



Test & Inspection

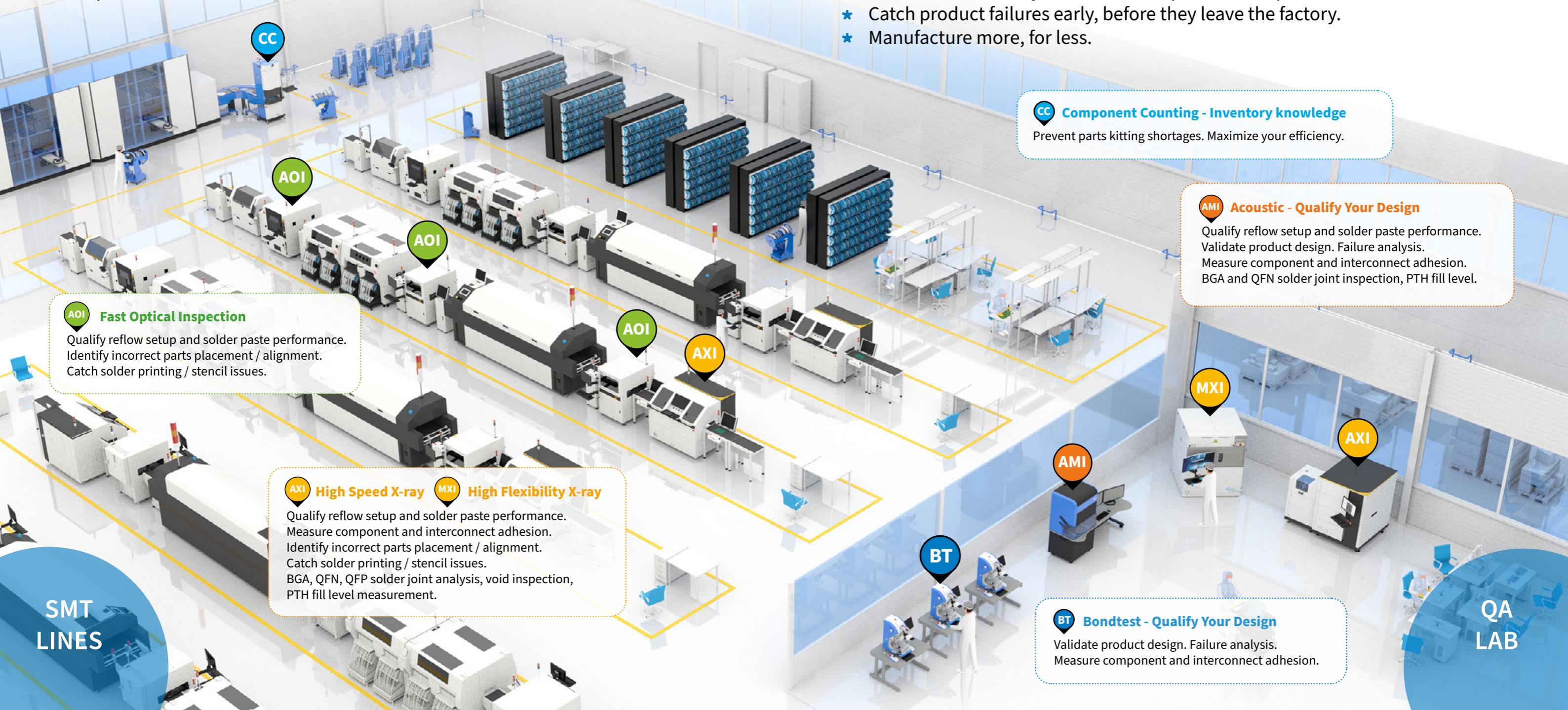
Solutions for SMT Manufacture

www.nordson.com/TestInspect

 **Nordson**
TEST & INSPECTION

Optimize Your SMT Process

The electronics industry is an exciting marketplace. Component sizes are getting smaller, enabling more compact and powerful products. However, this additional complexity means building quality into SMT manufacture is more important than ever.



