

Nondestructive Testing

Irreplaceable quality control tool.

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SGS MSi Testing and Engineering

NDT – Nondestructive Testing

NDE – Nondestructive Examination

NDI – Nondestructive Inspection

The American Society For Nondestructive Testing

DEFINITION

“Nondestructive testing (NDT) is the process of inspecting, testing, or evaluating materials, components or assemblies for discontinuities, or differences in characteristics without destroying the serviceability of the part or system.”

In other words, when the inspection or test is completed the part can still be used.

Modern nondestructive tests are used in manufacturing, fabrication and in-service inspections to ensure product integrity and reliability, to control manufacturing processes, lower production costs and to maintain a uniform quality level. During construction, NDT is used to ensure the quality of materials and joining processes during the fabrication and erection phases, and in-service NDT inspections are used to ensure that the products in use continue to have the integrity necessary to ensure their usefulness and the safety of the public.

1. Visual Testing (VT)

- most common nondestructive examination
- Direct Viewing or Assisted (mirrors, magnifying glasses, borescopes, microscopes, comparators, etc.)
- + low cost, easy to apply, quickly carried out
- limited to relatively large flaws, subsurface defects cannot be detected, misinterpretation of cosmetic discontinuities



















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AQUAZUNG

TransPac

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E-52

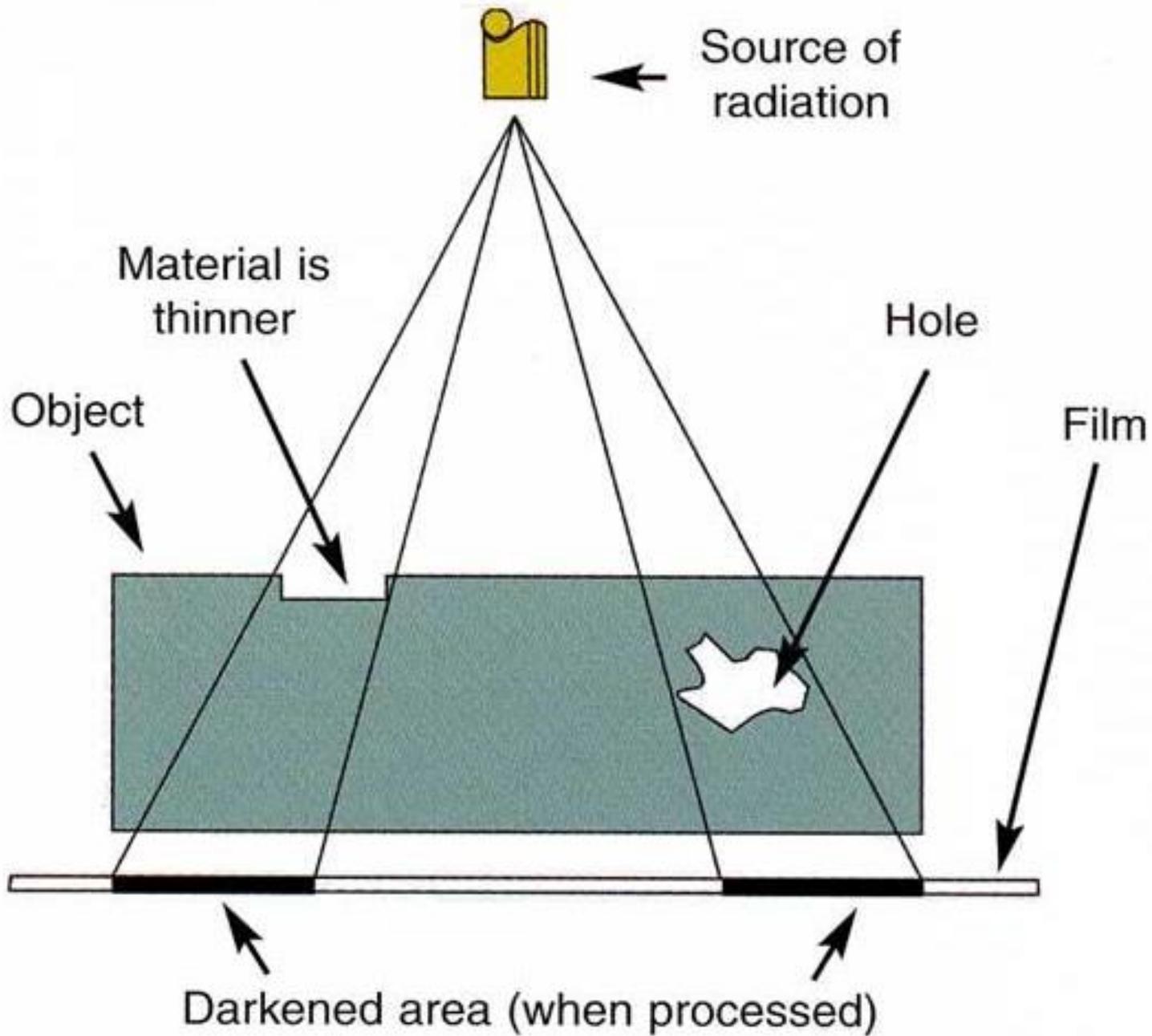
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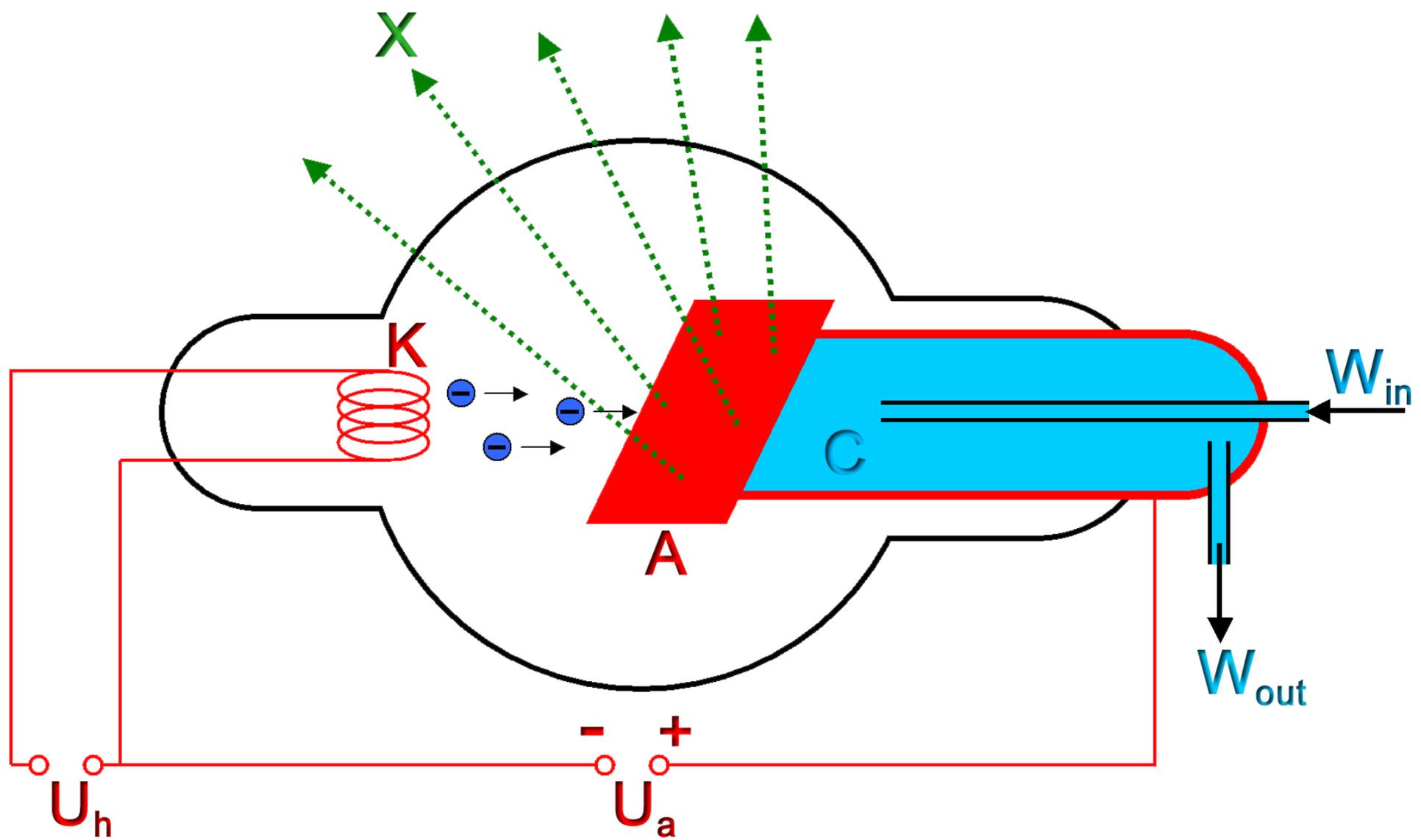
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Clipboard with document

