



How to Instructions

Magnetic Particle Inspection

GETTING STARTED

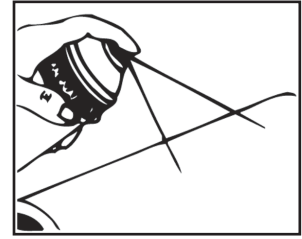
Magnetic materials are used for magnetic particle inspections (MPI) of ferrous parts. All these materials must be used along with a magnetizing device such as a yoke or coil. MPI methods easily detect surface cracks and can even detect some subsurface discontinuities. Visible indications appear when particles are attracted to magnetic leakage fields that occur whenever a flaw is present.

Wet method fluorescent magnetic materials, which must be used with a black light, can locate very fine surface flaws or slightly sub-surface discontinuities, such as inclusions, seams, shrink cracks, tears, laps, flakes, and grinding, quenching or fatigue cracks. A Model Y-1 AC yoke is recommended for wet method inspections.

Dry method visible magnetic materials, which do not require a black light, are more sensitive for finding sub-surface defects on components which have rough surfaces, such as large forgings and castings. A Model Y-7 AC-DC yoke is recommended for dry method inspections.

INSTRUCTIONS

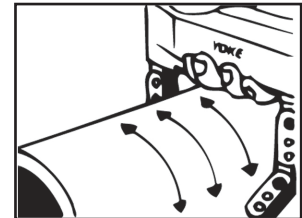
- 1. Cleaning** - Pre-clean the part or area to be inspected by coating with cleaner, allowing it to stay on the part long enough to dissolve dirt or film. Then, wipe the part with a clean cloth and allow to dry completely before proceeding. If necessary, repeat this procedure until the part is clean.



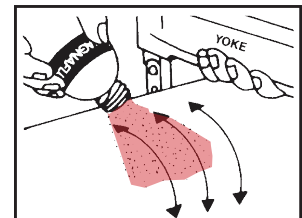
- 2. Position Yoke** - Place the appropriate yoke (Y-1 AC model for surface cracks, Y-7 AC/DC model for sub-surface cracks) on the part being tested so that the yoke is located perpendicular to the direction of suspected defects.



- 3. Energize Yoke** - When the yoke is energized, a magnetic field is formed in the test part.



- 4. Apply Magnetic Particles** - While the magnetic field is energized, apply the appropriate magnetic particles to the part being inspected. The particles can be in dry powder form or suspended in a liquid bath.



- 5. Inspect For Defects** - When magnetic particles are applied, indications of flaws will form immediately as the particles are drawn to magnetic leaks on the surface of the test part. With non-fluorescent particles, indications will be visible in normal light, but remember you'll need to view the part under a black light to see fluorescent particle indications .

