ENABLING ADVANCED TECHNOLOGIES
Oerlikon Systems offers cost-efficient and flexible thin film deposition systems and processes to the semiconductor and advanced nanotechnology markets.

With a leading market share worldwide, the company has earned an international reputation for innovation and engineering excellence.

Oerlikon Systems focuses on production systems for semiconductor and advanced nanotechnology applications. Its core competence in thin-film coating technology provides solutions in the area of semiconductors for advanced packaging, power devices, read/write heads for hard disks, LEDs and Micro-Electro-Mechanical Systems (MEMS). These solutions enable the production of chips, devices and components used in consumer electronics and various industrial sectors, including the information technology, telecommunications and automotive industries.

Applications for the advanced nanotechnology market include touch panels, photovoltaics, thermoelectric generators and energy storage, saving, conversion and transmission.

Headquartered in Liechtenstein, Oerlikon Systems employs 200 people around the world, with a global infrastructure of 18 sales, service and spare part centers.
Oerlikon provides processes spanning a wide range of materials and applications.

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**BACKSIDE METALLIZATIONS & THIN WAFER PROCESSING**
- Water handling design assures defect-free front side
- Thin wafer processing (down to 70 µm) for high volume production. Featuring high throughput, outstanding handling capabilities and active stress control, e.g. Al-Ti-Ni-V-Ag, Ti-Ni-V-Ag/Au, AuAs-Ag-NiV-Ag/Al
- Throughput up to 45 wafers/hour

**LED**
- Lattice matching AlN layer (NanoSmooth™) between wafer and GaN
- Metallization of contact layers & barriers e.g. TiW-Au, AuGe, Ti/TiW-Ni-Ni, Ti-W-Au, stress optimized Cr-Ni-Au, Pt, AuSn

**Touch Sensors**
- Color adjusted AR and AS coatings
- Multi-layer metallization
- High transmission, low resistance TCOs

**IC INTERCONNECTS**
- Multi-level metallizations including barrier layers, liners, plugs, planarization and ARC, e.g. TiN, TiAl alloy, Ti
- Throughput up to 50 wafers/hour (Alight-depas-etch 30-nm Ti: 500-nm Al: 150-nm ARC TiN: cool)

**THIN FILM HEADS**
- Dielectric layers, Al2O3, SiC, c-c
- Conductive seed layers, Cr, Cu, Ta, TaN, W, Ru
- NiFe, CoFe with magnetic alignment

**WIRELESS**
- Active compound Semi devices
  - Low temperature backside via metallization of contact layers & barriers e.g. TiW-Au, AuGe, Ti/TiW-Ni-V-Ag, Ti-W-Au, stress optimized Cr-Ni-Au, Pt, AuSn

**WAIVER LEVEL PACKAGING**
- UBM/RDL for WLDP production solutions from the market leader, e.g. Ti-Cu, TiW-Cu, TiW-Au, TiN-Au, Cr-Cr:Cu, Cu providing Cr:Cu phasing capabilities
- Throughput up to 60 wafers/hour
- Integrated Passives
- Organic/mold substrates
- Thin wafer processing

**MICRO-ELECTRO-MECHANICAL-SYSTEMS**
- Process flexibility support selected niche applications such as dielectric layers, sensors, biomedical applications, e.g. Ni, Pt, NiFe, NiCr, TaN, TiOxNy and dielectrics SiC, SiO2, Al2O3, TiO2, TiC, Ta2O5, Si3N4, PZT

**MICRO-OPTO-ELECTRO-MECHANICAL-SYSTEMS**
- Optical Integrated Circuits
- AR-coatings, waveguides, transparent conducting films, e.g. SiO2, SnS, ITO
Business Line Semiconductors offers innovative production solutions for thin film deposition. Our technologies allow for the production of leading edge computer chips and other devices and components used in the automotive industry, PCs, game consoles, mobile communication devices, printers, solid state lighting and energy management and conversion applications.
CLUSTERLINE® 200 II

The CLUSTERLINE® 200 II provides state-of-the-art process capabilities as well as extensive pre- and post-treatment steps. The open system architecture allows easy tool configuration for PVD, highly ionized PVD, Soft Etch and PECVD for wafer sizes up to 200mm.

