EDDYFI FILLET WELD SHARCK

Fast Inspection of Surface-Breaking Cracks Without Surface Preparation

Eddyfi Technologies

FILLET WELD MYSTERIES UNRAVELED

TECA technology incorporates coils that yield a very specific eddy current signal for surface-breaking cracks in carbon steel. This Sharck probe is specifically engineered to look for them in fillet welds.

BENEFITS AND FEATURES
Ergonomic design
Embedded control buttons
Detection and sizing of cracks with tangential ECA (TECA) technology
Designed for 90° fillet welds
Independent spring-loaded fingers enable easy calibration and 30° / 45° / 60° weld cap inspection
Robust and durable
High-precision encoder for easy flaw positioning
Compatible with Reddy® and Ectane®
Complies with ASTM E3052


Module at 0°


Module at 30°


Module at 45°

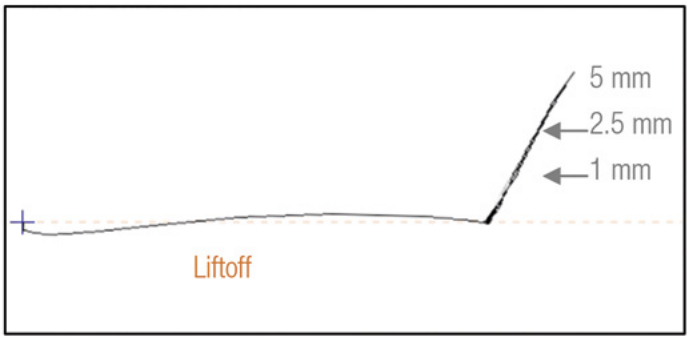

Module at 60°

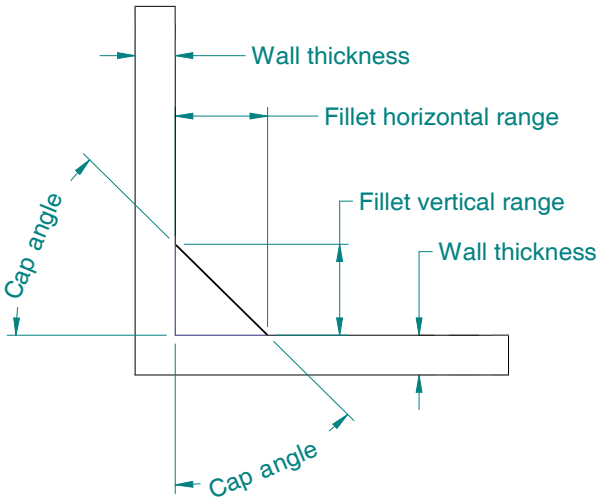
This probe engineered for fillet welds packages the innovative Sharck technology and TECA performance into a clever design. The probe's robustness makes it a perfect addition to the Sharck family of probes, covering an ever-expanding range of welds. Thanks to its mobile, modular elements, you can easily calibrate Sharck, while being able to adjust for the cap angle (30°, 45°, 60°).

