



Fortress Metal Detectors



METAL DETECTION - THE BASICS
DETECTOR SENSITIVITY

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METAL DETECTION - THE BASIC PRINCIPLES

Sensitivity

The *theoretical* sensitivity of a given metal detector is determined by the aperture size. The smaller the aperture, the smaller the piece of metal that can be detected (figure 5).

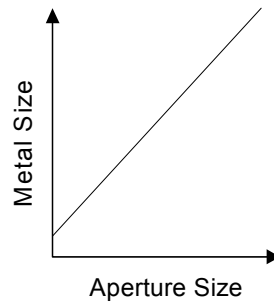


Figure 5

The smaller dimension of rectangular apertures is used to calculate the sensitivity, although the length also contributes.

To maximise sensitivity a detector the smallest size aperture should be selected. However there are some exceptions:

- Metalized Film
- Oxygen Scavengers
- Highly Conductive product (large blocks of cheese)

Product effect, metal free area, type and orientation of contaminant and other factors can affect the *practical* sensitivity in any application.

The position in the aperture also affects the sensitivity (see figure 6 & 7).

The centre line axis (3) is the least sensitive point and therefore this is where performance testing should take place. As metal gets closer to the sides and coils (1 & 2), the signal it generates gets larger, making it easier to detect.

Regular testing of the detector should be done so that the test ball passes close to the centre of the aperture. If this is not easily done, then a consistent position should be used so that the test results will be consistent

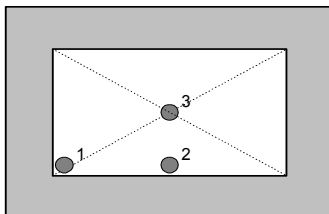


Figure 6

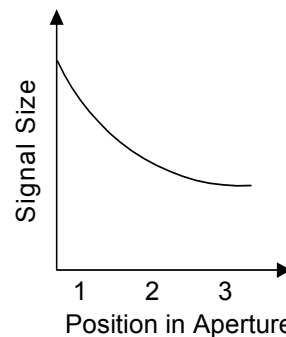


Figure 7