

simplifying
**Composite
Inspections**

Manual
Semi-Automated
Robotic
Ultrasonic
Solutions

Technology at work for you

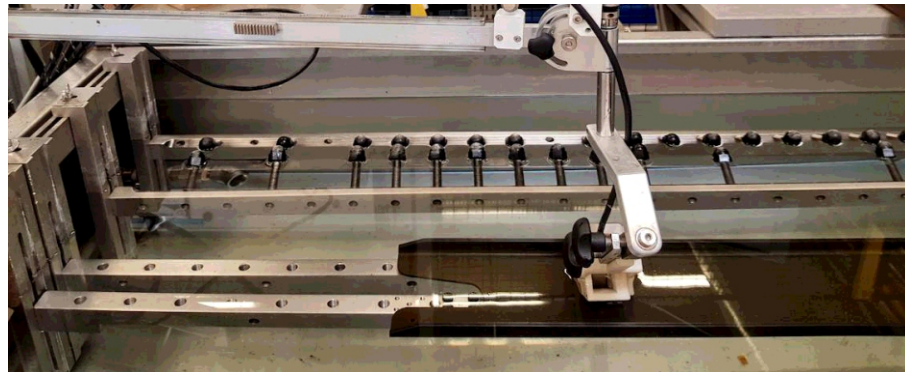
COMPOSITE MANUFACTURING



A composite system solution starts with the parts you must inspect. To propose an effective solution, we begin by assessing the inspection background. For example: What types of composites is manufactured? What is the lay-up process? What are the shapes? Are there small radii? Are there non parallel faces? What is the attenuation of the composite? What is the surface condition? Are there labels applied to the surface? Are all parts with the same lay-up? Is a mesh applied?

a manual or a semi-automated solution for small production work

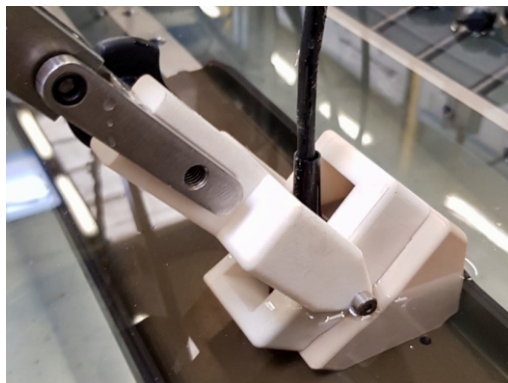
With complex composites, a 2 axis X-Y scanner is not sufficient to fully inspect parts. A 3 axis R Theta provides greater scan flexibility and improved portability and allows improved access. Designed for Phased Array, it can also be used with conventional transducers.



A 3 AXIS MANUAL SCANNER

MANUAL SCANNER SPECIFICATIONS

- 3 position encoded axis R, Theta1, Theta 2
- 2 additional degrees of freedom to enable part following
- Range : Both Theta 360 degrees, R available in 400 , 600 and 1000 mm length
- All axes mounted on bearings for precise and smooth displacement
- Locking devices to facilitate calibration
- Anodized Aluminum frame is used for lightweight and rust-free components
- Sliding Y-axis provides greater scan flexibility and improved portability



A semi-automated system is provided with the R Theta Scanner. Equipped with a hydraulic platform, it is adjusted to fit the operator height. A 1,5 metre tank allows small and medium parts to be inspected. Adjustable fixtures with round heads allow parts to be placed at the appropriate height. The round heads ensure that the fixtures are invisible on the ultrasonically. Holding spring arms maintains parts in position. A filtration unit with a water heater provides clean water and a comfortable milieu for the inspector.

SEMI-AUTO SPECIFICATIONS

- Dimension: 1500 mm x 800x 800 mm
- Fitted with a fixed R Theta scanner
- Stainless Steel Tank
- Stainless adjustable fixtures
- Adjustable bench
- Water filtration and water heater
- Electric cabinet (220 V or 120 V)
- Stainless adjustable fixtures

FLEXIBLE ROBOTIC CELLS

Our robotic cells integrates a KUKA Robot into a flexible inspection solutions. Each cell can be configured to perform the composite inspection of your parts. The development and design process is minimized to reduce cost and delivery time.