High Speed X-ray

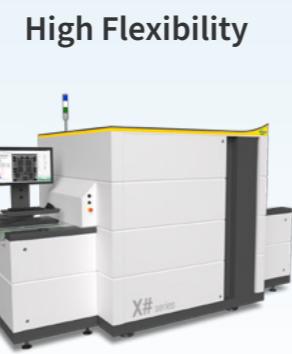
High-speed, autonomous inline and semi-inline X-ray Inspection systems

Ensure the quality of component placement, solder reflow and selective soldering with Nordson's range of high speed, autonomous X-ray inspection products. Offering MES/SECS-GEM integration and FLI connectivity to pass component fault locations directly to Nordson manual X-ray for second line, high resolution verification.



X-series

High speed inline AXI platform	Inspection speed: Transmission (X2, X2.5, X3): Up to 6 views/s
Sample size: 80-460 x 80-360 mm	Off-Axis (X2.5, X3): Up to 5 views/s
Inspection area: 460 x 360 mm	3D Planar CT (X3): Up to 1s/FoV
Resolution: Up to 3 μ m/pixel	
Imaging techniques: 2D, 2.5D, 3D Planar CT, SFT™	



X#-series

Flexible inline AXI platform	Highly flexible autonomous X-ray Inspection system for extreme angle off-axis imaging
Sample size: 100-510 x 80-400 mm	Sample size: 100-400 x 50-350 mm
Inspection area: 480 x 400 mm	Inspection area: 400 x 350 mm
Resolution: Up to 3 μ m/pixel	Resolution: Up to 3 μ m/pixel
Max. sample weight: 5 kg	Max. sample weight: 5 kg
Imaging techniques: 2D, 2.5D, 3D Planar CT, SFT™	



XT-series

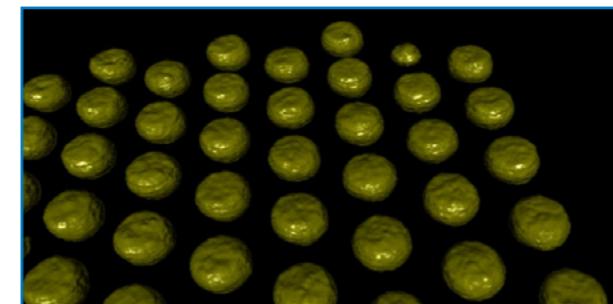
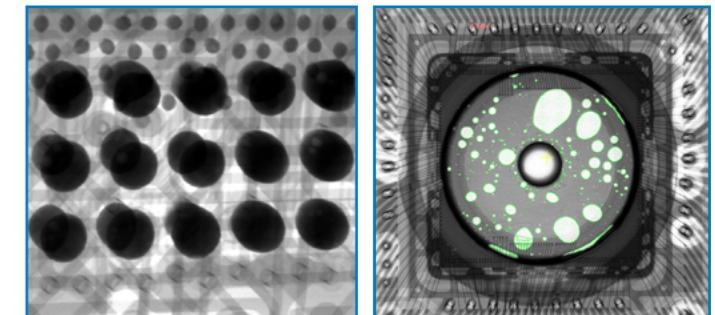
High Angle	Oblique view image acquisition enables the inspection of PTH joints, head in pillow (HiP), overlapping parts on double sided PCBs and PoP/SiP design packages.

Nordson's autonomous X-ray Inspection strategy uses a dynamic approach, combining the below imaging techniques to ensure the best solution for every inspection task.

2D and 2.5D inspection

Orthogonal (top-down) imaging for the inspection of simple cases, such as non-overlapping devices.

Oblique view image acquisition enables the inspection of PTH joints, head in pillow (HiP), overlapping parts on double sided PCBs and PoP/SiP design packages.

