

# MPI REFERENCE BLOCKS

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## Magnetic Particle Performance Checks

Reference blocks are used for assessing the performance of magnetic particle processes. Johnson & Allen supply a range of commonly used reference blocks that can be used to measure and or compare different consumables, current settings and MPI techniques. Reference blocks are components with known defects. When a defect is found it verifies that a given inspection setup and procedure is suitable for finding similarly sized and positioned defects in other components.

### Key Features

Reference Blocks	1 and 2
Test Ring	AS 5282
MPI Test Bar	Center Line Crack Test Piece



### Reference Block 1

**Description:** Description: MPI Reference Block 1 sometimes called a MTU-3 Test Piece or Comparator Test Piece is made by quenching a steel block coated with a Chrome surface - The hard Chrome surface cracks when rapidly cooled forming a test pieces covered in natural discontinuities on both sides. Reference Block 1 has a variety of indications ranging from small to large. Can be supplied with a photo showing indications for a small additional cost.



### AS 5282 Test Ring

**Description:** The AS 5282 Test Ring formerly known as the Ketos Test Ring is a quick test method for ensuring an MPI process is suitable for detecting a type of defect. The AS 5282 Ring consists of a ring with a series of drilled holes in different positions. The holes closest to the outer circumference simulate shallow defects while the holes closest to the centre of the ring simulate deep sub-surface discontinuities which would typically only be found using a DC current.



### Reference Block 2

**Description:** Reference Block Type 2 sometimes called a Temoin C Test Piece consists of steel bar with a scale machined into its face with 2 permanent magnets on either end. The scale is calibrated such that the +4 mark represents a magnetic field with a strength of +100 A/m and the -4 mark represents -100 A/m. Indication lengths give a measure of a consumable's performance with longer indications been a measure of good performance and shorter indications suggesting poor consumable performance.



### MPI Test Bar

**Description:** The MPI Test Bar sometimes called a Center Line Crack Test Piece is used to establish field direction and determine adequate current levels using AC or DC current when using MPI bench units. The bar contains both fine and coarse defects, surface and subsurface defects and longitudinal and transverse indications. This bar may be used to determine that a MPI procedure has the ability to detect a 1/16 inch long by .006 inch wide by .01 inch deep notch (maximum dimension) oriented 90 degrees to the magnetic flux.

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