostic

Industry 4.0

NEOCUT shape

Laser Depaneling (UV, XV, **ULTRAFAST**)

The flexible circuit market is primarily driven by the demand for smaller and lighter products; those **FPCB**s require tighter tolerances and smaller spacing to cut the board after component placement. NeoCut Shape performs **highly accurate cutting operations**, without mechanical stress on components.

As well as supplying an exceptional solution in depaneling Kapton® and flexible PCBs, the NeoCut Shape system is able to cut PCBs and plastic surfaces, with **four different types of Laser,** depending on customer need (UV - XV - **ULTRAFAST**).

KEYPOINTS:

LASER
UV - XV - ULTRAFAST

High quality cut

Cutting area
480x480 mm

Zero mechanical stress

Programmable focus position
+/-5 mm

Programmable spot size

High cutting accuracy
+/-20 µm

Pressurized optical path
to avoid optics contamination

Integrated power meter
for "power on workpiece" measurement

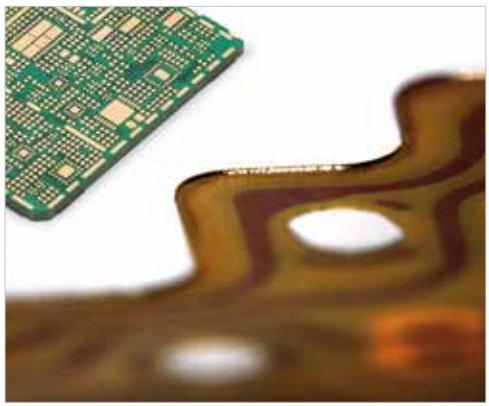
High efficiency fumes and dust extraction

Stand alone or In Line
equipment configuration

Remote control

Datalog available
for fast diagnostic

Industry 4.0



Magazine

NEOTRAY

NeoTray is a **vertical magazine** for automatic loading / unloading of blisters.

It can be applied both in the automation sector, as well as in electronics.

It increases the autonomy of material feeding and it allows an uninterrupted production process thanks to the possibility to open the door to load/unload the trays without stopping the machine.

The NeoTray can be customized based on customer requirements (tray size).

KEYPOINTS:

NeoTray is a vertical magazine suitable to manage blister for loading/unloading purpose

It can be used for both standard equipment and customized lines

NeoTray provides to the equipment high efficiency and autonomy

Blister loading/unloading can be done without stopping the process

Fully configurable for different blister sizes up to 600 x 400 mm

Its reliability guarantees high performances for mass production

Easy HMI based on touch screen

Industry 4.0

FEEDERS

NEOCOIL

NEORADIAL

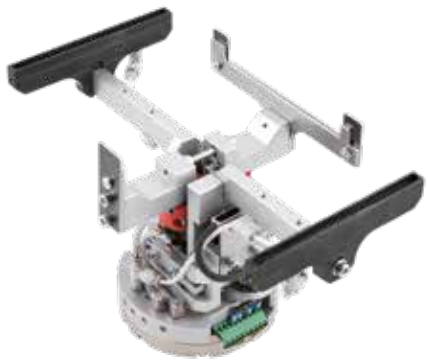
NEOAXIAL

NEOTRAY LINEAR

NEOTAPEDREEL

NEOBULK

NEOSTICK



High quality in a short time

The knowledge of the technology and the processes, developed over the past 20 years, enabled **OSAI** to manufacture over **500 applications** for customers worldwide through a wide range of **standard machines**.

The experience acquired in the **industrial applications**, particularly in **fine cutting**, **welding** and **marking**, allowed us to implement **dedicated solutions for different branches**, such as **jewellery** and **medical**.

Marking system for metallic and plastic components

DM 2c

DM2c is a compact system "all in one", including the Laser source, characterized by a **highly ergonomic structure** thanks to the sitting working position.

The PC is integrated into the machine frame with frontal LCD display, the keyboard and the mouse are positioned into a foldaway drawer, in order to be protected during the working activities in a small space. The start button can be activated by means of the frontal console or by a special control panel.

The **turning table** allows a masked time during which, while the Laser is working, the operator can load/unload the product on the available semi-table. The installation is easy and fast thanks to the retractable wheels which allow the positioning of the system.