2. Radiographic Testing (RT)

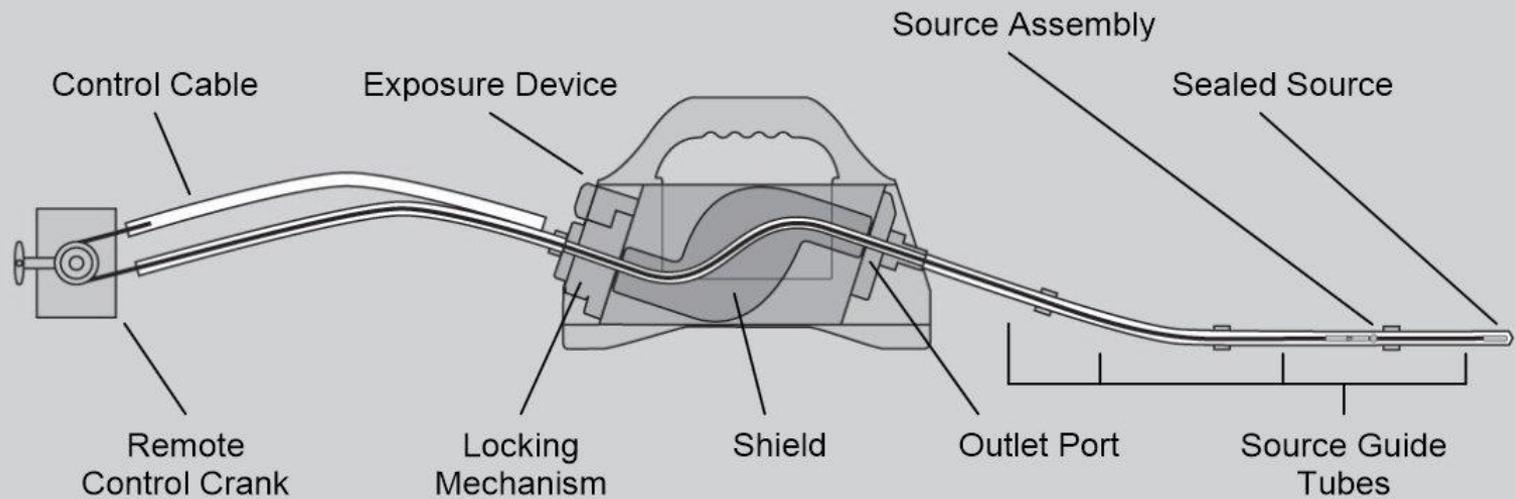
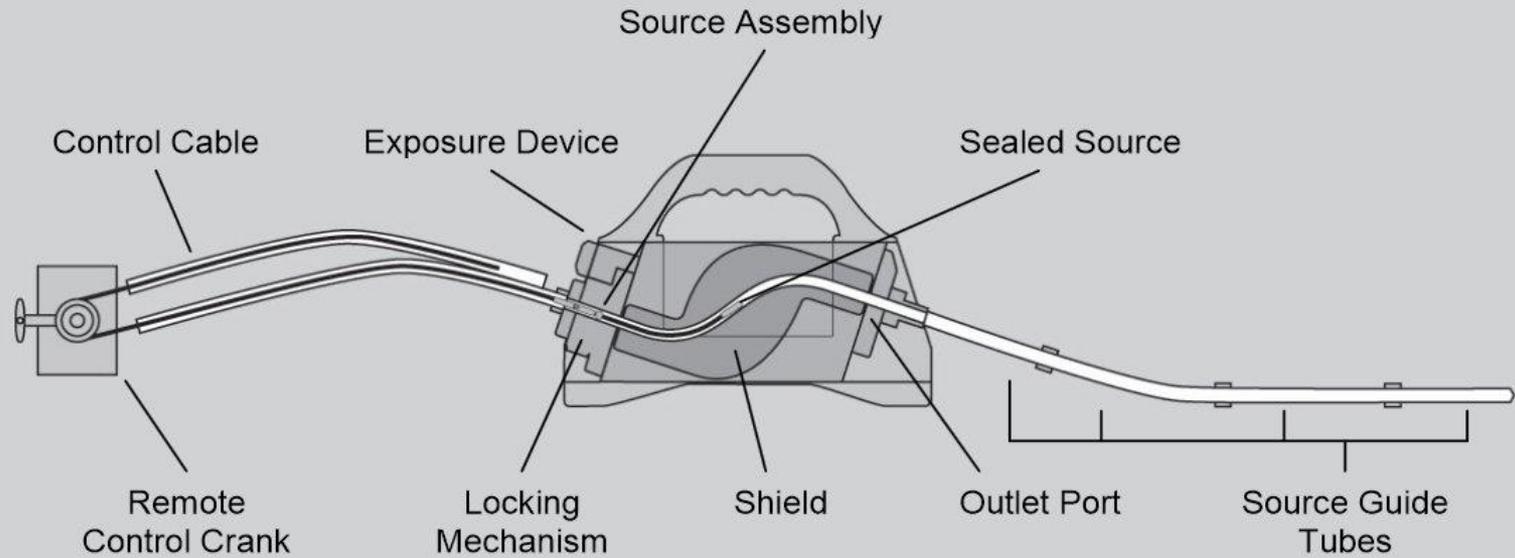
- Short wavelength el.-mag. radiation (X-ray, gamma)
 - X-ray source: cathode tube
 - gamma source: radioactive isotope (Ir-192, Co-60)
- Neutron radiation (Neutron Radiographic – NR)
 - source: nuclear reactor, accelerator, isotope (Cf-252)
- Detectors: film, plate, digital sensor
- Imaging: 2D, 3D, 4D (CT)