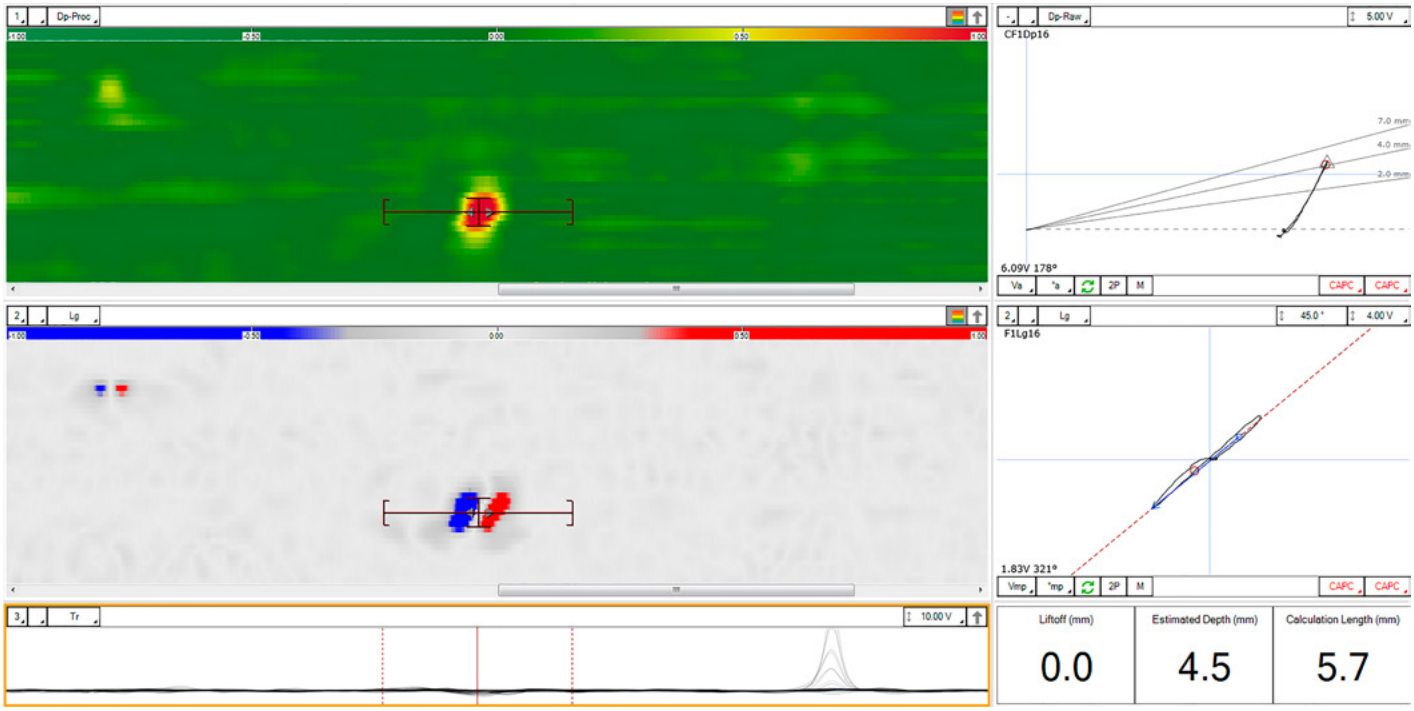
TECA TECHNOLOGY

The 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 direction of a scan. They are forced to dive under cracks they meet. The generated liftoff signal is horizontal and crack-like defects are 90° with a vertical amplitude proportional to a defect's depth.




Wall thickness
Fillet horizontal range
Fillet vertical range
Wall thickness
Cap angle
Cap angle


Dp-Proc
Dp-Raw
CF1Dp16
6.09V 178°
Lg
F1Lg16
1.83V 321°
Tr
Liftoff (mm)
0.0
Estimated Depth (mm)
4.5
Calculation Length (mm)
5.7

SPECIFICATIONS

SHARCK-FW028-G2-R-N05S & SHARCK-FW028-G2-E-N05S	
Casing	Medium
Coverage	28 mm (1.10 in)
Fillet range	12.4–23.0 mm (0.50–0.91 in)
Fingers	12 (6 on cap, 6 on HAZ)
Minimum required channels	32

(CONT.)	
Encoder	Built-in, IP68 rated, 25.463 counts/mm
Cable	5 m (16.4 ft)
Maximum surface temperature	100 °C (212 °F)
Minimum weld curvature	31.8 cm (15 in) concave and convex

PERFORMANCE

ITEM	VALUE	NOTES
Minimum detectable longitudinal crack length	3.0 mm (0.12 in)	Results may vary according to crack location, liftoff, etc.
Minimum detectable longitudinal crack depth	0.5 mm (0.02 in)	
Maximum measurable crack depth	7.0 mm (0.28 in)	Typical, with good accuracy, but can detect deeper cracks
Length sizing accuracy	±2.0 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 (7.87 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: • AISI 1018, 1020, 1045, 1117, 4140 • SA516, 537, 387 • API 2W60 • ABS A131 • Others

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Eddyfi Technologies
Beyond current