SYSTEM FEATURES
- Reliable, industry proven production system with up to 6 process modules and up to 6 auxiliary modules for pre- and post-treatment steps
- Auxiliary module functions including water alignment, buffer, degas, cooling, and ID reader

PLATFORM
- Advanced vacuum handling platform for highest wafer yield and easy operation
- Most accurate wafer placement and automatic wafer alignment correction under vacuum
- Two loadlock cassette stations with auto-home, featuring ergonomic loading, soft pump and soft vent, mapping functions to detect cross-slotted, double-loaded wafers, instant water slide out (protrusion) detection
- Magnetically driven robot system with dual bisymmetric arms
- Production-proven thin wafer handling and processing capability for wafer thickness down to 70 µm and water box up to 6mm, carrier solution for thinner wafers
- Modular chuck design for fast size and configuration conversion (4", 5", 6" and 8")

CONTROL SYSTEM
- Advanced cluster tool control system with ControlWorks® software
- High speed Ethernet backbone with standardized, distributed I/O system
- User friendly GUI with standard PC running Windows 7™ and ‘RAID1’ mirroring
- Real time process flow, sequence and step editors, choice of sequential or parallel wafer routing as well as carrier scheduling functions
- Closed ballot compatible racks
- Fab integration with SEM SECS/GEM interface
- Real time parameter control and display
- Data logging for process review (tabular and graphic)
- Secure operation with multiple user group designations
- Warning and alarm reporting

PROCESS MODULES / COMPONENTS
- Production-proven planar magnetron sputter sources with high target utilization (rotating magnetic system) or Flexicath™ for extremely high film uniformity and homogeneity requirements with flexible configurations for all state of the art applications
- Highly ionized PVD source technology for high aspect ratio TSV applications - mainly for 3D packaging
- The Plasma Box® design of the PECVD process module features a separate reactor within the process chamber providing outstanding uniformity and avoiding contamination by differential pumping and in-situ cleaning. The concept allows a very high film purity and excellent control of interfaces and doping
- ICP soft etch process module with MF Plasma enhanced RF Etch enabling high etch rate and excellent uniformity at low bias voltages. Reactive processing with H₂, N₂ and O₂ is available
- Cooled Metal Cage (Ice Dome) and arctic chuck cooling down to -30°C, enabling highest kit life in the etch module for organic wafers like PI or PBO
- Degas module for fast wafer conditioning and repeatable process results
- Electrostatic (ESC), clampless or clamped chucks using gas conduction for active wafer cooling or heating in PVD and soft etch modules
- Chuck RF Bias
- RF and DC sputter sources available
- Multisource with rotating chuck - up to 4 sources on one module for single target or simultaneous sputtering (4x DC, 2x DC + 2x RF, 3x DC + 1x RF/DC), optional target and substrate shutter
- Controlled chuck temperature from -30 up to 800°C
- Shutter between target and wafer for target cleaning
- Magnetic alignment feature to orient magnetic films
- Optional APC with fully integrated Pyrometer and process gas monitor

The high volume production platform of choice for highly sophisticated and specialized applications.

1. Thin, flexible and robust IC's - Courtesy of Fraunhofer IZM
2. PVD module in maintenance position
The CLUSTERLINE® 300 II provides state-of-the-art process capabilities as well as extensive pre- and post-treatment steps. The open system architecture allows easy tool configuration for PVD, highly ionized PVD, and Soft Etch for wafer sizes up to 300mm.