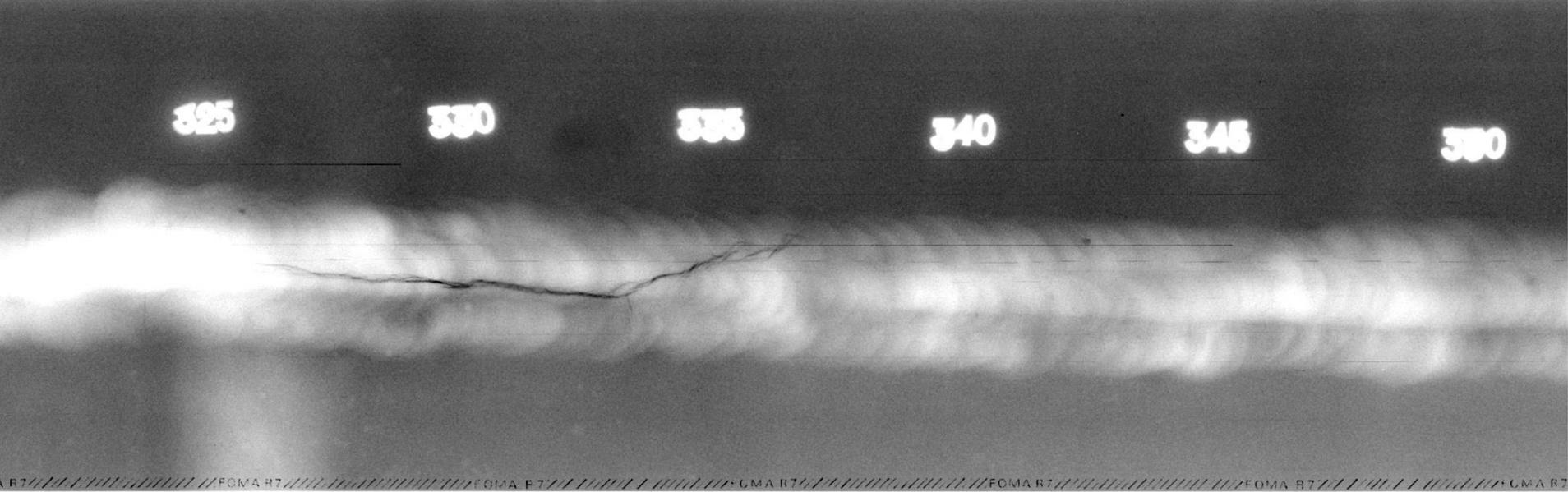






WARNING
RADIOACTIVE SOURCE

NG-1002053