KEYPOINTS:

Manual Z Axis

Power meter head
for Laser power checking

Possibility to integrate
various fiber Laser suorces
various welding heads

Turning table system
with two positions or front-end door with single fixture

Possibility to operate various Laser processes
Welding , Cutting, Marking

Flexible custom fixture

fineplast 140R

Laser welding of polymers for mass production

FinePlast 140R is designed to **weld plastic components**: the Laser welding of polymers is carried out by putting a transparent material into contact with an absorbent material; the Laser beam crossing the former and heating the latter to fusion point.

The welding takes place when the heated absorbent material makes contact with the transparent material.

The advantages, compared to traditional systems, are many: perfectly **aesthetic** and **sealed connections**, **no vibrations** on the welded parts, reduced thermal weld material, high process speed and **flexibility** in components design. The PC is integrated into the machine frame with LCD display on an adjustable console, the keyboard and the mouse are positioned under the console.

The start button can be activated by means of the frontal console or by a special control panel. The turning table allows a masked time during which, while the Laser is working, the operator can access the working area to load/unload the product on the available semi-table.
All axis (**X, Y, Z** and the rotating Laser head - **W**) are CNC controlled for movement interpolation.

KEYPOINTS:

CNC Sinumerik Siemens or Beckhoff

Linear Axis X, Y, Z

Rotary Axis W:
Accuracy ±10µm
Repeatability ±2.5µm
Acceleration 1g
Axis Speed 15m/min

4 Axis interpolation
with ISO Code program

Pyrometer
for process control

Power meter head
for Laser power checking

Possibility to integrate
various fiber Laser suorces various welding heads

Rotatory table system
with two positions or front-end door with single fixture

High productivity system for **welding of cylindrical components**

fineweld 100

FineWeld 100 is a system to **weld round/ cylindrical components**.

The display is integrated into the machine frame to set up parameters and working programs with **OSAI** standard console.

Main features: **4 welding positions** (guaranteed by pneumatic slides, manually adjustable) and 1 rotating axis controlled by software for positioning, speed and rotation.

Windows on the sides of the machine give complete accessibility to the working area, for maintenance and setting activities.

KEYPOINTS:

Operating volume coinciding with a cylinder having a height of 50mm and a diameter of 22mm

Controlled rotating axis
with a maximum rotation speed of 40,000 degrees / min

Analogical control of Laser source,
with a power variation from 10% to 100%

Management of attack / closure welding power ramps,
with minimum steps from 5% to 50%, with a time not exceeding 200-250ms

Maximum axial eccentricity on the rotation
+/- 0,025mm, with 0 ° orthogonality

Possibility to integrate different
welding Laser sources welding heads

Management ability on two welding heights and two different focal distances

Front door for piece unloading

Bench dimensions mm 1.200 x 1.000 x 2.200h

fineweld 140R

Laser welding of metallic components for high volumes

FineWeld 140R is a **compact system to weld metallic components**, including the Laser source, characterized by a high ergonomic structure thanks to the sitting or **standing working position**.

The PC is integrated into the machine frame with LCD display on an adjustable console, under which the keyboard and the mouse are positioned.

The start button can be activated by means of the frontal console or by a special control panel. The turning table is optimizing the cycle time.

The positioning and rotation of all axis (**X, Y, Z** and two rotating axis on each semi-table A1 and A2) are CNC controlled.

KEYPOINTS:

CNC Sinumerik Siemens or Beckhoff

Linear Axis X, Y, Z

Rotary Axis W:
Accuracy ±10µm
Repeatability ±2.5µm
Acceleration 1g
Axis Speed 15m/min

4 Axis interpolation
with ISO Code program

Pyrometer
for process control

Power meter head
for Laser power checking

Possibility to integrate
various fiber Laser suorces
various welding heads

Turning table system
with two position or front-end door with single fixture

Laboratory equipment for **metal welding** and **Laser cutting**

fineweld 300
finecut 300

Fineweld/Finecut 300 is a system to **Laser weld/cut metallic components**. The PC, as well as the keyboard and mouse, are integrated into the machine frame with LCD.

Access to the working zone is through the sliding door which is self-compensating in weight and open on two sides. Developed on a **system of cartesian axes,** it is controlled by an industrial CNC.

Ideal for prototyping and suitable for the mass production of small and medium components, this machine can be equipped with a series of specific accessories for Laser welding: rotating axes, manual or automatic tailstocks and loading cells.

