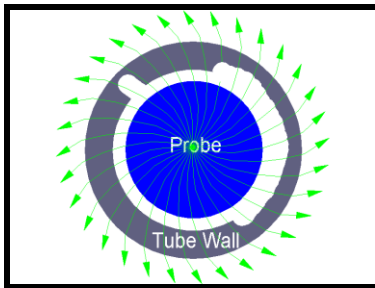


At Carbon Steel Inspection, Inc. we are often asked to provide a general background description of the Eddy Current Array Probe Technology we offer at CSI. This tech brief strives to maintain a clear and defined technical description of the Array method.

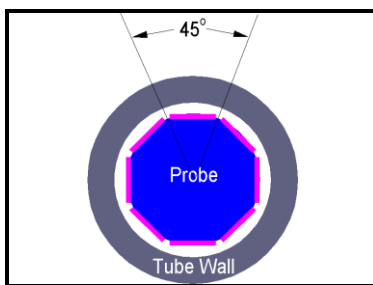
## ECT BOBBIN PROBE DISADVANTAGES

- \* **Averages** the signals over the 360° circumference.
- \* **Vector Addition** of multiple defects.
- \* **Limited Defect Morphology** along the circumferential extent.



## ECT ARRAY PROBE ADVANTAGES

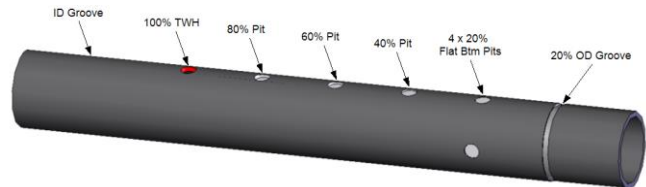
- \* **Segmented Coils** decreases the affects of averaging.
- \* **Increase** in signal to noise ratio.
- \* **Limits** the vector addition of multiple defects.
- \* **Provides** more detailed information on the circumferential extent defect morphology.



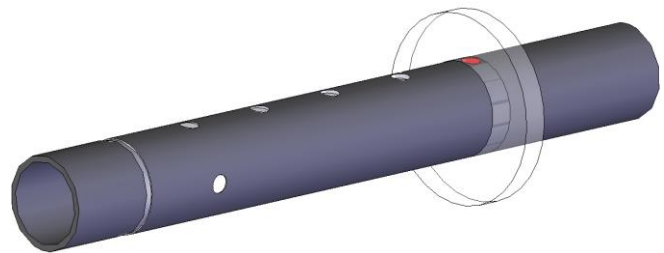
## ARRAY TECHNOLOGY ADVANTAGES

- \* Decreased sensitivity on tube supports.
- \* Determines if a defect is 180° or 360° in nature.
- \* Probes for both ferrous and non-ferrous materials.
- \* Array probes also include bobbin coils.
- \* There is increased sensitivity to heat treat variances.

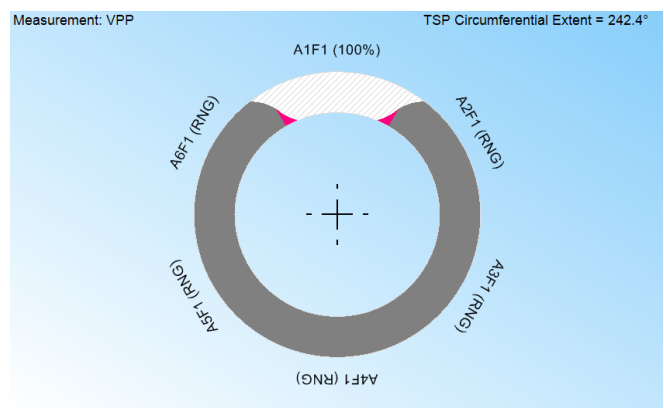
## ASME CALIBRATION STANDARD



## TUBE SUPPORT RING POSITIONED OVER A THROUGH WALL HOLE (TWH)



## ECT ARRAY ANALYSIS TUBE END VIEW (TSP OVER TWH)

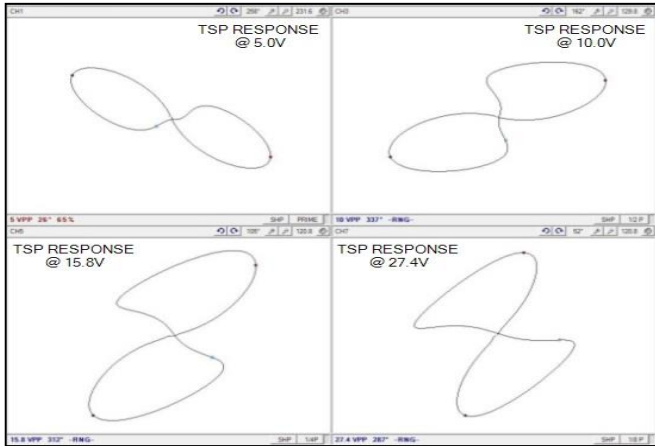


\* *The reverse side compares actual bobbin and array data with a tube support over a through wall hole.*

