



KEMM
KAYNAK EĞİTİM VE MUAYENE MERKEZİ

NDT GÜNLERİ
“XII. Kaynak Kongresine Giderken”
9 Ekim 2021 Cumartesi / BAÖB Yerleşkesi - BURSA

RÜZGAR TÜRBİNLERİNDE GELİŞMİŞ ULTRASONİK MUAYENE (Phased Array / TOFD) UYGULAMALARI

UN Ultrasonik **NDT**

Ali Ufuk NOYAN

Metalürji Yüksek Mühendisi

EN ISO 9712 NDT Level 3

(UT, RT, ET, MT, PT)

Ultrasonik NDT Kalite Kontrol Cihazları ve Hizmetleri A.Ş.

Rüzgar Türbinleri Temel Bileşenleri



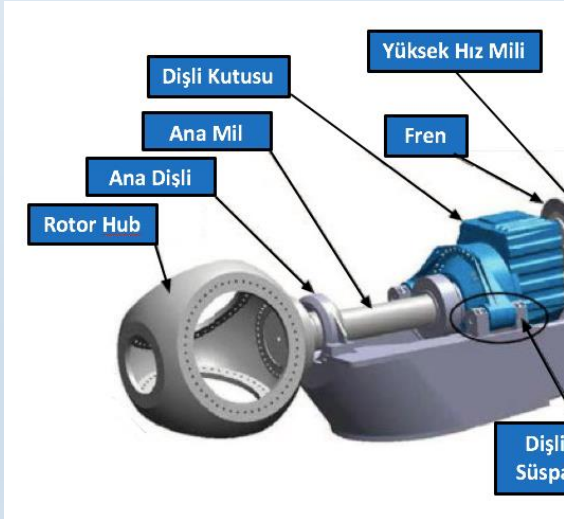
Ultrasonik NDT



Kompozit Kanat

Makine Bölümü (Nacelle)

Kule



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Phased Array Ultrasonik Muayene Yapılan Temel Bileşenler