**Main Features**
- Industry proven 300mm production tool
- Dedicated system for UBM/RDL, BSM & TSV
- Thin wafer handling capability
- 200/300mm bridge or split tool compliant

**System Features**
- Configurable platform to operate as high volume 300mm tool with split or bridge tool capability for 200mm wafers
- Modular design for flexibility of process configuration and superior process control
- Mini environment with 300mm FOUP load ports or open cassettes for 200mm
- Integration platform with eight ports for two cassette stations and up to seven process modules
- Open and modular system architecture, easily configurable and expandable
- Pre- and post treatment modules such as degas and ICP soft etch
- Applications include all current WLP (UBM, RDL, TSV, Fan-out & BSM) metallization steps

**Platform**
- Handling platform delivers highest wafer yield and easy operation.
- Two FOUP load port cassette stations, featuring ergonomic loading, mapping functions to detect cross-slotted, double-loaded wafers, with instant wafer slide out (protrusion) detection at cassette stations
- Two Airlocks with dual shelf, integrated cooling or heating
- Magnetically driven robot system with dual bi-symmetric arms
- Production-proven water handling and processing capability for wafer thickness down to 300 µm and wafer bow up to 2mm; carrier solution for thinner wafers
- Most accurate wafer placement and automatic wafer alignment correction under vacuum

**Multisource with rotating chuck - up to 4 RF or DC sources on one module for single target or simultaneous sputtering
- Optional APC with fully integrated Pyrometer and process gas monitor
- Optimized configuration for Organic/mold substrates
- ICP soft etch process module with MF Plasma enhanced RF Etch enabling high etch rate and excellent uniformity at low bias voltages. Reactive processing with H₂, N₂, and O₂ is available
- Cooled Metal Cage (Ice Dome) and arctic chuck cooling down to -30°C, enabling highest kit life in the etch module for organic wafers like PI or PBO

**Control System**
- Advanced cluster tool control system with ControlWorks® software
- High speed Ethernet backbone with standardized, distributed I/O system
- User friendly GUI with standard PC running Windows 7™ and ‘RAID1’ mirroring
- Real time process flow, sequence and step editors, choice of sequential and parallel water routing as well as carrier scheduling functions
- Closed ballroom compatible racks
- Fab integration with SEMI SECS/GEM interface
- Real time parameter control and display
- Data logging for process review (tabular and graphic)
- Secure operation with multiple user group designations
- Warning and alarm reporting

**Process Modules / Components**
- Degas Module or Radiation Degasser
- ICP soft etch module - SiO₂ removal rate, 0.6 - 0.8 nm/sec
- New highly ionized PVD source technology for high aspect ratio TSV applications - mainly for 3D packaging
- Controlled chuck temperature from -30 up to 500°C
- Metal or ceramized chuck with mechanical water clamping
- ESC or clampless chuck with shadow mask
- Clamped chuck configuration with gas conduction back side heater/cooler for precise temperature control
- Chuck RF Bias
- APQ 310 DC or pulsed DC sputter source with uniformity compensation over target life

**Atmospheric Front End**
- Load Port Modules with 300mm FOUP load ports or open cassettes for 200mm
- Class 1 mini Environment
- Water aligner for rotational pre-alignment (0.3°) and centering of wafers (0.05mm)
- SCARA robot options with 3-axis to 5-axis
- Water flip station for back side metallization
- Buffer station for up to 6 wafers

**Applications include all current WLP (UBM, RDL, TSV, Fan-out & BSM) metallization steps.**

**Figure:**
- 1. 300mm device wafer
- 2. Multisource in maintenance position
The single wafer sputtering tool specifically designed for wafer level packaging and backside metallization for wafer sizes up to 300mm.