Steel Plate 20mm
required to see wire number 10 =0.4mm

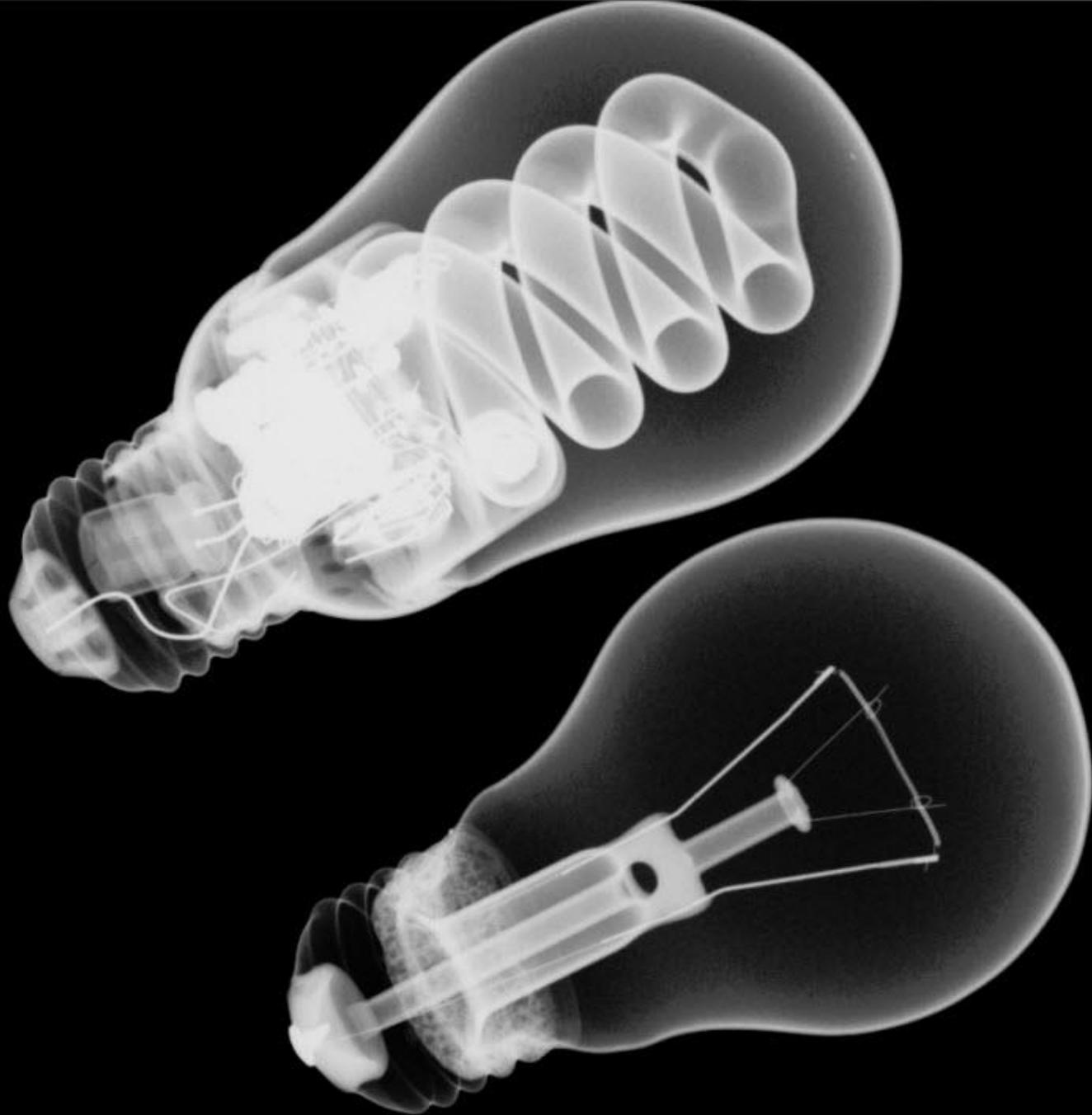