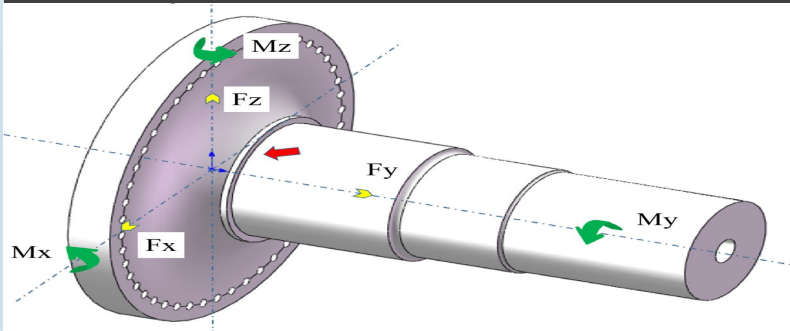
Kompozit Kanat



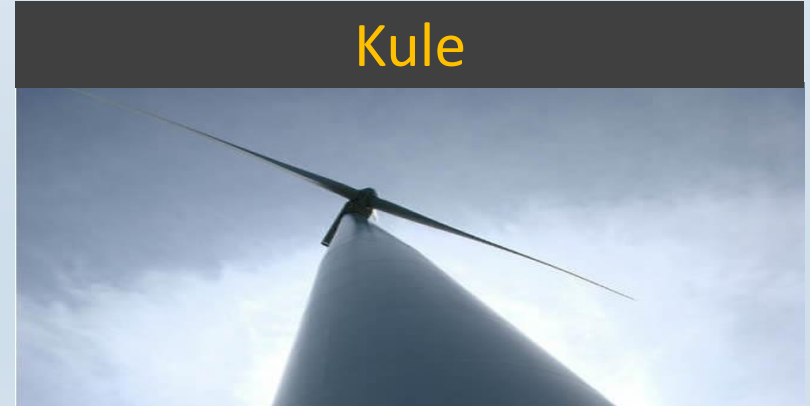
Civata ve Saplama



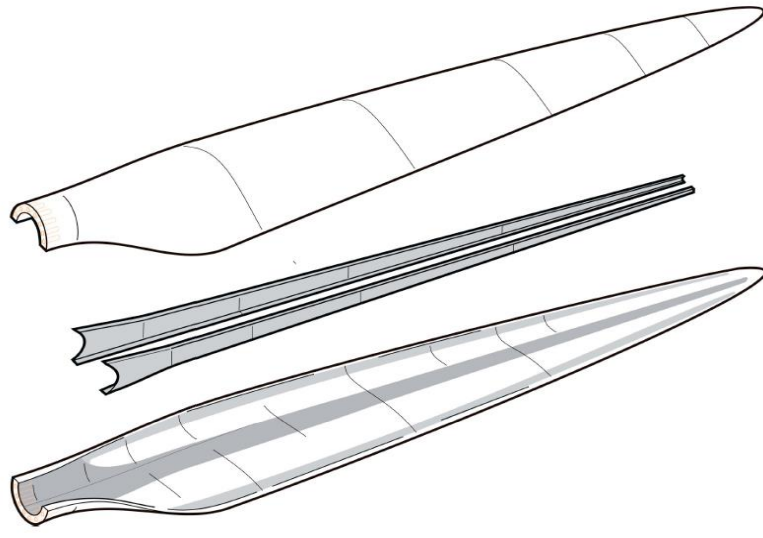
Rotor Ana Mili (Shaft)



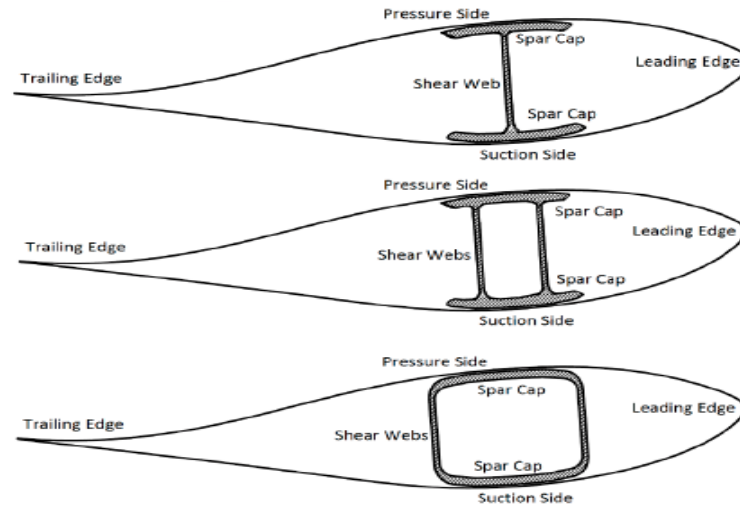
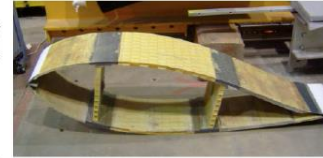
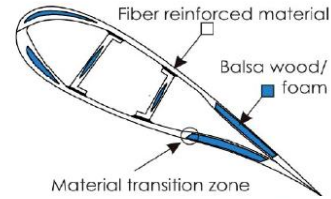
Kule