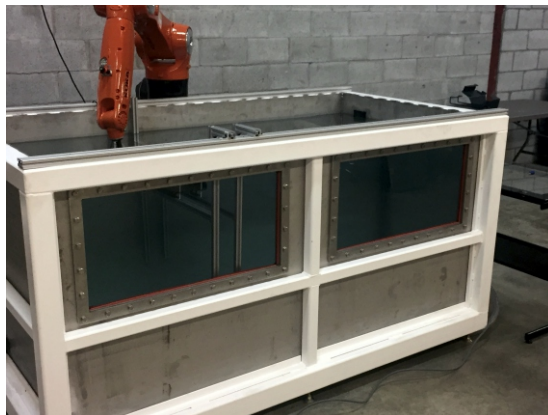
Tools dedicated to Ultrasonic Inspections have been developed. Tool Center Point (TCP) positions are acquired and automatically converted to 2 encoded positions for 2D imaging on the instrument. Ultrasonic inspection paths are planned on Mastercam or another software tool as required. Robot DK is integrated into the solution for robot programming, simulation and code generation.

a Kuka robot with immersion tank complemented with the necessary tools

ULTRASONIC ACQUISITION UNITS

By choice, we do not manufacture ultrasonic acquisition units for composite inspection. We integrate a variety of instruments and recommend the best for your applications. No instrument and its associated software is better for all inspections. We independently can provide the best solutions for your needs. Some of the acquisition units we can use are:

- Olympus Focus PX 16/64, 32/128
- M2M Pocket
- M2M Multi X 64/64
- Pragma Pro
- Zetec Zircon



ACQUISITION SOFTWARE

These instruments are delivered with an acquisition software. This also leads to advantages or one instrument compared to the other. We also use libraries to control these instruments. Some of the commands that are required to fully automate a process are: start/stop/pause acquisition, encoder position, open/save set-up, open/save inspection results, alarms. These functions are transparent to the operator but are useful to make the process to flow smoothly while improve productivity.



CUSTOM SOLUTIONS

Our composite solutions are customized to your applications. There is no one fit all solutions, Our solutions are agile and meant to be adapted to fit your environment.



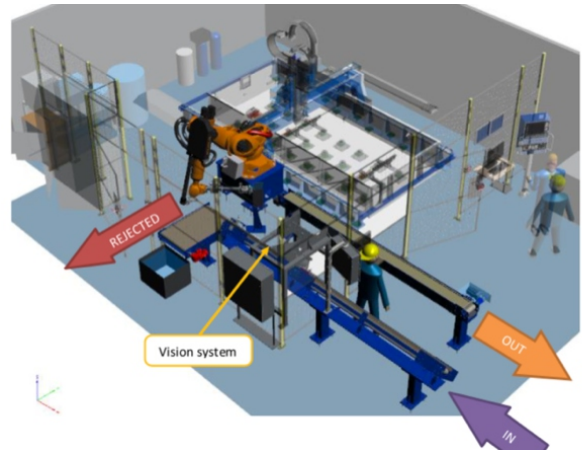
INTEGRATED SOLUTIONS

We can interface to your network. Interoperability is offered to connect and communicate inspection status and results.



AUTOMATED SOLUTIONS

Automation is integrated to the level you required. Starting from scan plan generation, to part loading, data acquisition and finally to analysis. No operation is the same and flexibility is the key to our offering.



a fully automated solution for high production work

SPECIFICATIONS

- Five axis gantry - CNC driven
- Stainless Steel Immersion tank • Part Rotator
- Unique Vacuum controlled Holding Fixtures ensuring a 100% part inspected
- Kuka robot
- Inlet, Outlet and Rejet conveyors
- Vision system for part recognition (2D & 3D)
- Water filtration system
- CNC Operator Panel
- Main Operating Software
- Automated Analysis Software



composite inspection



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