

ASTM Yoke Test Block – Magnetic Particle Testing

Description:

The ASTM Yoke Test Block is a specialized tool designed to verify the performance and effectiveness of magnetic particle testing (MPT) yokes. It serves as an essential reference standard for evaluating magnetization strength and flaw detection capability in various industrial and military applications.



This test block features **seven artificial flaws (side-drilled holes)** of varying depths, simulating subsurface defects to ensure reliable and repeatable test results. It is **compact, portable, and suitable for onsite inspections**, making it a valuable asset in non-destructive testing (NDT) environments.

The ASTM Yoke Test Block is commonly referred to as an **MPT Test Bar** and is used to verify proper yoke function under both AC and DC magnetization conditions:

- **AC Yoke Testing:** A minimum of **three visible lines** must be detected.
- **DC Yoke Testing:** A minimum of **five visible lines** must be observed.

This test block is designed to meet or exceed **industrial and military standards for artificial test specimens**, ensuring accuracy and consistency in magnetic particle inspection (MPI) applications.

ASTM Yoke Test Block – Data Sheet:

Parameter	Specification
Material	High-quality ferromagnetic steel
Artificial Flaws	7 side-drilled holes (coarse & fine defects)
Standard Compliance	Meets ASTM & MIL specifications for artificial test specimens
Magnetization Verification	AC: Minimum 3 visible lines; DC: Minimum 5 visible lines
Inspection Media Compatibility	Fluorescent & non-fluorescent magnetic particles
Applications	Performance verification of MPI yokes
Usage	Suitable for field & laboratory testing
Portability	Compact & easy to transport

Application Method:

1. **Position the Yoke Test Block** on a flat surface within the inspection area.
2. **Apply the magnetic particle inspection (MPI) medium**, ensuring full coverage over the block.
3. **Activate the yoke** to generate a magnetic field.
4. **Observe the flaw indications:**

- For **AC yokes**, at least three lines must be visible.
 - For **DC yokes**, at least five lines must be visible.
5. **Adjust testing parameters** if necessary and compare results with reference standards.

This ASTM Yoke Test Block ensures **accurate, repeatable, and efficient verification of yoke magnetization strength**, making it an essential tool for magnetic particle inspection professionals.