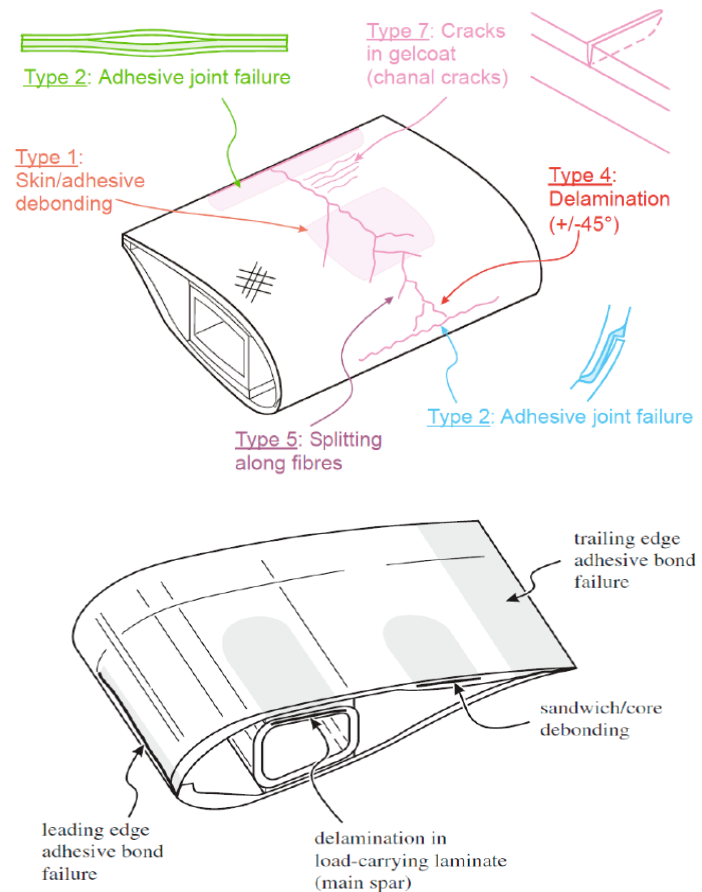
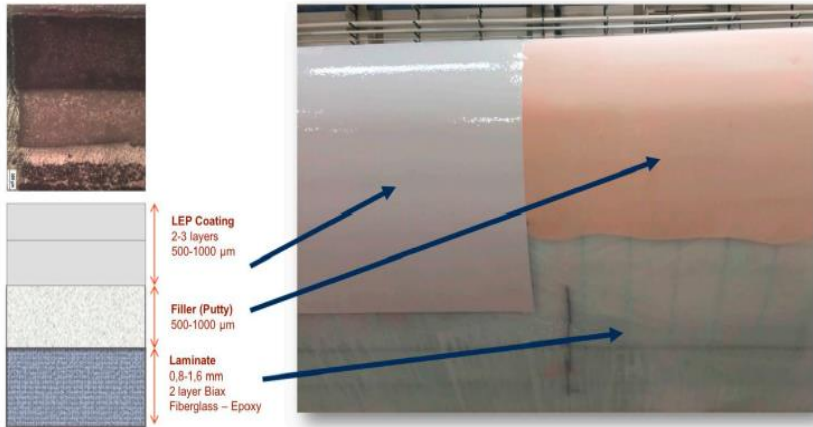
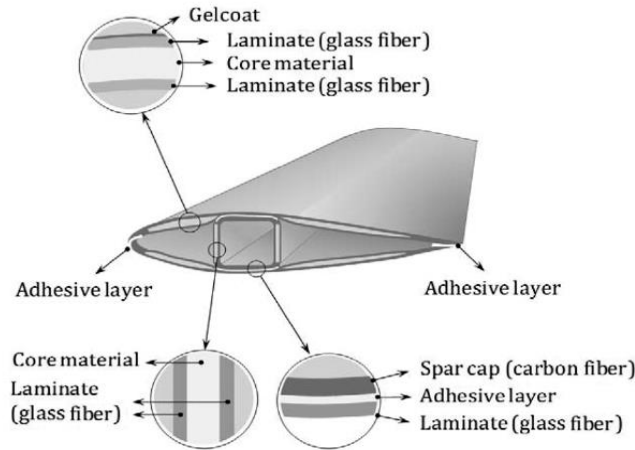
Kompozit Kanatlarda Phased Array Ultrasonik Muayene Uygulaması