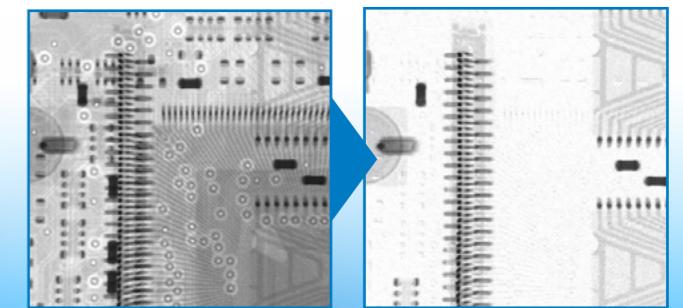


SFT™ – Slice-Filter-Technique

Patented imaging technique to remove disturbing background structures of the inspection image. SFT™ offers an extremely fast alternative to filter out devices that are not being inspected and provides the possibility to analyze the part of interest.

Planar CT

The ultimate solution for heavily overlapping devices. In case a simple 2.5D image does not provide a solution, the minimum number (max. 16) of off-axis images are captured, and a reconstruction is performed. Planar CT enables the inspection of horizontal and vertical slice images of the board, hence offering the possibility to separate parts overshadowing each other.



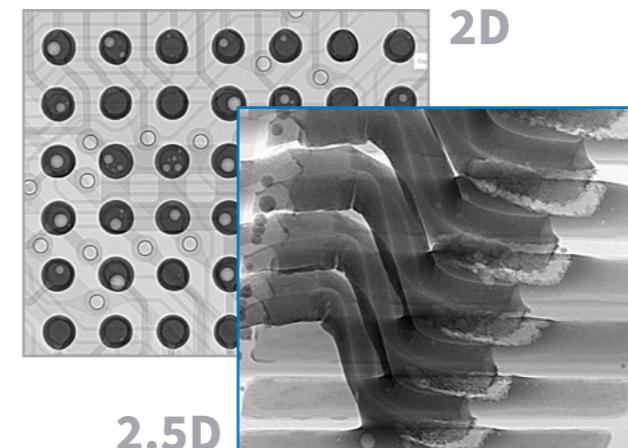
High Flexibility X-ray

High flexibility and industry leading resolution

- ★ Manually inspect hidden solder joints to confirm optimal reflow and process setup.
- ★ Verify rework and selective soldering.
- ★ Perform failure analysis and reverse engineering.

Our manual X-ray Inspection products are fast to use with easy to setup automatic inspection recipes. Ideal for high mix, lower volume inspection and ultimate image resolution.

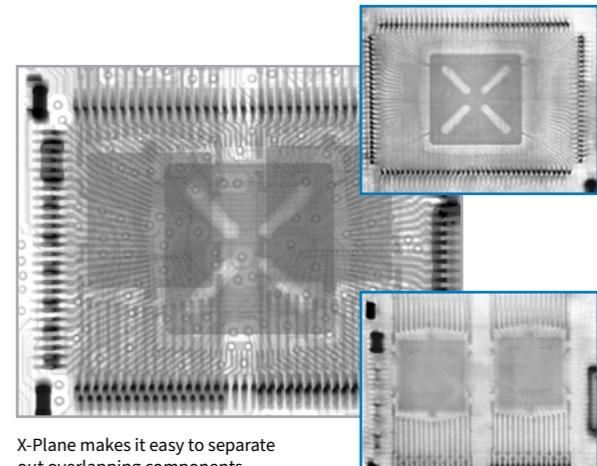
Flexible Inspection	High Resolution	Ultimate Failure Analysis Resolution	Large Panel Inspection
			
QUADRA[®] 3	QUADRA[®] 5	QUADRA[®] 7	Ruby XL
0.95 μ m Feature recognition	0.35 μ m Feature recognition	0.1 μ m Feature recognition	0.5 μ m Feature recognition
7,500x Magnification	45,000x Magnification	68,000x Magnification	23,400x Magnification
510 x 445 mm 20 x 17.5" Inspection area	510 x 445 mm 20 x 17.5" Inspection area	510 x 445 mm 20 x 17.5" Inspection area	964 x 672 mm 37.9" x 26.4" Inspection area