KEYPOINTS:

CNC Sinumerik Siemens or Beckhoff

Linear Axis X, Y, Z

Rotary Axis W:
Accuracy ±20µm
Repeatability ±5µm
Acceleration 0,5g
Speed 15m/min

4 Axis Interpolation
with ISO code program

Base Table with T-slots + 2 pneumatic valves
for fixture or custom tool integration

Possibility to integrate cutting-box for Flat metal plate

Possibility to integrate different
Laser cutting sources
cutting/welding heads Laser

Possibility of automatic front door opening

finecut 130HP

Laboratory equipment for **high precision Laser cutting**

Finecut 130HP is a compact **system "all in one"** to **cut metallic components**, including the Laser source. It is often combined with a working table with remote PC controller to choose/write cutting programs.

The start button can be activated by means of the frontal console or by a special control panel. Cartesian axis (X, Y, Z) and the rotating laser head (axis W) are CNC controlled for movement interpolation. Optional axis (A) can be added to cut tubes.

KEYPOINTS:

CNC Sinumerik Siemens or Beckhoff

Linear Axis X, Y, Z

Rotary Axis W:
Accuracy ±10µm
Repeatability ±2.5µm
Acceleration 1g
Axis Speed 60m/min

4 axis interpolation
with ISO Code program

Possibility to integrate
different Laser cutting sources
cutting heads, also with autofocus

Workbench with Cutting box
for flat cut and tube cut holder

Possibility to manage process gas with proportional valve

System available for class 4 laboratories or class 1 work center

High accuracy system for **Laser tube cutting and flat cutting**, suitable for medical application

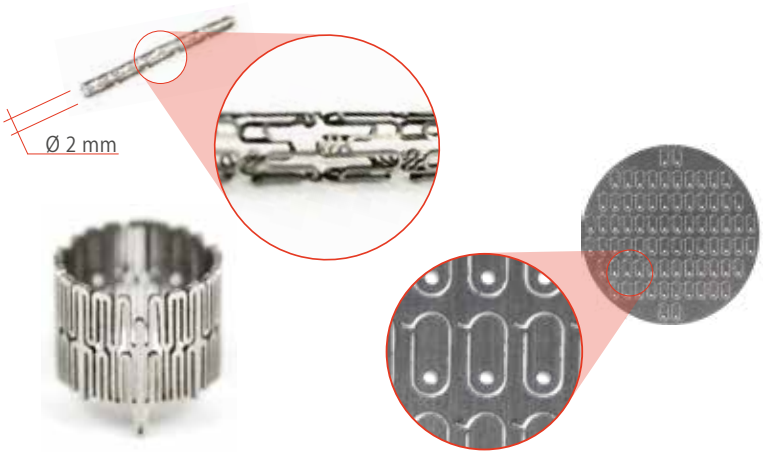
finecut 240HP

The Finecut 240 HP is engineered to produce very precise **round and flat parts** such as stents, cardiac valves, medical tools etc.

The **granite base** is integrated inside a welded steel frame, in order to guarantee the highest precision at high speed. Main features: up to 4 CNC axis, double frontal door for an easy access to the working area, a big frontal window (Laser certified).

The state-of-the-art Laser sources on the market can be integrated on this machine, so that the Customer can produce with a consolidated process or to develop new ones.

The machine is integrated with two **cutting boxes**, dedicated to tube cutting and flat cutting.



KEYPOINTS:

CNC Aerotech AS 3200 or similar Axis control

Linear Axis X, Y, Z

Rotary Axis W (for tube cutting):
Accuracy ±10µm
Repeatability ±2.5µm
Acceleration 1g
Speed 20m/min

4 Axis Interpolation
with ISO code program

Possibility to integrate
different Laser cutting sources
cutting heads, with autofocus

Possibility to manage process gas with proportional valve

For medical use, possibility of "tube eccentricity compensation" system integration

MEMS and POWER Testing and Automation

In 2011 OSAI A.S. decided to use its experience to enter a new up-and-coming market: the **semiconductor market**.
OSAI can be considered as a provider of mass production systems, whose essential parameters are speed, precision and reliability.

OSAI systems are appicable in the branches of testing, assembly and automation. Our solutions are appreciated and implemented all over the world, especially in **USA**, **Asia** and **South East Asia**.