Generic blade cross section

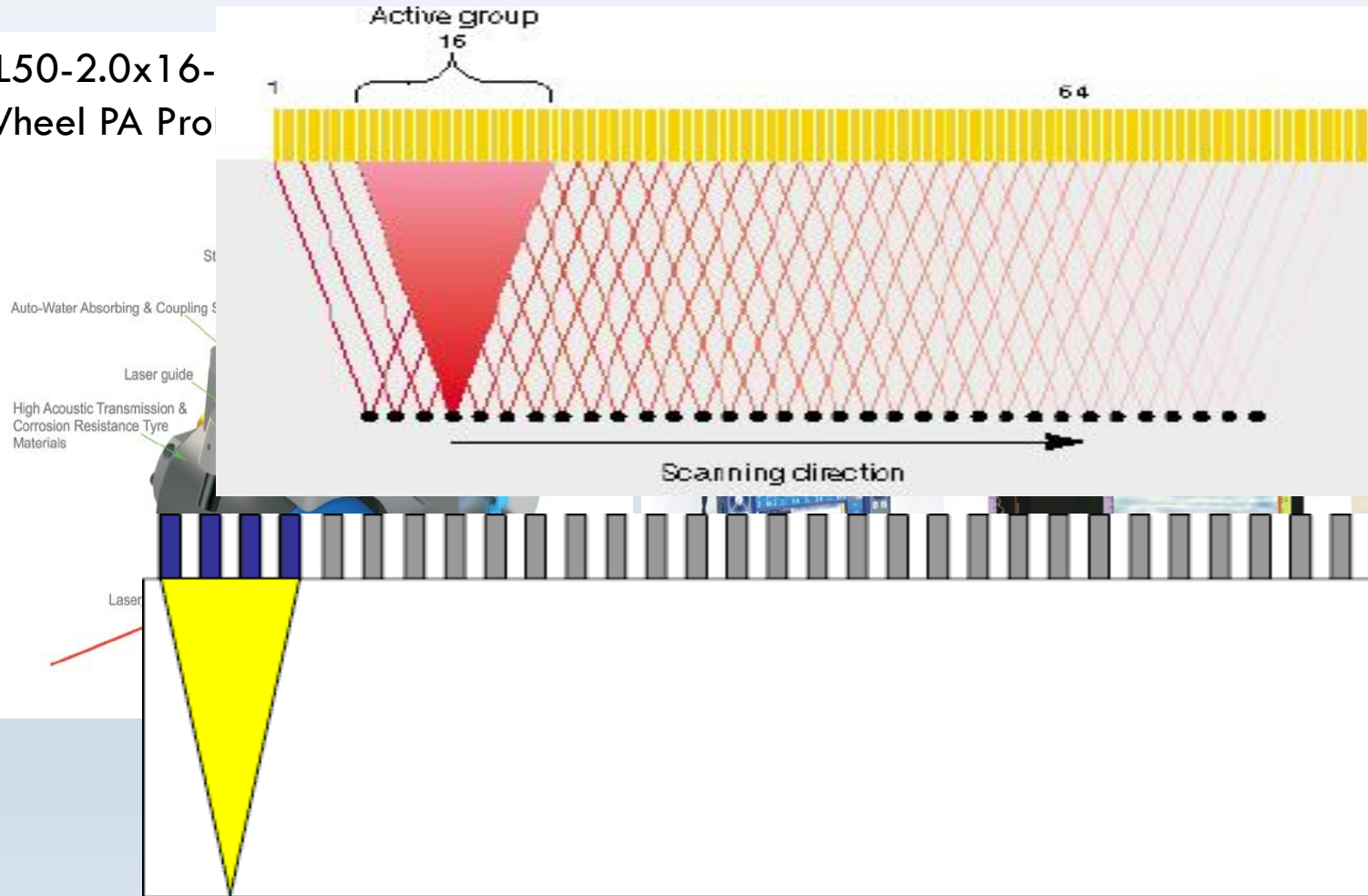


Kompozit Kanatlarda Phased Array Ultrasonik Muayene Uygulaması

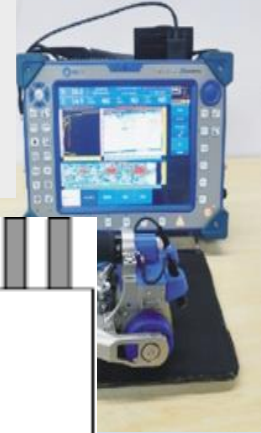


Kompozit Kanatlarda Phased Array Ultrasonik Muayene Uygulaması

1L50-2.0x16-
Wheel PA Pro



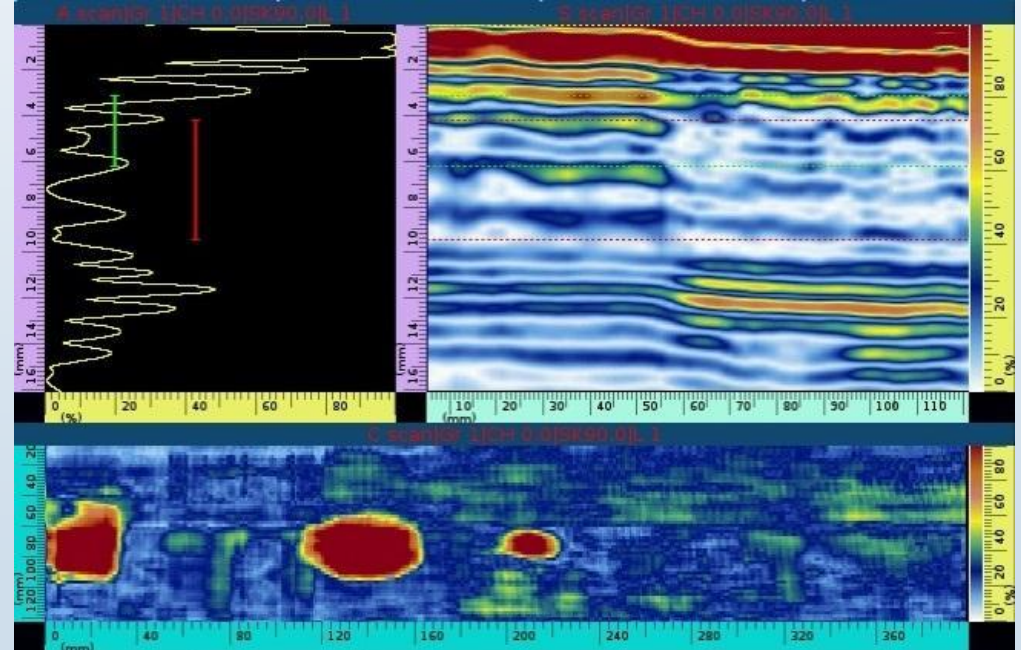
NDT