**SYSTEM FEATURES**
- High throughput platform for volume production at lowest cost of ownership
- Designed for processing organic passivated wafers
- Smallest footprint. Less than half the footprint of any other commercially available system
- Production proven material handling system
- Easily configurable for 300mm and 200mm wafers
- Temperature controlled process chambers
- Low temperature ICP etching
- Automated maintenance services
- > 90% process matching, control and operation compatible with CLUSTERLINE®
- High spare parts overlap with previous generation
- Applications include all current WLP (UBM, RDL, TSV, Fan-out) and BSM

**ATMOSPHERIC FRONT END**
- Up to four load port modules
- 300mm FOUP load ports or 200mm open cassette
- Dual End-Effecter SCARA Robot
- Buffer station for up to 12 wafers
- Mini Environment
- Wafer Aligner
- Wafer flip station for back side metallization

**PLATFORM**
- Highest throughput synchronous indexer
- Five process module ports
- 300mm or 200mm capability
- Cryogenic water trap pumps
- In-chamber water position monitoring
- Mechanically confined water transfers
- Fast water transfer to minimize contamination
- Powered source handling

**PROCESS MODULES / COMPONENTS**
- Integrated stainless steel process chambers
- Full process isolation
- Hot chuck Degas Module or Radiation Degasser
- ICP soft etch module - SiO₂ removal 0.6 – 0.8 nm/s
- Chilled ICP reactor dome down to -30°C
- APC/10 DC or pulsed DC sputter source with uniformity compensation over target life
- Highly ionized PVD source technology for high aspect ratio TSV applications mainly for 3D packaging
- Chuck RF Bias
- Controlled chuck temperature from -30 to 300°C
- Metal or ceramized chuck with mechanical clamping, ESC or clampless chuck with shadow mask
- Clamped chuck configuration with gas conduction back side heater/cool for precise temperature control
- Drop-in shield kits
- Uses the same process equipment and HW design as the CLUSTERLINE® platform

**CONTROL SYSTEM**
- Advanced control system with ControlWorks® software
- High speed Ethernet backbone with standardized, distributed I/O system
- User friendly GUI with standard PC running Windows 7™ and ‘RAID1’ mirroring
- Real time process flow, sequence and step editors, choice of sequential and parallel wafer routing as well as carrier scheduling functions
- Closed ballroom compatible racks
- Fab integration with SEMI SECS/GEM interface
- Real time parameter control and display
- Data logging for process review (tabular and graphic)
- Secure operation with multiple user group designations
- Warning and alarm reporting
- Identical control SW and HW as the CLUSTERLINE®, for easy transfer

Advanced packaging sputtering solution for high volume production.

**MAIN FEATURES**
- Highest throughput for UBM / RDL process
- Lowest Cost of Ownership for WLP applications
- Designed for processing organic passivated substrates
- 300mm platform with smallest footprint

The revolving carousel on HEXAGON

The revolving carousel on HEXAGON
LLS EVO II

Outstanding process and substrate flexibility combined with excellent reproducibility and film uniformity.

MAIN FEATURES
- Process flexibility: DC, RF, RF/DC combined, DC pulsed, co-sputtering up to three cathodes
- Excellent reproducibility and film uniformity for consistent production quality
- Degas and etch in load chamber isolates process chamber from contaminants
- Easily convertible to various substrate sizes within 5 minutes
- System with 5 cathodes is back in production within 5 hours (maintenance including target and shields exchange, pump time, target burn in)

SOURCE
Highest process flexibility with 5 sources configurable for any of the following options:
- DC sputtering: Conductive materials and low doped reactive processes
- RF sputtering: Dielectric materials and high doped reactive processes
- RF/DC combined sputtering: Increased rate of reactive sputtering
- Pulsed DC sputtering: Improved performance of high and low doped reactive processes. Stress control for certain metals (e.g. Cr, NiV)
- Co-sputtering: Parallel operation with up to three sources which enables:
  - Increased sputtering rates
  - Mixtures of alloys
  - Continuous phasing of materials

SUBSTRATES
- Easily convertible for different substrate sizes and shapes within 5 minutes, customized substrate tooling:
  - Full face deposition
  - Customized edge exclusion, edge masking, shadow masking
  - Different substrate sizes within same batch possible
  - Batch capacity:
    - Standard wafer: 2" x 112; 3" x 72; 4" x 36; 5" x 30; 6" x 12; 8" x 9
    - Pieces of substrates up to max. 200 x 230mm (9 per batch)