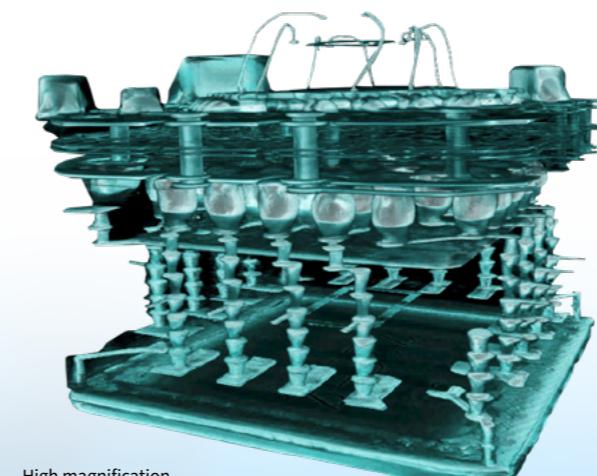
2D and 2.5D inspection

2D top down views make it easy to see voiding, and defects such as opens and bridging.

2.5D oblique angle is great for inspecting fill level, identifying head in pillow (HiP) defects and cold joints.



X-Plane makes it easy to separate out overlapping components.



High magnification
µCT of two integrated circuits
attached to a double sided PCB.

3D µCT

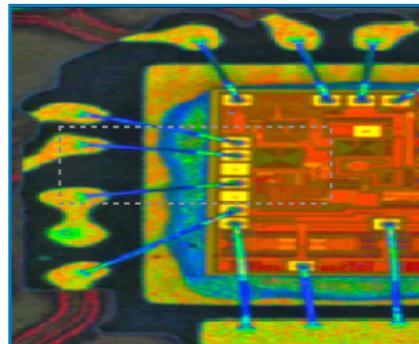
The ultimate technique for failure analysis. The µCT accessory is quick to use and allows you to see features that are obscured in 2D and 2.5D images. Open up a whole new world of failure analysis inspection.

Optical Inspection & Metrology

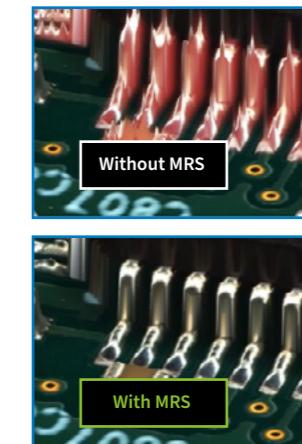
Powered by MRS® Technology

Industry leading automated optical inspection systems

Nordson's Optical Inspection and Metrology systems offer superior performance, powered by sophisticated algorithms for the ultimate combination of high-speed, high resolution and high accuracy. Significantly speed set-up, simplify processes, reduce training efforts and minimize operator interaction with advanced ML and AI software for automated optical inspection and coordinate measurements of critical features – saving time and expense. Real-time SPC monitoring provides valuable yield management.



The Multi-Reflection Suppression® (MRS®) sensor's unique architecture simultaneously captures and transmits multiple images in parallel while proprietary 3D fusing algorithms merge the images together resulting in ultra-high quality 3D images, high-speed inspection and metrology, and improved yields and processes. MRS technology delivers unmatched accuracy by meticulously identifying and rejecting reflection based distortions caused by shiny components and surfaces. Effective suppression of multiple reflections is critical for highly accurate inspection and measurement, making MRS technology an ideal solution for a wide range of applications including those with very high quality requirements.



AOI, SPI and CMM	AOI, SPI and CMM	CMM	SPI	High Resolution	High Speed	Dual Side Inspection
SQ3000+	SQ3000	SQ3000-CMM	SE 3000	M2	FX-940	FX-942
Advanced SMT, advanced packaging, and other high-end inspection and metrology applications	SMT and SEMI inspection and metrology applications	SMT and SEMI inspection and metrology applications	SMT inspection applications	Microelectronics and wafer inspection	SMT, THT and conformal coating inspection	SMT, THT and conformal coating inspection
High speed, high accuracy and an even higher resolution 5µm, sensor	High speed, high accuracy and high-resolution	High speed, high accuracy and high-resolution for coordinate measurements	High speed, high accuracy and high-resolution for dedicated SPI applications	Submicron resolutions to 0.35 µm	RGB, UV or multi side light	Dual side up to 10 cameras configuration
5µm MRS® Sensor Technology	MRS® Sensor Technology	MRS® Sensor Technology	Dual-Mode MRS Sensor Technology	Metrology and AFM tools	3D +2.5D +2D technology	2.5D +2D Technology

Qualify Your Design

Discover solder voids, underfill voids and counterfeit devices with Acoustic Products

Nordson's acoustic product line is the most trusted authority for non-destructive internal analysis, assuring accuracy and providing the vital data needed for failure analysis decisions throughout the production process.