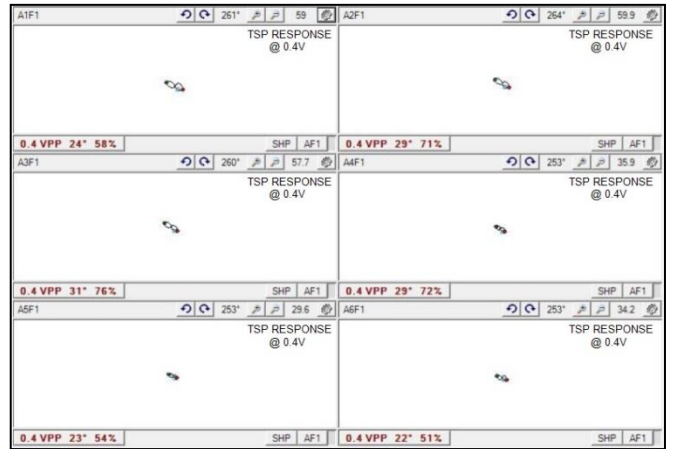
By:  
Gary Kroner

# BOBBIN VS ARRAY ANALYSIS SCREEN DUMPS

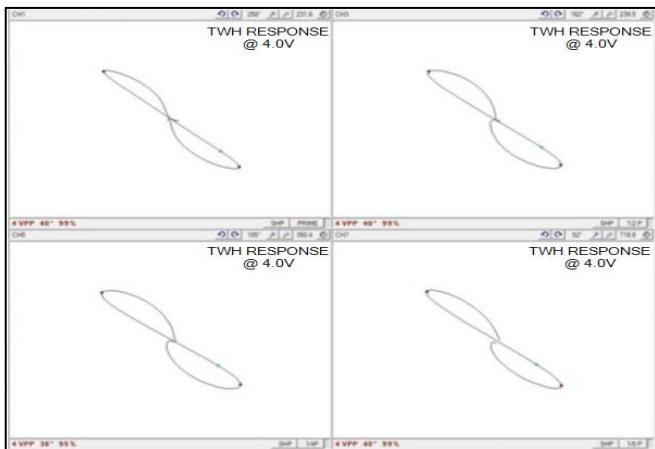
## BOBBIN TSP RESPONSE



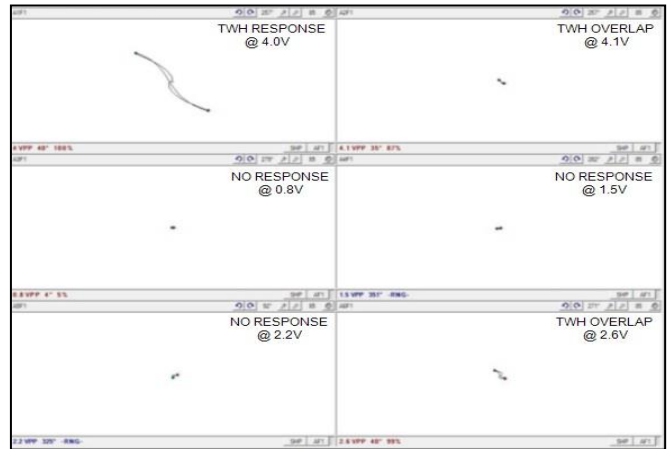
## ARRAY TSP RESPONSE



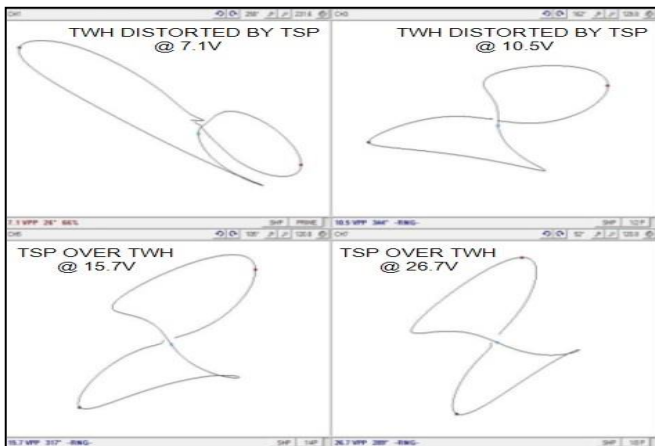
## BOBBIN TWH RESPONSE



## ARRAY TWH RESPONSE



## BOBBIN TSP OVER TWH RESPONSE



## ARRAY TSP OVER TWH RESPONSE

