

# Sharck™ Carbon Steel Weld Probe

*Fast Inspection of Surface-Breaking Cracks without Surface Preparation*



The innovative design of Sharck probes is capable of addressing the inspection needs of several industries relying heavily on carbon steel welds, such as the onshore and offshore oil and gas, wind power, and structural industries.

Sharck is specifically developed for cracking in carbon steel, using tangential eddy current array (TECA™) technology. This probe is capable of positioning cracks, measuring their length, and sizing them as deep as 7 mm (0.28 in). This can be achieved without removing paint or protective coatings, unlike more conventional inspection techniques.

The spring-loaded fingers of the Sharck probe enable scanning the weld cap, the toe area, and the heat affected zone in a single pass — at up to 200 mm/s (8 in/s) with full data recording. The advanced 2D and 3D C-scan imaging generated from the probe's data offers the most intuitive inspection results.

The probe also features embedded control buttons to enable performing a few select operations remotely (e.g., balancing the probe elements; starting, stopping, and saving an acquisition). The probe's ergonomic design guarantees an excellent grip, even when wearing work gloves. Finally, Sharck's active area is marked to make it easier to position the probe when scanning.

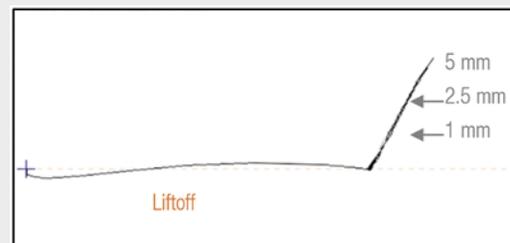
## Benefits and Features

- Ergonomic design
- Embedded control buttons
- Detection and sizing of surface-breaking cracks with tangential ECA (TECA) technology
- Designed for butt welds: Independent, spring-loaded fingers adapt to weld geometries
- Robust and durable
- High-precision encoder for easy flaw positioning
- Compatible with the Reddy® and Ectane®
- Complies with ASTM E3052

## TECA Technology Overview

TECA technology incorporates coils that yield a very specific eddy current signal for surface-breaking cracks in carbon steel.

Induced eddy currents flow perpendicular to the scan direction. They are forced to dive under cracks they meet. The generated liftoff signal is horizontal and crack-like defects are 90° with an vertical amplitude proportional to the defect's depth.



## Weld Probe Specifications

	SHARCK-BW053-G2-R-N05S SHARCK-BW053-G2-E-N05S
Casing	Medium
Coverage	53 mm (2.1 in)
Fingers	22 (11 × 2 rows)
Minimum number of required channels	64
Encoder	Built-in, IP68 rated, 20.53 counts/mm
Cable	Standard, 5 m (16.4 ft)
Maximum surface temperature	100 °C (212 °F)
Minimum pipe diameter for circumferential weld scan	25.4 cm (10 in)
Minimum pipe diameter for axial weld scan	40.6 cm (16 in)

## Pencil Probe Specifications

	SHARCK-PEN-ST-N05TE SHARCK-PEN-ST-N05TR	SHARCK-PEN-RA-N05TE SHARCK-PEN-RA-N05TR
Casing	Straight	Right angle
Coverage	Approximately 7 mm (0.3 in) at -6 dB	
Finger	1	
Minimum number of required channels	32	
Cable	Standard, 5 m (16.4 ft)	
Maximum surface temperature	100 °C (212 °F)	

## Performance

Item	Value	Note
Minimum detectable longitudinal crack length	3 mm (0.12 in)	Results may vary according to crack location, liftoff, etc.
Minimum detectable longitudinal crack depth	0.5 mm (0.02 in)	Results may vary according to crack location, liftoff, etc.
Maximum measurable crack depth	7 mm (0.28 in)	Typical, with good accuracy, but can detect deeper cracks
Length sizing accuracy	±2 mm (0.08 in)	Typical when using 0.5 mm (0.02 in) scan resolution
Depth sizing accuracy	±10–20 %	Depending on weld conditions
Scan speed	Up to 200 mm/s (7.9 in/s)	With full data recording
Liftoff tolerance	Up to 3 mm (0.12 in)	Non-conductive coatings and paints, with monitoring and auto-correction
Materials	Wide variety of carbon steels	Tested on: <ul style="list-style-type: none"> <li>• AISI 1018, 1020, 1045, 1117, 4140</li> <li>• SA516, 537, 387</li> <li>• API 2W60</li> <li>• ABS A131</li> <li>• Others</li> </ul>