Complex Advanced Imaging



GEN7™ C-SAM®

Complete analysis faster than ever with advanced hardware, new features, and analysis.

Best image control and gain with automatic pulser selection for either high or low frequency applications.

350 x 350 mm Inspection area

Fastest acquisition time with five individual linear motors

Save time, edge finding and auto focusing capabilities with auto scan

Direct online support and user application support

Flexible Inspection



D9650 C-SAM®

Flexible configuration for a variety of applications

Ideal for FA, process development, material characterization, low volume production or other lab inspections.

314 x 314 mm Inspection area

Fast acquisition time with a linear scanning motor

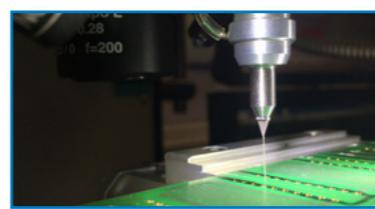
Save time, edge finding and auto focusing capabilities with auto scan

Direct online support and user application support

Ramp up new product designs into manufacture, fast

Nordson Bondtesters allow you to accurately measure the strength of component adhesion to the PCB.

Qualify new designs prior



to manufacture with the fully featured 4000Plus™, and scale up to production with the 4600 Automatic Bondtester.

Qualify New Product Design



4000Plus

Test new ideas and conditions with unique test modes

160mm x 160mm precision test area

200kg shear, 50kg pull at up to 5mm/s

SMD shear/pull, hot bump pull (HBP), and track peel individual components, flex or PCBs

Automate The Production Test Cycle



4600

Component quality control without errors and with higher repeatability

430mm x 320mm ultra-high precision test area

20kg shear, 10kg pull at up to 5mm/s

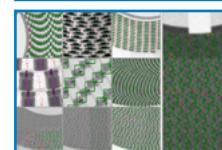
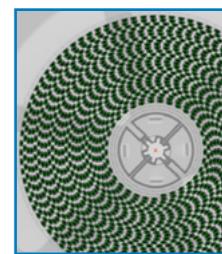
Shear/pull on multiple components in a batch, all operator-free

Test Your Design

Maximize Efficiency

Prevent component shortage line stops with X-ray counting

Inventory knowledge is essential for modern industry. Whether you are a manufacturer, supplier or broker, live assurance of correct inventory in the MRP system minimizes stock, labor, errors and costs ensuring customer confidence and trust. The Assure X-ray Component Counter keeps SMT lines running by ensuring sufficient components are available before the production run.



Advanced Automatic Counting



Assure™ Pro

X-ray Component Counter

>99% counting accuracy on most components

Same features as standard Assure with included benefits of automated, intelligent barcode label reading and identification. Prevents operator error

Fully Automatic Inline Counting



Assure™ Flex

X-ray Component Counter

>99% counting accuracy on most components

Complete reel counting flexibility. Complete counting solution for every workflow, from walk up operator loading to inline operator free

Direct connection to storage towers/rooms

Trust Our Experts

Regional support, quick reaction

Nordson's regional service and application centers together with our established support network guarantees a fast, local response.



Nordson product care and health plans

Maximize system uptime and throughput with Nordson's comprehensive range of care and health plans.



Knowledge

Get the most from your equipment with on-site and regional product training. Nordson regional service and support partners are extensively trained, qualified and audited to a high level providing responsive, accurate support.



Find out more with the X-ray inspection guide

The comprehensive guide shows you how to find defects quickly using X-ray inspection. Make pass/fail judgements on a range of commonly found defects, and understand where in the production process the defect may have occurred.



For more information, speak with your Nordson representative or contact your Nordson regional office

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