Mass Production
Test Handler for MEMS

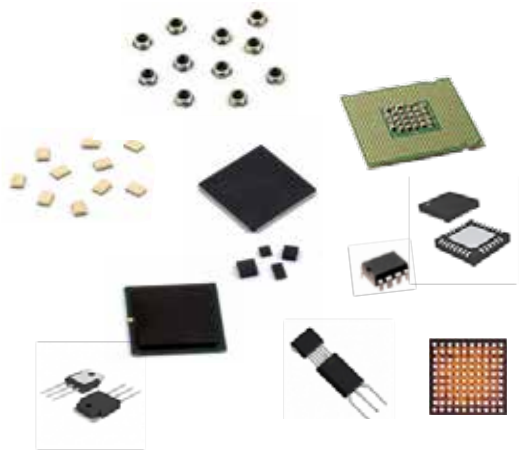
NEOHANDLER
modula

OSAI NeoHandler is the top-notch solution for **Semiconductor** companies, for testing **MEMS** and **Power devices** in mass production (up to 25KUPH).

NeoHandler has a **small footprint: 900 x 1.600mm** saves production area, increasing drastically the throughput (UPH / m^2), by using scalability concept. High flexibility allows the customer to **change setup in 15 minutes**, maximizing the investment: the input / output trolley can be replaced with different magazine types and Multipick up tools can be easily and simply scaled as needed.

The wide range of Multisocket and multipick up tools developed by OSAI allows the customers to manage different packages.

NeoHandler can be properly configured with different Stimulus Chambers, according to **specific MEMS** to be conditioned.



KEYPOINTS:

High flexibility
for different MEMS stimulus

Maximizing throughput
for different MEMS response time

Scalable Multisite
available x1, x4, x8, x16, x35, x70, x140

Fully sensorized
heads for high sensitivity pick/place

Optical camera
for position check and 2D code reading

Input/Output
Trolley for fast input/output setup change

Industry 4.0

REAR SIDE TRAYS INPUT OUTPUT TROLLEY

JEDEC TRAY

TAPE & REEL

BOWL

TUBE

FILM FRAME

OSAI **NeoHandler** is equipped with an **input output trolley**.

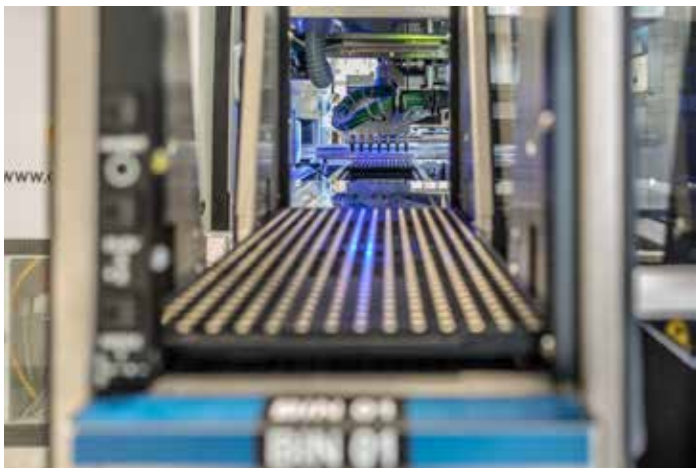
Trolley options are conceived to be modified whenever an Handler re-configuration is needed, **reducing the setup time.**

A **fast changing system** with a mechanical self alignment system guarantees the input output repeatability.

Trolley can be configured with different kinds of input output feeding solutions.

INPUT:
Jedec Tray Feeder
Tube
Bowl
Film frame

OUTPUT:
Jedec Tray
Tube
T&R
Bowl



EACH HEAD IS EQUIPPED WITH A SPECIFIC PICK-UP TOOL

Fast changing
(less than 1 minute)

Standard OSAI interface
(includes all the electrical and pneumatic connections)

1, 4, 8, 16, 35 sites
other multisites available on the roadmap

Independent 10mm Z stroke
on each single picker

Independent vacuum command and control
on each single picker

Fine adjustable detaching air blow

Single site collision sensor

On picker precisor
for device pre-alignment

Internal code
for setup-recipe verification

NEO T-LAB Lab Equipment for environmental MEMS

Neo T-LAB is OSAI's ultimate desk size lab test solution.

With its compact size Neo T-LAB is the **smallest conditioning chambers** in the world allowing the R&D fine tuning directly in laboratory.