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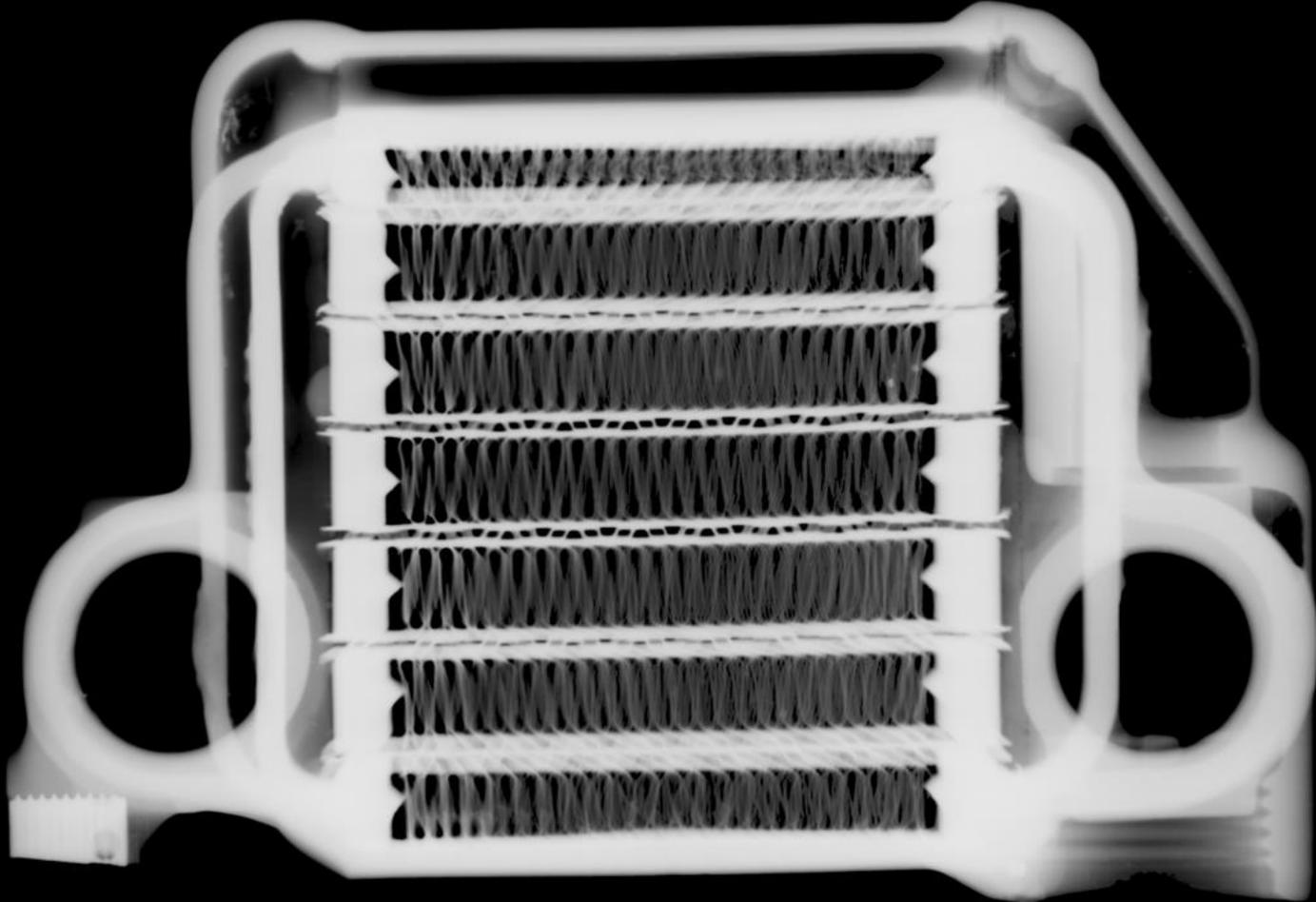
Porosity