Kompozit Kanatlarda Phased Array Ultrasonik Muayene Uygulaması



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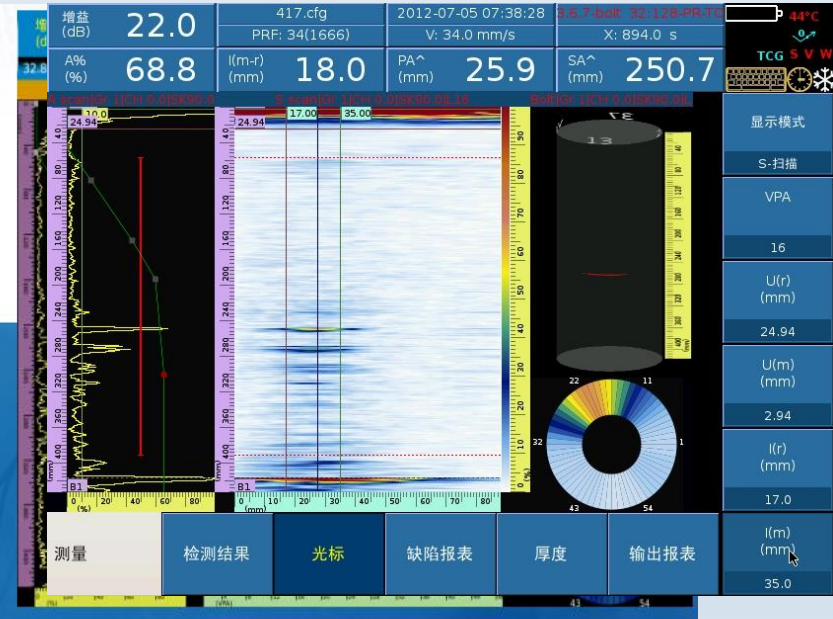
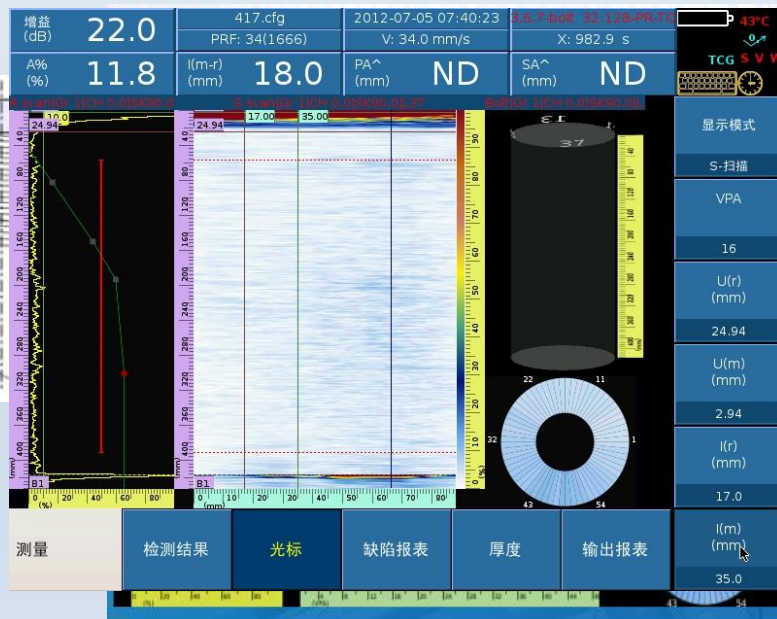
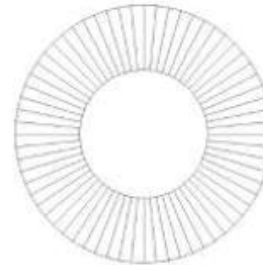
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Cıvata ve Saplamlar için Phased Array Ultrasonik Muayene Uygulaması