In addition to the smallest footprint, the **Neo T-LAB advanced** offers the possibility to be configured with several test **stimuli**, such as **temperature**, **pressure**, **humidity** and **gas.**

Neo T-LAB is also a **tailor made solution**: the possibility to design the test chamber based on customer needs, allows the transition **from laboratory to mass production in just few steps**.

KEYPOINTS:

Compact
Desk size test lab solution

Multi stimuli
Possibility to equipe the chamber with different stimuli

Accuracy
Highly accurate stimuli to test devices

No Limits
Unlimited temperature & pressure set points

Mass Production
Neo T-LAB is scalable to mass production in few steps

Tailor Made
Possibility to customize socket

MAIN CHARACTERISTICS:

Temperature range: -20° up to 80°C or -40° up to 125°C
Temperature accuracy: ± 0,5°C
Temperature stability: ± 0,3°C
Average settling time: 10s
Pressure range: 0 up to 6 bar
Pressure settling time: 3s
Pressure stability: according to external regulator
MEMS communication protocol: SPI, I2C, GPIO
PC Interface: USB

Lab Equipment for environmental MEMS

NEO T-LAB advanced

Neo T-LAB advanced is OSAI's ultimate lab test solution.

The **Neo T-LAB advanced** includes the possibility to be configured with several **test stimuli**, such as **temperature**, **pressure**, **humidity** and **gas.**

A wide range of device's geometries are supported by a proven scalable test socket, optimizing the required test parallelism.

Neo T-LAB advanced offers the possibility to re-use the test hardware (conversion kit), directly on the production test handler.

KEYPOINTS:

Multi stimuli
Possibility to configure the chamber with different stimuli

Accuracy
Highly accurate stimuli to test/characterize MEMS devices

No Limits
Unlimited temperature & pressure set points

Mass Production
Neo T-LAB advanced is scalable to mass production in few steps

Tailor Made
Possibility to customize test socket up to //140

MAIN CHARACTERISTICS:

Temperature range: -20° up to 80°C or -40° up to 125°C

Temperature accuracy: ± 0,5°C

Temperature stability: ± 0,3°C

Average settling time: 10s

Pressure range: 0 up to 6 bar

Pressure settling time: 3s

Pressure stability: according to external regulator

MEMS communication protocol: SPI, I2C, GPIO

Maximum test socket parallelism: up to //140 (@DUTs dimensions up to 5x5 mm)

PC Interface: embedded PC

NEO T-LAB acoustic

Lab Equipment for MEMS Microphones

Neo T-LAB acoustic is the OSAI's ultimate lab test solution for **MEMS microphones.**

With its compact size Neo T-LAB is the **smallest acoustic test chamber** in the world allowing the R&D fine tuning directly in laboratory.

A wide range of device's geometries are supported by a proven scalable test socket, optimizing the required test parallelism.

Neo T-LAB acoustic offers the possibility to re-use the test hardware (conversion kit and acoustic stimuli), directly on the production test handler.

KEYPOINTS:

Compact
Desk size test lab solution

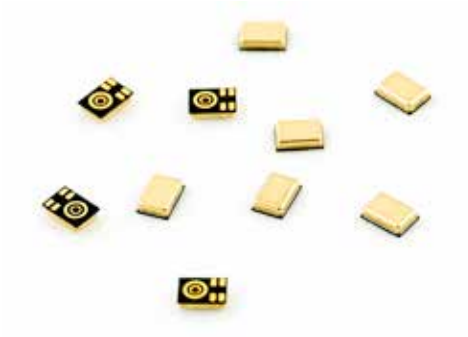
Hi-end acoustic box structure
Audio and vibration dampening system structure

Accuracy
Acoustic box completely floating during the acoustic tests

Site individual acoustic stimuli
Indipendent acoustic stimuli and test socket structure

Mass Production
Scalable to mass production in few steps

Tailor Made
Possibility to customize socket and test parallelism



MAIN CHARACTERISTICS:

Material: Premium quality coated beech plywood structure

Tester connection: Co-molded silicone structure passes through cables

Vibration dampening structure: Planarity and floating adjustment on 4 corners

Flexible and Scalable
Test Handler for power modules

POWER MODULES

OSAI **PMTH (Power module test handler)** is a top class equipment conceived to **test Power Modules**.

A very **high productivity**, combined with an **extreme reliability**, makes the PMTH the perfect standard solution for the mass production.

