

1.3.3. TOFD, PHASED ARRAY TECHNIQUE FOR THE DETECTION OF SMALL TRANSVERSE CRACK IN 300 mm THICKNESS WELDS IN CuMoVn STEEL

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The increased demand in heavy wall thickness pressure vessel up to 340 mm for the petrochemical industry has moved the engineering to choose steel with higher strength.

To achieve this goal Vanadium has been added to the standard 387Cr22 steel. This small amount of Vanadium has drastically increased the micro crack probability of the welds before and after stress relieving.

More than one manufacturer has been involved in this phenomena. The paper present the ultrasonic procedure with TOFD and Phased Array to detect such indications.

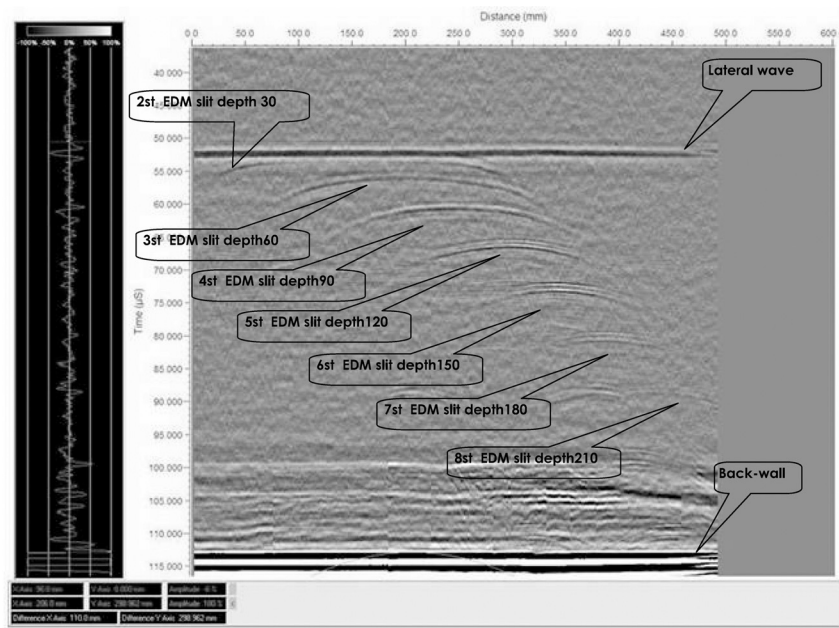


Fig. 1. Tofd Images of 3°–4°–5°–6°–7° Slit with channel 3 45° 2.2 Mhz Ø24 mm

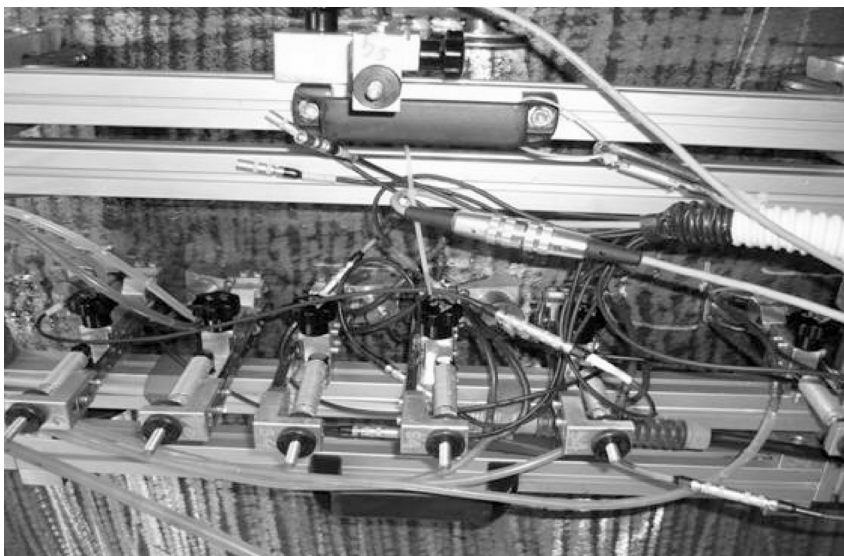


Fig. 2. Example of scanner during parallel scanning on 300 mm welds for reheat cracks detection