

Developed and Launched the Air Coupled Ultrasonic Testing System 「NAUT21-S」 onto the market which can inspect from one side of the specimen.

Japan Probe Co., Ltd. (Headquarters: Yokohama City, President Yukio Ogura, Tel: 045-242-0531, hereinafter referred to as Japan Probe), which is engaged in the ultrasonic inspection and measurement solution business, has developed and started in selling the Air Coupled Ultrasonic Testing System "NAUT21-S".

○What is Non-contact Air Coupled Ultrasonic Testing System "NAUT21"?

Ultrasonic inspection usually uses a couplant (that propagates ultrasonic waves) such as water or gel, so the specimen must be wet. In response to this issue, Japan Probe developed and launched the Non-contact Air Coupled Ultrasonic Testing System "NAUT21" on to the market in 2009, which enables non-contact ultrasonic inspection in the air. This makes it possible to perform non-destructive inspection without touching the specimen and getting it wet.

"NAUT21" has been used in various customers' inspection / measurement / evaluation scenes such as carbon fiber reinforced plastic (CFRP), lithium ion battery (LiB), friction material (brake pad), solar panel, thin film and so on.

*[NAUT21 series](#)

○"NAUT21-S" that meets further needs with a new measurement method

Currently, "NAUT21" uses the "Transmission method" in which air transducers are placed above and below the specimen as a measurement method, and it is necessary to secure sufficient installation space for installing the probe holder and mechanical part during measurement. For this reason, There was a request for system development which transducers cannot be installed on both side of specimen, or can measure at limited space. To meet these customers' needs, Japan Probe has developed a new air coupled ultrasonic testing system "NAUT21-S" that uses the "V Transmission method". This system can detect metals or resins, and other bonding, adhesion, and filling defects.

○What is the "V Transmission method"?

The "V Transmission method" used in "NAUT21-S" is different from the "Transmission method" in which the transmitting / receiving air transducers are installed on both sides of the specimen as shown on Figure-1. It is a measurement method in which the transmitting / receiving air transducers are installed on one side of the specimen, and propagates ultrasonic waves inside of the specimen.

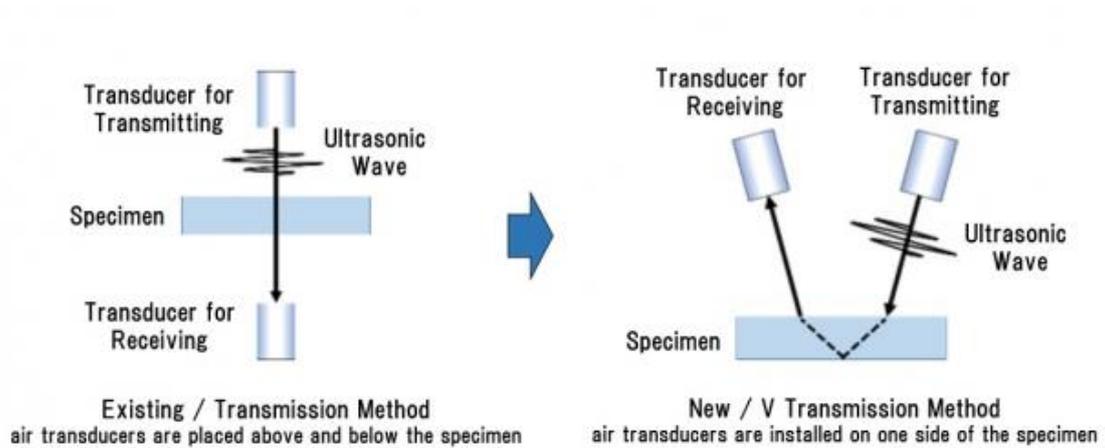


Figure-1. The "V Transmission method" used in "NAUT21-S"

○Features of "NAUT21-S"

(1) Applicable to box-shaped specimen!

Thanks to the adaption of the "V Transmission method", only one of the upper or lower part of the specimen is used during measurement, so it makes possible that air coupled ultrasonic waves are applied to specimens such as boxes where transducers cannot be structurally placed on both sides.

(2) Space-saving and easy to introduce even in-line!

Since the installation space for probes has been reduced, It can be applied in a wide range, such as performing inspections at in-line without interfering with other devices.

○Application example of "NAUT21-S": Inspection of the heat sink bonding part of the lithium ion battery

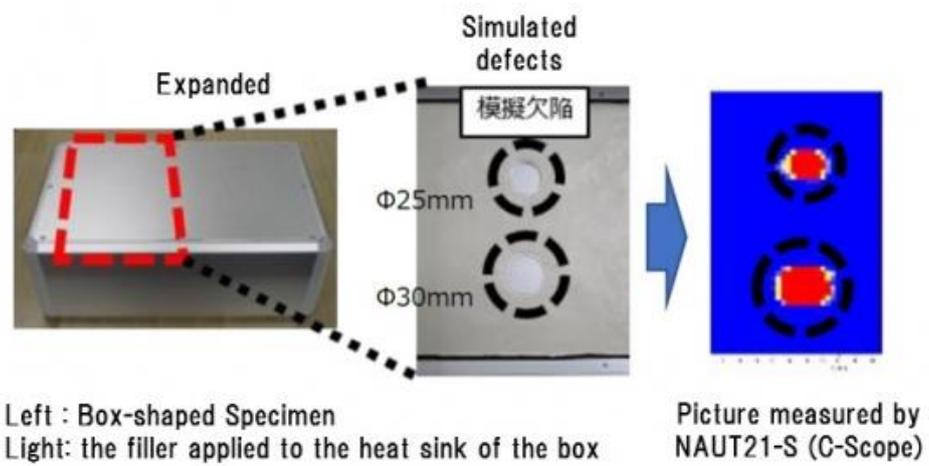


Figure-2. Inspection of LiB heat sink bonding part by NAUT21-S

Figure 2 shows an example of detecting simulated defects provided in the filler applied to the heat sink of the box that houses the lithium-ion battery. By measuring from one side, the system makes possible to inspect a sample with such a shape by air coupled ultrasonic without installing the probes up and down.