The OSAI **PMTH is configurable for different packages, PIM, Econopack, HPD and many others**.

The **conversion time is very low**, and the standard approach makes it **configurable and upgradable in the field to many different test features.**

MAIN CHARACTERISTICS:

OSAI Power module test cell series
provides a breakthrough scalable and configurable solution for Power Module testing

Hot temperature test
Ambient temperature test
AC/DC Test capability
ISO Test capability
Tray and Blister input/output media
Reject bin feed on tubes or tape
Configurable sorting
Leads check
Laser marking
Optical inspection
Weight check
Flip station

NEOHANDLER modula

Mass Production Testing

The **NeoHandler for discrete components** is the best solution for the test of **IGBTs**, **Mosfet** and other **Power Devices**.

The most common packages are used and compatible with the NeoHandler, like **TO247**, **TO220**, **D2Pack**.

The **perfect integration with specific hi-power ATE** makes the NeoHandler the perfect solution to reduce the strain inductance and to make the most of the ATE performances.

KEYPOINTS:

Dynamic test
Static Test
Partial discharge test
Stress test
Dual or quad site
Input/output in tube, T&R, Tray
STDF and Secs-GEM ready

MAIN CHARACTERISTICS:

Pass devices output Tube
(N° 20 Tubes autonomy)

N° 5 programmable bins
for NOK devices in box

Loading Fresh devices fed in Tube
(N° 20 tubes autonomy)

Multi Pick-Up
with scalable multisites according to the test time

Tester and socketboard integration

Known Good Dies
Test handler

NEOKGD

Capable of handling and testing bare dies with a throughput of up to 1,800 UPH (units per hour) including the **Hi-speed** optical inspection systems (5s or 6s).

The bare dies are automatically handled to and from the diced wafer, contacted, and final tested at both **hot and ambient temperatures** (programmable range).

NeoKGD is a **standard platform** designed to accommodate the customer's needs through a wide matrix of available options. These options include test requirements, probing technology, and the selection of output and reject segregation media.

Multiple configurations, combined with a **compact footprint** and high throughput, make NeoKGD an effective test handler for reducing production costs of KGD devices and a reliable solution for the most challenging manufacturing needs.

KEYPOINTS:

Input media: 6", 8" or 12" wafer frame

Output media:
Re-constructed wafer frame
2", 4" Waffle and Gel Pack
Tape & Reel
Jedec or Custom Tray form

Reject media:
BinBoxes
2", 4" Waffle and Gel Pack

Supported Tests: AC, DC, Hi-Pot Test

Temperature Control:
From Ambient up to Hot Temp (175°C)
Closed-loop Temperature Control
Accuracy ±2°C (up to 175°C)

Optical Inspection: 5s, 6s, Hi-Speed Capabilities

Probecard Features:
Automatic Alignment (Probe Needles and Die)
Automatic Cleaning
Embedded Locking System with ATE direct docking capability

Factory Integration:
SECS/GEM Interface
WaferMapManagement (accordingto the SEMI standards)
Lights-off concept ready (Robotization, AGVs)

POWER DEVICES PACKAGING

Easy Mass Production

Being an automation company, OSAI can offer many solutions for the automatic assembly of power modules.

From the bare mastercard to the final test, the **OSAI experience in semiconductor application automation** can make mass production easy, reliable and 100% human error free.

KEYPOINTS:

Standard/customized automation solution
Power modules packages compliant
High productivity for mass production
Complete monolithic production lines
Built-in Predictive maintenance
AGV ready
Secs-GEM ready

MAIN CHARACTERISTICS:

Laser scribing
for ceramic substrate

Laser marking
for ceramic substrate

Breaking machines
for ceramic substrate

Induction pin soldering (patented) or automatic pin insertion

Plastic case assembly, glueing, screwing and UV curing

Sil gel vaccum potting

Burn-In
Loader/Unloader/Sorter

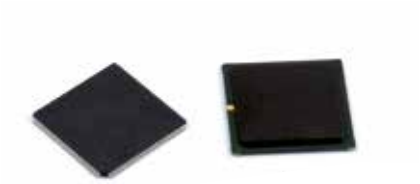
NEOBLU20

NeoBLU: Innovation and Reliability for Mass Production.

Discover NeoBLU, the next-generation **Burn-In Loader/Unloader/Sorter**, designed to deliver extreme mass production at high speeds with complete reliability.