SUBSTRATE HANDLING
- Substrate handling at atmosphere
  - No substrate handling inside the process chamber. Substrates are handled only as they enter or exit the load lock chamber
- Manual or fully automatic 6-axis Robot cassette-to-cassette handling (CTC)
  - Either full face deposition on 125mm, 150mm and 200mm substrates (upon request for 2", 3" and 100mm substrate diameters)
  - Masked deposition for 200mm substrates
  - Complete Teaching can be done via GUI (no Teach-Pendant needed)

SUBSTRATE THICKNESS:
- 2" ≤ 10mm, 3" ≤ 14.5mm, 4" ≤ 10mm,
  5" ≤ 11mm, 6" ≤ 8.5mm, 8" ≤ 1.3mm

PROCESS
- Load-lock chamber for degassing and RF or ion beam etching, assuring clean surfaces and good adhesion
- Optimized rectangular cathode design for highest B-field uniformity resulting in better magnetic film properties and lifetime
- Vertical sputtering generates fewer particles and allows longer kit lifetime
- Optimized magnet array increases target lifetime (e.g. Al + 70%)
- Temperature control (e.g., TiW UBM stack ≤ 120°C)
- Substrate heating (up to 350°C in MC, 200°C in LC – power controlled)

CONTROL SYSTEM
- Operator friendly Windows™ based graphical user interface (on separate PC with ‘RAID 1’ mirroring) displays status and trends, tracks and registers process information, manages alarms and recipe handling
- Siemens Simatic Microbox PC for real time control of all machine functions
- SECS/GEM Interface (option)
- Industry-standard diagnostic and control equipment option, e.g. RGA, Data logging and run-protocols are an integral part of the control system
- Media consumption reporting (ISO 14001)

DOCUMENTATION
- Operating instructions available in English, German & Japanese language
- Integrated documentation comprises all documentation - available online (catalog creator)

HARDWARE
- Reliable industry proven production system
- Moveable shutter:
  - Avoids cross contamination between sources
  - Individual pre-sputtering
- Unique valve separates load-lock chamber (LC) and main chamber (MC) avoiding particles and gaseous contamination, assuring repeatable process conditions
- Compact footprint (remote rack cabinets/pumps/compressors available in extended layout +15 m)
- Three main units allow easy and fast plug and play installation

SUBSTRATE THICKNESS:
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OPERATING INSTRUCTIONS
- Follow the operating instructions included in this manual.
- Ensure that all safety precautions are followed.
- Regular maintenance checks should be carried out as per the manufacturer’s guidelines.
- For any troubleshooting or technical assistance, contact the manufacturer’s support team.

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DOCUMENTATION
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Advanced Nanotechnology offers innovative production solutions for thin-film coating of touch panels, energy harvesting applications such as thermoelectric generators, solar cells, thin-film batteries and other energy storage devices.
The challenge in designing high efficient Thermo Electric Generators (TEG) is to create a device with high electrical conductivity combined with low thermal conductivity. In most materials electrical and thermal conductivity go hand in hand. Multi Layer Thin Film Technology is the most cost efficient solution to overcome this challenge. It even provides the possibility to increase the efficiency of the TEG Device.

SOLARIS S380

**FEATURES**
- Quick change over from one substrate size to another with carrier system
- Carrier loading / unloading included in the machine design
- Small footprint and low operating costs
- Flexible configurations allowed - each process station is separated from the other
- Multi layer capability - each chamber can operate different processes and deposit different materials
- Multi Source Sputtering – alloy development with up to 4 different materials
- High throughput – up to 900 carriers / h
- Substrate rotation during sputtering ensures layer uniformity better than ±2%
- Max. coated area up to 380mm diameter
- Film annealing with heater up to 550°C
- Surface cleaning and activation by etching
- Easy integration into fab automation
- Total down time for target and shield change max. 60min

**FLEXIBILITY**

**VARIOUS SUBSTRATES**
- Substrate sizes up to 15” diagonal
- Rigid or flexible, e.g. glass substrates, foils, silicon, etc.
- 2.5D Substrates