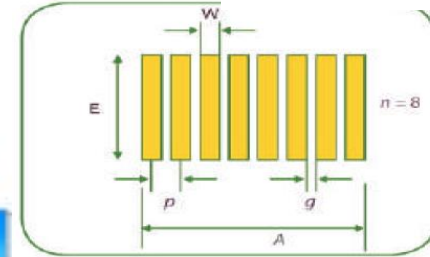
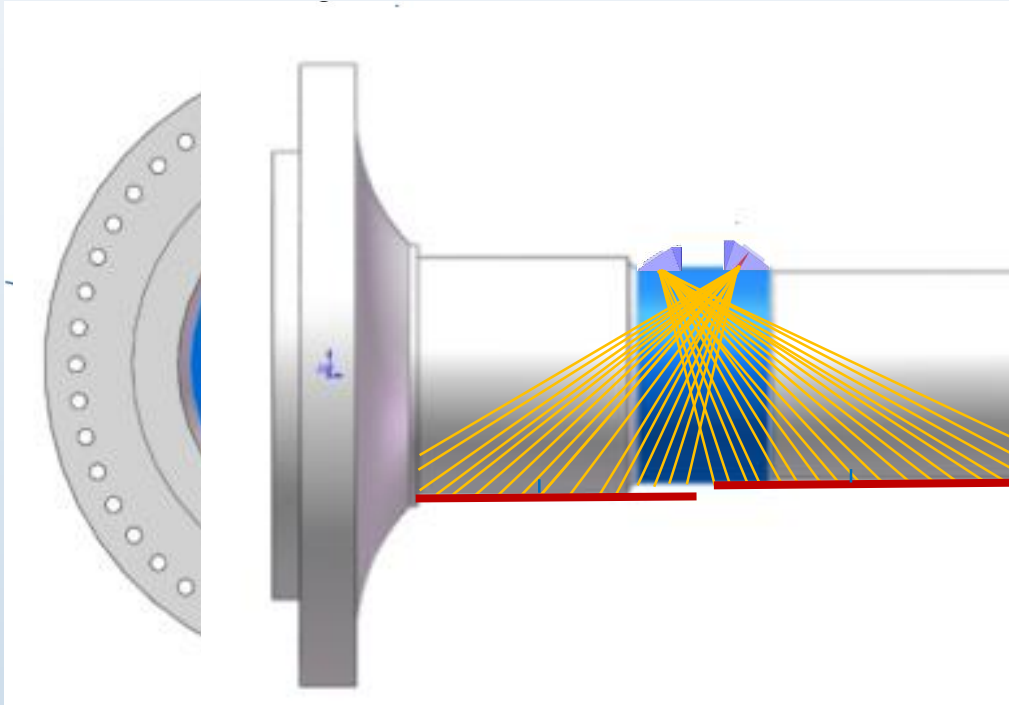
Özel Hollow Ring Dairesel Linear Phased Array Probu