With robust mechanics, exceptional movement precision, and superior performance in speed and acceleration, NeoBLU can handle **up to 20.000 units** per hour (UPH).

Choose NeoBLU for reliable, fast, and fully automated mass production. Maximize the potential of your production line with this innovative and cutting-edge solution.



MAIN CHARACTERISTICS:

20.000 UPH

10.000 UPH
in exchange mode

Zero setup time

Designed for full automation
lights off factory ready

Full traceability
@ device level

Automatic optical alignment

Interface with MES
native SECS-Gem interfaced SW

Possibility to load/unload boards
from trolleys

Full Antimixing features
by optical controls

ATPS

Auto Trolley Pre-Test Station

ATPS is the **OSAI In Line Concept solution** and consists of **Three modules** connected together:

BLU Loader Unloader,
that moves the BIB from BLU to Pretester and vice versa

Pretest + buffer,
that performs visual inspection, pretest, and DUT/Socket replacement

Trolley Loader Unloader,
that moves the BIB from Pretester to Trolley and vice versa

It is equipped with **two BIB transport levels**: **one in the upper area of the system (Working Area) and one in the lower area;**

In detail **BLU Loader/Unloader** has the function to **manage BIBs transition to/for BLU**; **Pretester** is based on the **OSAI NeoHandler modula** standard system and **Trolley Loader Unloader** is the handling module that **moves BIBs from Pretester to Trolley and vice versa** and it also works as a **dynamic Docking Station for Trolleys.**

MAIN CHARACTERISTICS:

Integrated buffer
to not impact the BLU throughput

Automatic Optical Alignments

Able to work with BLUs running
@ 10.000 UPH

Interface with MES
native SECS-Gem interfaced SW

Full traceability
@ device level

Designed for full automation
lights off factory ready

Full Antimixing features by
optical controls

AFTER SALES DIVISION

OSAI provides customers with a superior distinctive **After Sales Service**.

The After Sales division grants a **valuable support** to partners and customers **around the world**, quickly and in an effective way, ensuring the **full customer satisfaction** by breaking down silos between teams, sharing information and working in a collaborative way.

TICKET PLATFORM

OSAI assistance service has been updated: the service platform, guarantees a **fast and efficient answer** to customer requests.

The online service platform has been proposed as a unique and priority channel for all needs related to OSAI products after sales services.

Thanks to a **simple and intuitive interface**, the user can access their private area.

Inside this area it will be possible to request support, supervising the status of requests and draw on content or personalized communications made available by service staff.

To access the online service, sign up in the Service section of the Company's website and follow the instructions to open a ticket. By entering the minimum information necessary for an in-depth analysis of the problem and its management, our help desk will be able to find the better solution to customer problem, as soon as possible.

5 beneficial effects arising from the Ticket Service

- Unified system for assistance management, spare parts and quotes
- Faster answers
- A better problem identification
- Focus on solutions
- Friendly interface

OSAI SERVICE

- Systems installations
- On-demand Service interventions
- On-demand remote support
- On-demand systems refurbishment & upgrade
- On demand Preventive Maintenance

SPARE PARTS SERVICE

- After Sales' dedicated stores at Hq and local offices
- Spare parts & consumables on-demand
- Spare parts kits consignment service

OSAI ACADEMY

- Qualified trainers
- Different levels: base or advanced
- Tailored trainings based on customer requests and needs
- Training classes at customer site
- Training classes at OSAI site

MAINTENANCE CONTRACT

- Response time guarantee
- Preventive Maintenance included
- Scalable solution for Service interventions
- Scalable solution for Remote support
- Special discount on spare parts

CONNECTIVITY

industry 4.0

It is the technological response to the complex scenario facing the manufacturing sector today.

Starting from automation division, OSAI mission is to create a **smart factory inside** our company **and outside,** for our customers.

IPC - HERMES: M2M communication

The Hermes Standard, published as well under **IPC-HERMES-9852**, is a non-proprietary open protocol, based on **TCP/IP- and XML**.

The Hermes Standard has been initiated, developed and established and is further maintained by a group of leading equipment suppliers, bundling their

expertise in order to achieve a great step towards advanced process integration.

It has been recognized by **IPC** to be the next generation solution for **IPC-SMEMA-9851**, usually referred to as "the SMEMA standard".

