Pie Gauge:

Product Description:

The **Pie Gauge** is a simple yet highly effective tool used in **Magnetic Particle Inspection (MPI)** to **determine the direction of magnetic flux** on a test surface. It consists of **eight ferrous metal segments** arranged in a **star pattern**, separated by non-ferrous material, which creates **artificial discontinuities**. These discontinuities help inspectors quickly assess the **orientation and effectiveness of magnetic field distribution** during an MPI test.

This gauge is **commonly used with dry powders** and is ideal for **yoke inspections**. It can be positioned at **any angle** and provides **clear indications at right angles (perpendicular) to the applied magnetic flux**, helping operators ensure optimal flaw detection.

Key Features:

✅ **Detects Magnetic Flux Direction** – Helps verify proper field orientation for effective MPI testing.

✅ **Eight Linear Discontinuities** – Provides **indications in all directions** to assess field strength.

✅ **Non-Ferrous Handle with Pivot** – Allows for **easy positioning and handling** during inspections.

✅ **Durable Construction** – Made from **high-quality ferrous materials** for

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repeated use.

✅ **Portable & Easy to Use** – Suitable for **field and laboratory applications**.

Technical Data Sheet:

Parameter	Specification
Material	High-Quality Ferrous Metal (Eight Segments) with Non-Ferrous Spacers
Shape	Circular Star Pattern (Pie Segments)
Diameter	**50mm – 150mm** (Standard Sizes Available)
Weight	**200g – 500g** (Depending on Size)
Discontinuities	**Eight Linear Non-Ferrous Gaps** for Indications in All Directions
Handle Type	**Non-Ferrous with Pivot** for Easy Handling
Application	Magnetic Particle Testing (MPI), Flux Direction Verification
Temperature Range	**-20°C to 80°C**
Surface Coating	Corrosion-Resistant Finish
Usage	Works with Dry & Wet MPI Testing
Compliance	ASTM E709, ASTM E1444, ASTM E3024, ASME Section V Article 7

Usage Instructions:

1. **Positioning** – Place the Pie Gauge flat on the surface to be inspected, with the **pie segments facing down**.
2. **Magnetization** – Apply a **magnetic field** using an **MPI yoke or coil**.
3. **Particle Application** – Disperse **magnetic particles** (dry or wet) over the surface.
4. **Observation** – Indications will form **along the non-ferrous discontinuities**, perpendicular to the applied magnetic field.
5. **Verification** – Adjust the magnetic field as necessary to ensure optimal sensitivity and coverage.

Applications:

- **Magnetic Particle Inspection (MPI) Testing**
- **Weld Inspection & Structural Testing**
- **Aerospace, Automotive, and Industrial NDT**
- **Yoke Inspections Using Dry Powder**
- **Routine Calibration & Field Strength Verification**