Rotor Ana Milin (Shaft) Phased Array Ultrasonik Muayene Uygulaması



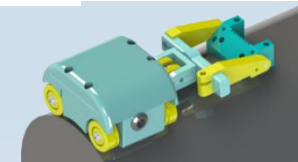
Ultrasonik NDT



2.25L32-1.0*20-D6

- 2.25 Mhz
- 32 Element
- 1 mm Element Adımı
- 20 mm Element Uzunluğu

MOS 01 TARAYICISI



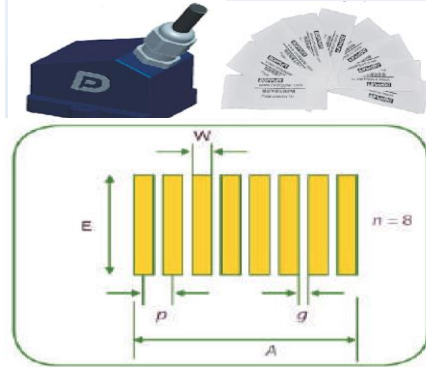
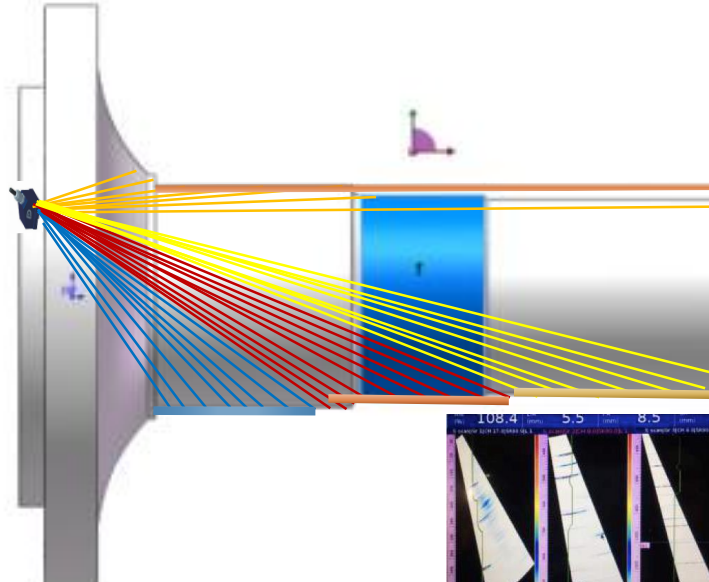
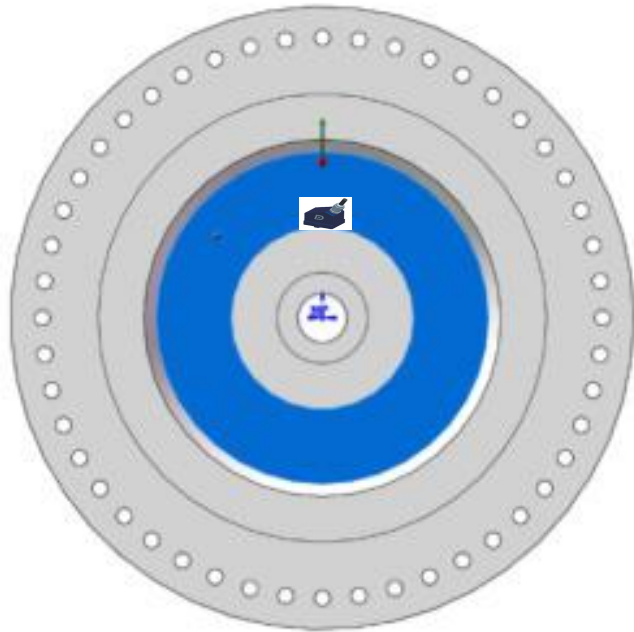
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Rotor Ana Milin (Shaft) Phased Array Ultrasonik Muayene Uygulaması