The aim of this project is to develop a common **SMT communication** standard and offer our customers uniform and efficient Industy-4.0-solutions.

SYBILL

OSAI's software main features are:

Interoperability: Objects, machines and people need to be able to communicate through the Internet of Things (IoT) and the Internet of People.

Decentralization: SYBILL can work independently to create a more flexible environment for production, while guaranteeing quality.

Real-Time capability: possibility to collect real time data, store and analyse it and make decisions according to new findings, not only for product research but for internal processes as well.

Service-Orientation: ability to connect efficiently through the Internet of Services to create products based on the customer's specifications.

Modularity: ability to adapt in a dynamic market.

MEETING CUSTOMER NEEDS IS OSAI'S GOAL, FOR EACH AND EVERY ONE OF OUR PRODUCTS

OSAI Inspection System is a customized hardware and software for high definition image processing.

Software benefits and innovations:

Scalability
- SW upgrade without camera (HW) replacement (green solution)

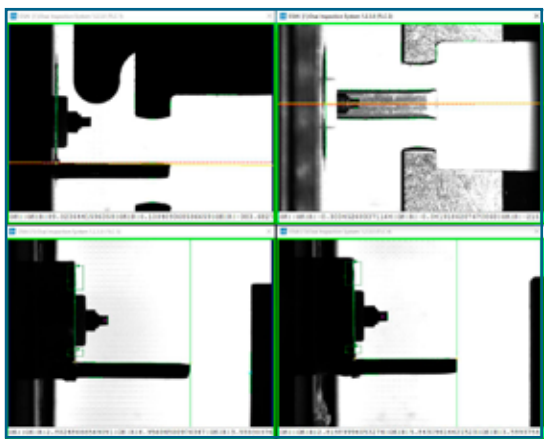
Cost optimization
- Possibility to choose camera type (one or more)
- High quality performance guaranteed by focused customization

Easy programming and tailor made vision jobs
- From spreadsheet to block programming
- Optimized development platform

Provided by OSAI A.S.
- Guaranteed and fast answer, high know-how level, direct service and maintenance intervention

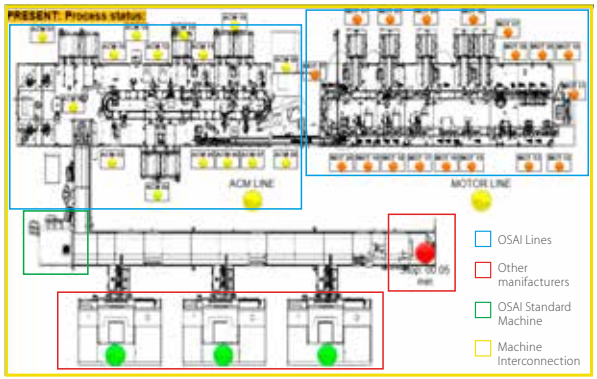
Before

After



Multiple inspection

OSAI **SUPERVISION & TRACEABILITY**



Supervision System

The **supervision system** is internally developed by OSAI A.S.

It controls the integrated production process, with interconnection between **OSAI** machines and those of other suppliers.

From a **single station** it is possible to manage the production lot and monitor the **OEE** (Overall Equipment Effectiveness) of the machinery.

It is possible to predict future productivity (shift/day/month) thanks to a statistical analysis software, based on the efficiency of the machine and on the reasons for rejection.

It can automatically manage the in-line entry of master pieces and verify the capabilities (Cp / Cpk) of in-line instruments.

Traceability System

All process data are collected and associated with the **unique part number** of the individual product component. Thus monitoring or tracing the information requested.

It provides a **web report** with IP address, protected by a password and accessible from PC and smartphone.

The hardware architecture is flexible and adaptable to the interface and protocols of each **Customer MES** (Manufacturing Execution System).

It can integrate a statistical analysis protocol for waste.

Traceability can be investigated to provide a text or graphic report for the individual p / n, by lot, by date, by station, by value.

Values can be exported in different formats: **xml, csv, pdf, doc, etc**; value's graphic formatting can be customized according to the Customer specifications.

NOTE

NOTE


LRU-16820
LRU-16810

OSAI A.S. S.p.A. Società Benefit
Via Cartiera, 4 - 10010 Parella (TO) - ITALY
Tel: +39 0125 66.83.11

sales@osai-as.com - www.osai-as.com