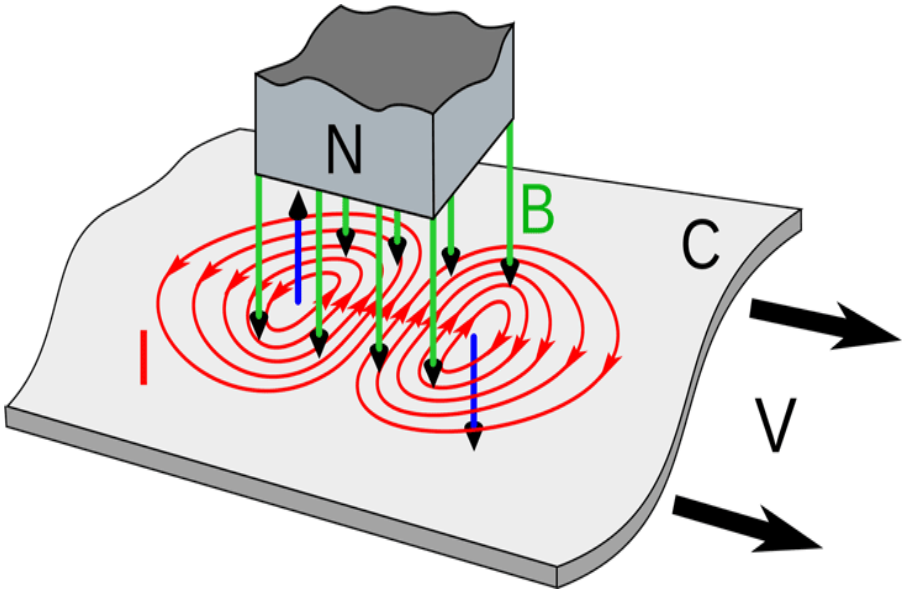
Eddy Current Testing

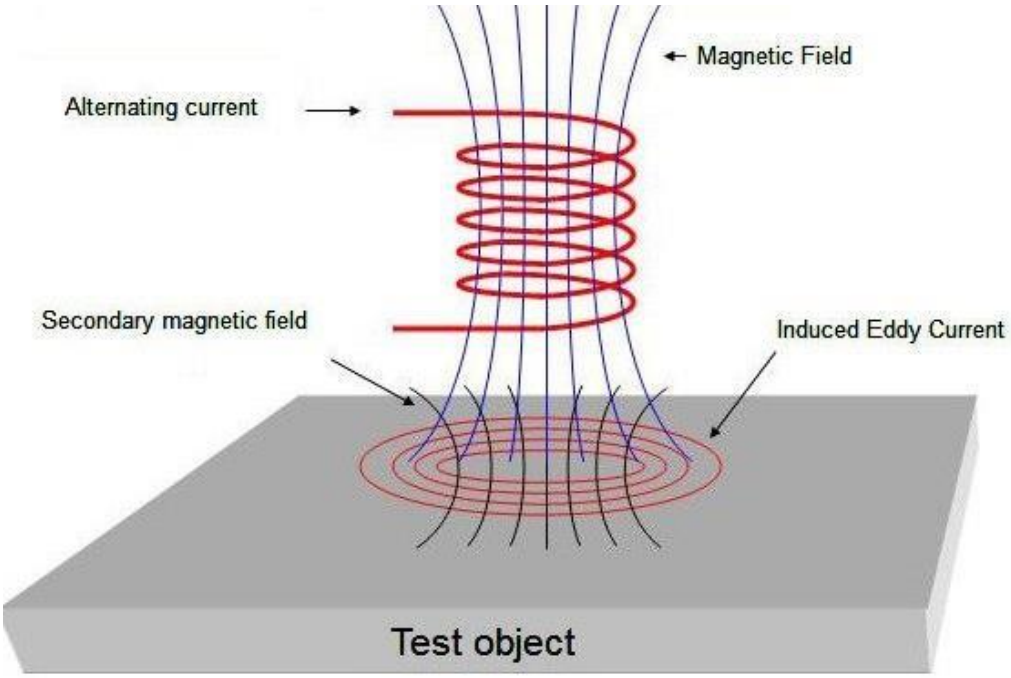
Eddy current array (ECA) is a nondestructive testing technology that provides the ability to electronically drive multiple eddy current coils, which are placed side by side in the same probe assembly.

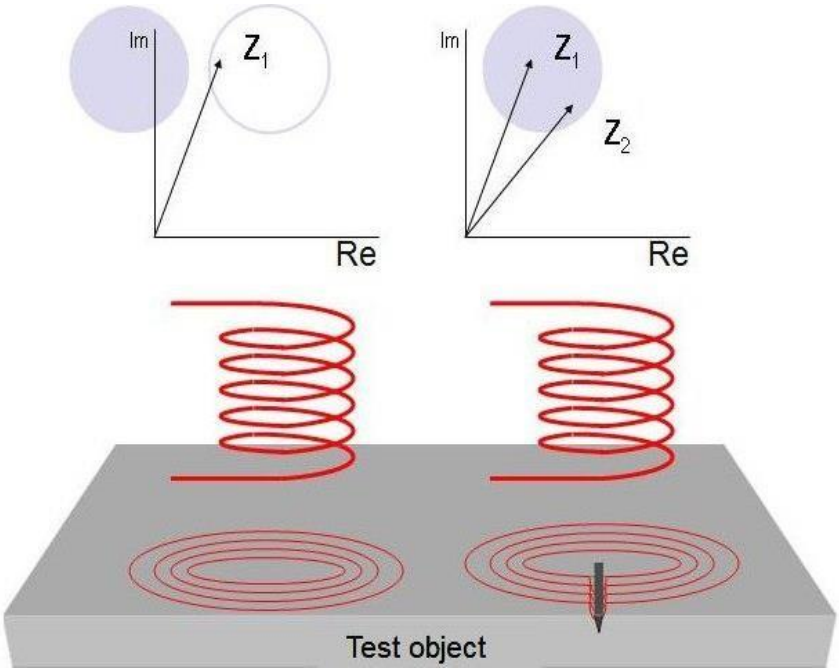


Eddy current (EC) testing is a no contact method for the inspection of metallic parts. Eddy currents are fields of alternating magnetic current that are created when an alternating electric current is passed through one or more coils in a probe assembly.

When the probe is linked with the part under inspection, the alternating magnetic field induces eddy currents in the test part. Discontinuities or property variations in the test part change the flow of the eddy current and are detected by the probe in order to make material thickness measurements or to detect defects such as cracks and corrosion.

The probe technology and data processing have advanced to the point where eddy current testing is recognized as being fast, simple, and accurate.





Uses: The technology is now widely used in the aerospace, automotive, petrochemical, and power generation industries for the detection of surface or near-surface defects in materials such as aluminum, stainless steel, copper, titanium, brass, Inconel®, and even carbon steel (surface defects only).

Advantages:

- A larger area can be scanned in a single-probe pass, while maintaining a high resolution.
- Less need for complex robotics to move the probe; a simple manual scan is often enough.
- C-scan imaging improves flaw detection and sizing.
- Complex shapes can be inspected using probes customized to the profile of the part being inspected.