

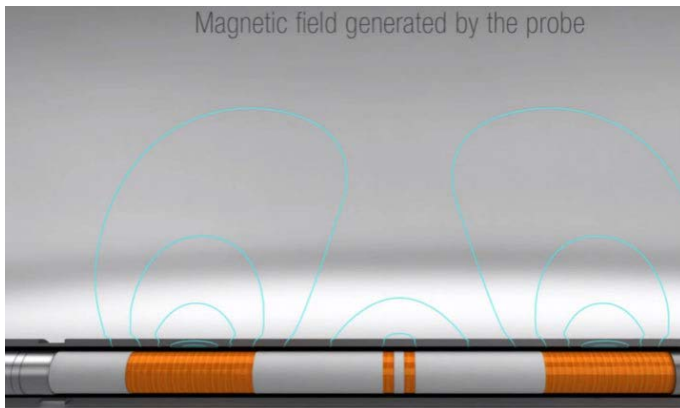
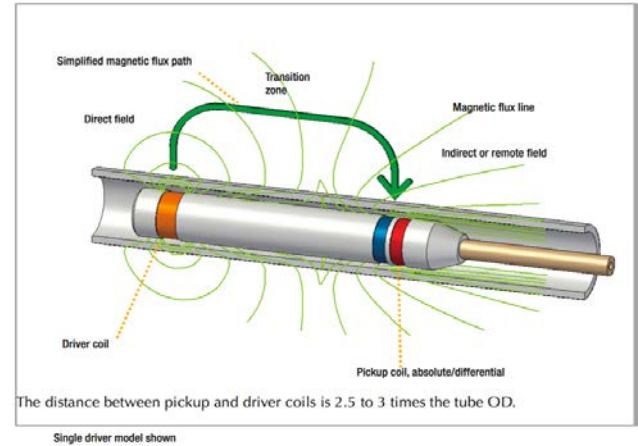
# REMOTE FIELD TESTING



**TOMTEC NDT MARINE SERVICES PTE LTD**

REMOTE FIELD TESTING (RFT) is an electromagnetic examination, which utilizes a through-transmission process. The resultant field is affected by either ID or OD tube wall anomalies. RFT signal measurements are made a few tube diameters away from the excitation coil without any attempt at tube wall magnetization or saturation. A pair of pick-up coils located in the remote field zone measures the resultant field to give both a differential and an absolute signal. The signal phase and amplitude information are used to determine defect depth and volume.

The remote field probe is a low-frequency variant of the exciter (driver)-pickup eddy current probe, which is characterized by an exciter-pickup distance of at least 2.5 to 3 times the tube OD. This distance is essential and critical for the pickup coils to be able to sense the "remote" magnetic field rather than the "direct" field.



Remote Field is a technique used for the inspection of tubes made of ferrous materials, like Carbon steel and Chrome-Molybdenum. RFT is only one of the techniques available for inspection of carbon steel tubes. Since all inspection techniques that are available for carbon steel have limitations compared to conventional eddy current, it is even more important to select the most suitable technique for each different situation. For the inspection of carbon steel tubes, it is often recommended to use a combination of one or more techniques.

This inspection technique detects and sizes wall thinning caused by corrosion, erosion, wear, pitting, and baffle cuts. Overall wall-loss can be easily detected and accurately quantified. Local defects can be detected and quantified provided that they have some volume (diameter pit > 5 mm). RFT can detect both internal and external defects but it is not possible to distinguish between them.

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## Advantages

- ✓ Suitable for ferromagnetic materials
- ✓ Overall wall-loss and local defects can be detected and quantified.
- ✓ Accurate sizing of defects possible
- ✓ Possible to detect volumetric defects under support plates
- ✓ Fill factor not so critical which makes cleanliness less critical
- ✓ Very big tube diameters can be examined
- ✓ Equal sensitivity to wall thickness variations
- ✓ RFT can detect ID and OD indications with the same sensitivity
- ✓ RFT can be used on ferromagnetic materials where ECT has limitations
- ✓ Can be used with lesser fill factors than ECT
- ✓ Requires no contact with the test subject
- ✓ Portable and flexible probes
- ✓ Large area of testing coverage



At TOMTEC, we ensure that all our technicians are competent and certified to internationally recognized standards. TOMTEC performs Remote Field Testing (RFT) to provide you with an accurate assessment of the condition of your assets.

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