Wire number 15 =0.125mm=0.5%







Wheel
FLO Cycle

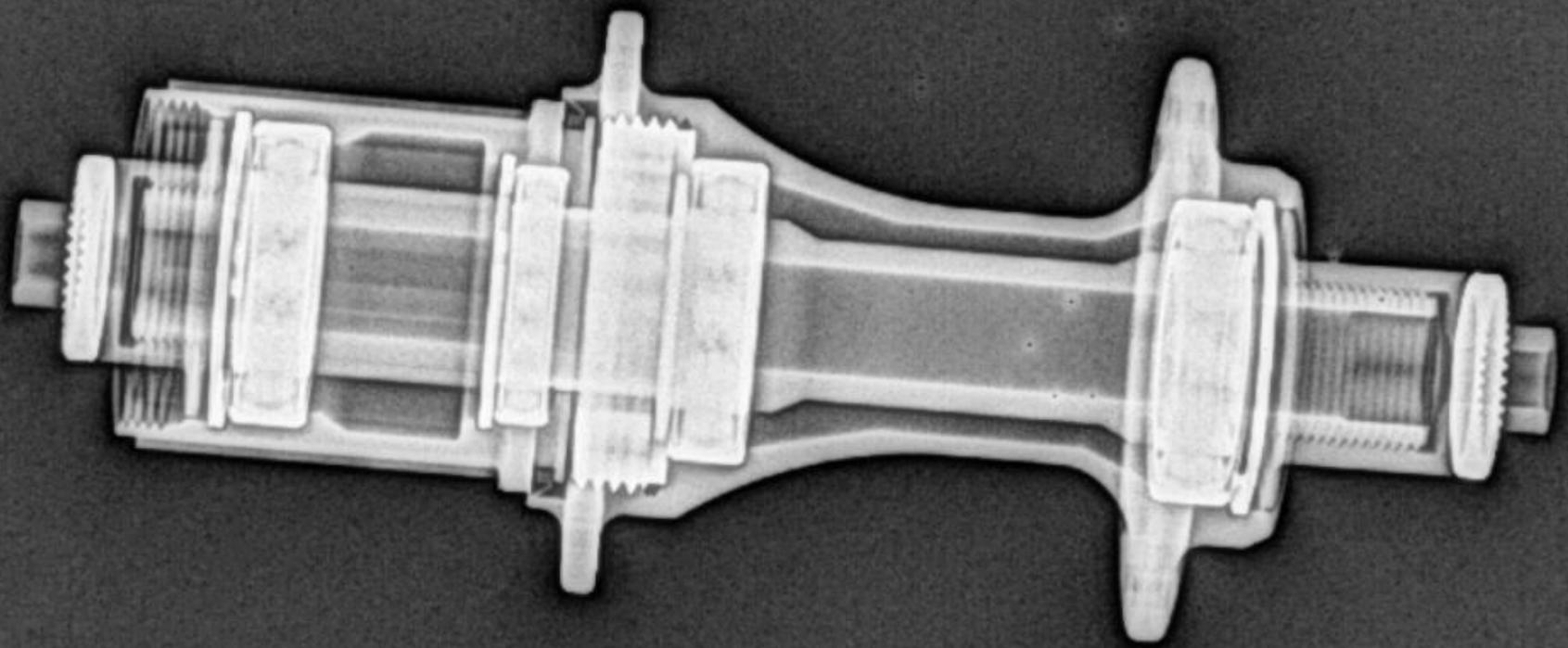
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