Ultrasonik NDT



2.25L32-1.0*20-D6

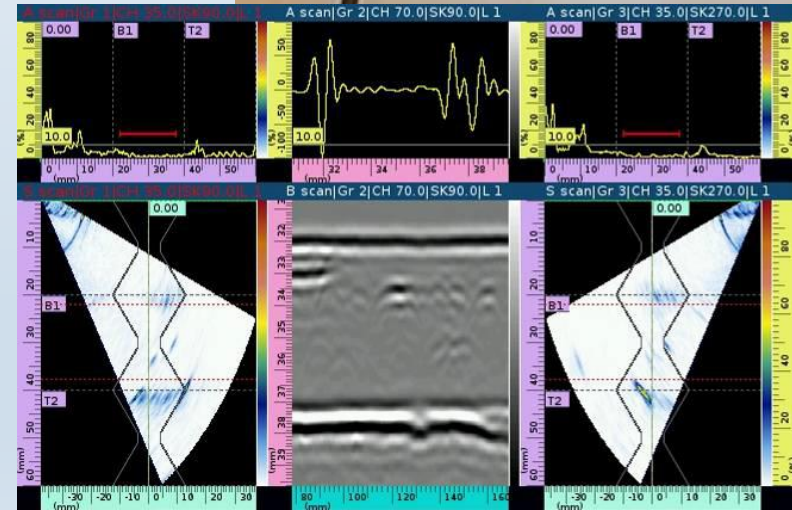
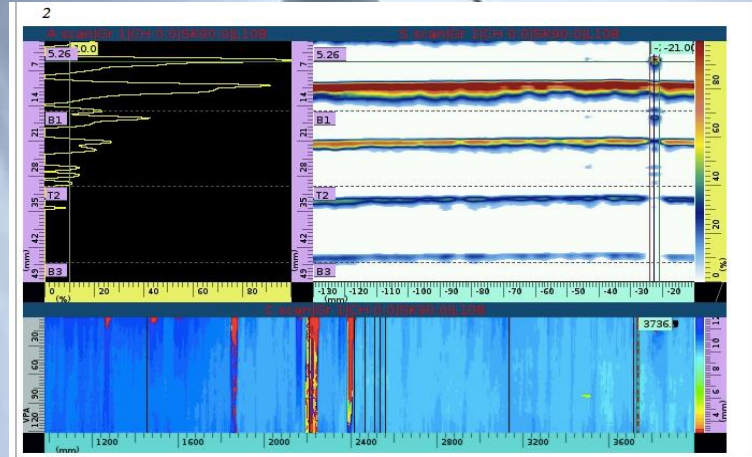
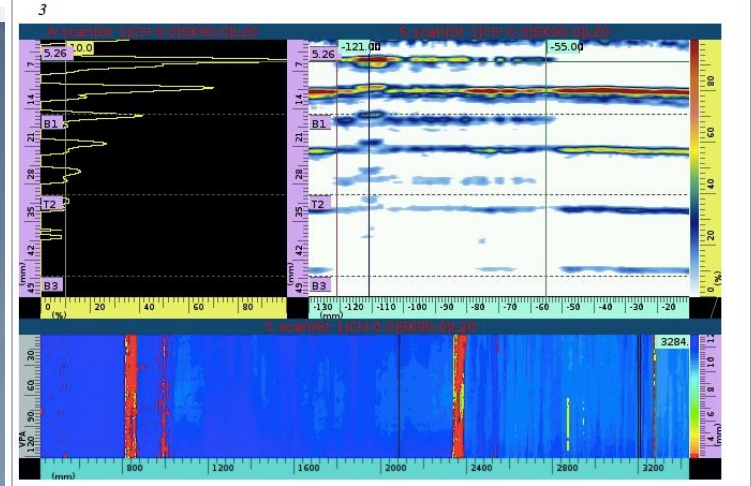
- 2.25 Mhz
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Kulede Motorize Phased Array / TOFD Ultrasonik Muayene Uygulaması





TEŞEKKÜR EDERİM