**VARIOUS APPLICATIIONS**
- Touch Panels
- Thermo Electric Generators
- NEMS / Semiconductor
- OLED
- Thin Film Batteries

**VARIOUS PROCESSES**
- DC Sputtering / DC Reactive Sputtering
- RF Sputtering
- Etching / Cleaning
- Heating / Annealing
- Flash Evaporation
- Cooling

**SOLARIS FOR TOUCH PANELS**
- The SOLARIS platform is designed for several applications in the Touch Panel market
- The multilayer capability allows AR and IIM coatings, ITO coatings, metal coatings and anti smudge coatings

**TOUCH PANELS**

Touch Panels are based on glass or polymer substrates coated with Transparent Conductive Oxides (TCO) in combination with AntiReflex (AR) and AntiSmudge (AS) coating.

**THERMOELECTRIC**

The challenge in designing high efficient Thermo Electric Generators (TEG) is to create a device with high electrical conductivity combined with low thermal conductivity. In most materials electrical and thermal conductivity go hand in hand. Multi Layer Thin Film Technology is the most cost efficient solution to overcome this challenge. It even provides the possibility to increase the efficiency of the TEG Device.

**ENERGY STORAGE**

Thin Film Batteries use new materials created using nanotechnology to achieve components that are used to manufacture batteries 40 times more efficient than current batteries. The SOLARIS with its Multi source capability is the ideal tool to develop new materials and alloys to drive developments in energy storage services and is at the same time the proven equipment for mass production.
SOLARIS S151

Advanced Nanotechnology Solution
for Emerging Technologies

FEATURES
- Quick change over from one substrate size to another with carrier system
- Carrier loading/unloading included in the machine design
- Small footprint and low operating costs
- Flexible configurations allowed - each process station is separated from the other
- Multi layer capability - each chamber can operate different processes and deposit different materials
- Multi Source Sputtering - alloy development with up to 4 different materials

FAB AUTOMATION CONCEPT
- High throughput – up to 1200 carriers/h
- Substrate rotation during sputtering ensures layer uniformity better than ±2%
- Max. coated area up to 225mm diameter
- Film annealing with heater up to 550°C
- Surface cleaning and activation by etching
- Easy integration into fab automation
- Target and shield change time max. 30min
- Target lifetime in case of SiN coating of cSi solar cells = 180,000 cells

FLEXIBILITY

VARIOUS SUBSTRATES
- Substrate sizes up to 8” diagonal
- Rigid or flexible, e.g. glass substrates, foils, silicon, etc.
- 2.5D Substrates

VARIOUS APPLICATIONS
- Touch Panels
- Thermo Electric Generators
- Solar Cells
- NEMS / Semiconductors
- OLED
- Thin Film Batteries

VARIOUS PROCESSES
- DC Sputtering / DC Reactive Sputtering
- RF Sputtering
- Etching / Cleaning
- Heating / Annealing
- Flash Evaporation
- Cooling

TOUCH PANELS
Touch Panels are based on glass or polymer substrates coated with Transparent Conductive Oxides (TCO) in combination with AntiReflex (AR) and AntiSmudge (AS) coating. The SOLARIS platform provides the required production flexibility for different sensor and device designs.

THERMOELECTRIC
The challenge in designing high efficient Thermo Electric Generators (TEG) is to create a device with high electrical conductivity combined with low thermal conductivity. In most materials electrical and thermal conductivity go hand in hand. Multi Layer Thin Film Technology is the most cost efficient solution to overcome this challenge. It even provides the possibility to increase the efficiency of the TEG Device.

ENERGY STORAGE
Thin Film Batteries use new materials created using nanotechnology to achieve components that are used to manufacture batteries 40 times more efficient than current batteries. The SOLARIS with its Multi source capability is the ideal tool to develop new materials and alloys to drive developments in energy storage services and is at the same time the proven equipment for mass production.

