

B.SPA16 Probes

**Wear Resistant, Straight Beam,
Phased Array Probes With DGS
Functionality**



**One Probe – Sector Scan – Simple Calibration
Combining the Advantages of Conventional B.S and Phased Array Probes
Accurate Detection and Sizing of Defects Over a Steering Range of up to +/-30°**

The first phased array straight beam contact probe which offers ergonomic inspection to find and size defects over a steering range of up to +/-30°. The new probe, which features a non-abrasive, probe surface protection membrane, provides faster, more accurate and more comprehensive inspection in applications where conventional straight beam probes have historically been used in conjunction with wedges, leading to significantly increased productivity and probability of detection.

When used with GE's Phasor XS, a single probe allows accurate DGS sizing of defects in thick components from billets, large welds, castings and forgings to solid axles and threaded bolts over the complete steering range.

The replaceable non-abrasive protective, ES45-type membrane provides a long probe lifetime and a reliable coupling on rough surfaces. In combination with the ergonomic housing design of all B.S probes, these probes offer ease of inspection, even for extensive inspection tasks.

Realise the benefits of DGS sizing with just one straight beam probe

The DGS method is specified in many countries worldwide as a sentencing technique for sizing defects. When using conventional straight beam probes, obtaining a comprehensive coverage involves using wedges to provide various angles of inspection, a method which requires calibration for each angle which is usually only carried out on a specific number of angles.

The **new B.SPA16 probe** is a phased array probe, where the longitudinal wave sound beam is electronically steered through a sector of up to +/-30°, producing inspection data in one degree steps. The patented design transducer is compatible with the specific software in GE's Phasor XS allowing it to perform accurate DGS sizing of a detected flaw at each angle.

The sector scanning of the new probes can reduce inspection times to 1/16 of those required using conventional scanning at eight discrete angles.

Sizing made easy

There are just three steps to a sizing inspection using the B.SPA16 probe: Calibrate – Detect – Read

Features	Benefits
1. Accurate DGS sizing in a straight beam contact probe.	1. Provides the benefits of DGS sizing in a single probe, reducing inspection times, compared with DAC inspection, and improving accuracy.
2. Can be used as a standard Phased Array straight beam probe.	2. Can be used to carry out standard Phased Array probe operations, including thickness measurement, dynamic focusing and DAC sizing.
3. Replaceable probe face protection membrane.	3. Allows long working life.
4. Steerable phased array sound beam for comprehensive coverage over a sector scan of up to +/-30°.	4. Eliminates the need for multiple inspections using different wedges, as required with conventional straight beam probes. Saves time while providing more comprehensive inspection coverage.
5. High energy longitudinal wave.	5. Enables the inspection of thick parts and provides an easy-to-interpret sector scan.

Applications

The new probe can be used in any inspection task for which conventional straight beam probes are used, especially if an inspection under multiple angles is required. Typically, these include the inspection of billets, large welds, castings and forgings.

Specific applications include solid axle inspection from the front joint and threaded bolt inspection from the top.

Technical specifications

Frequency	2 MHz	4 MHz
Bandwidth	50%	40%
Transducer dimension	Ø 24 mm	Ø 24 mm
Number of elements	16	16
Pitch	1.5 mm	1.5 mm
Element size	variable	variable
Nearfield length*	45 mm	90 mm
Steering range	-/+30 degree	-/+20 degree
Connector type	Phasor™ : 0069805 Omniscan™ **: 0069888	Phasor: 0069806 Omniscan **: 0069889
Cable length	2m	2m
Additional functionalities	<ul style="list-style-type: none"> • Non-abrasive protective membrane (ES 45: 0053756) • DGS capable (Phasor XS) • Standard PA probe for steering and dynamical focusing 	