PHOTOVOLTAIC
The SOLARIS is designed for front- and back side coating of crystalline silicon Solar Cells. The Multi layer capability allows passivation and "silane free" SiN-AR (Anti Reflective) coating on the front side, with the freedom to select optical criterias (like refractive indices, etc.) of individual layers as well as passivation and metal layer deposition on the back side.

SOLARIS is an Oerlikon trademark registered in Europe and other countries
Oerlikon strives to be your most reliable business partner, worldwide, by delivering the highest quality services. Our commitment is your success.
Maximize the performance and value of your Oerlikon equipment

OERLIKON ADVANCED CUSTOMER SERVICE PROGRAMS

Oerlikon Systems Global Customer Support offers a complete solution for all your equipment needs with flexible offerings from our specialists worldwide.

In today’s global climate, customer satisfaction and customer retention has never been of greater importance to Oerlikon. Everybody strives to increase revenue while at the same time reducing costs and conserving cash. We do our part to help by offering quality services that offer excellent value to our customers with a clear return on investment.

We have improved and expanded our offerings to allow us to provide additional value especially in the areas of:

- Upgrades with clear return on investment
- Repair & Exchange parts program
- Customized trainings
- Greater service offering

In today’s cost sensitive production environment continual operational improvement is a must.

Oerlikon Customer Service helps you continually improve your Oerlikon system performance and increase system availability while minimizing costs and risks.

Using the trust we have built with our customers, we strive to deliver the highest quality services, with the maximum flexibility, to support their success.

OERLIKON SYSTEMS HAS EXPANDED ITS RANGE OF SERVICES TO FULFILL EVERY POSSIBLE NEED

KEY BENEFITS

Upgrades
- New system features, extendibility, ROI
Fixed price repair
- Shorter lead times with attractive pricing
Exchange program
- Immediate availability & lower costs
Customized service offerings
- Maintain your system with lowest CsO
Customized parts packages
- Ensures cost-efficient ordering
Customer specific training
- Achieve self sufficiency
PM-Packages
- Secure system availability
- Extend system lifetime
System Health Check & optimization

SERVICE PACKAGES

SYSTEM UPGRADES

We offer a variety of upgrades for your machine in order to

- Improve tool performance and reliability
- Extend tool lifetime
- Take advantage of latest features
- Have compatibility to latest standards

All retrofits include an update of your schematics and spare part catalogue. Your local service office will help you to identify the available and useful upgrades for your system. Contact details can be found on pages 26 and 27.

NEW EXPANDED PARTS REPAIR AND EXCHANGE PROGRAM

We have expanded our program to substantially reduce the price and lead time on critical parts.

Fixed rate for parts repair program
- Reduces your costs for running equipment
- Helps you to keep an immediate overview on your service budget
- Offers warranty of 6 months on your repaired part

Exchange program
- Offers an immediate availability which shortens system downtime
- Major cost savings compared to new parts purchases
- Warranty of 6 months on your exchanged part

Repair and exchange prices and parts lists are available on request from your local service office.

CUSTOMER SPECIFIC TRAINING

With the support of our training department we enable you to train your engineers to a level where they can maintain and service your Oerlikon systems independently.

Details of the standard training we offer can be found on our website. Visit www.oerlikon.com/systems and then click on Customer Support.

CUSTOMIZED SERVICE OFFERINGS

Oerlikon Systems has expanded its range of services to fulfill every possible need from our Customers in today’s challenging climate.

We now offer:

- Extended warranties for our systems, 12 & 24 months including all parts and service required
- Preventative maintenance contracts where Oerlikon handles all your maintenance needs
- Tailor-made onsite contracts to suit every need 24/7, 365 days a year
- On-call contracts where customers can take advantage of a bank of hours at reduced price
- Improved response times
- System Health Check
To contact Oerlikon Systems directly for customer service and technical support, please contact the location nearest you.

- **Penang, Malaysia**
  - ZMC Technologies (Malaysia) Sdn Bhd
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  - S: pf_lau@zmc.net
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  - 1801 Hongmei Road
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  - China
  - T: +86 21 5383 8811
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