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United States Army

Redstone Technical Test Center (RTTC)









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What We Do

Nondestructive Inspection and Physical Measurement

RTTC offers a full range of Nondestructive Test (NDT) services for a variety of items, from the smallest components to entire weapon systems. Facilities are available for handling live munitions and explosives as well as inert items. Physical measurements are taken to show compliance with weapon system specifications. The measurement process provides the input data needed for accurate development of models (solid, structural, kinematics, etc.).



X-ray of TOW
missile



Overall view of
Metrology Lab



Coordinate
Measurement
Machine (CCM)

Overview

Primary Services
& Capabilities

Test Management
Services

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Services

Primary Services and Capabilities

- Conventional and high-energy radiographic inspection of weapon systems, rocket motors, targets, and components
- Dye penetrant and magnetic particle inspection
- Nondestructive Test (NDT) inspection
- Metrology/physical measurements (weight, center of gravity, inertia, etc.)
- Boresite and laser shearography inspection
- Flash radiographic imagery of penetrator events
- Real-time, medium-to-high energy X-ray capabilities
- Ultrasonic inspection
- Dimensional analysis with measurement capabilities

shown below

- Geometric measurements (concentricity, circularity, and total indicator run-out)
- Shape of 3-D contoured parts
- Symmetry, flatness, parallelism, and straightness
- Length to an accuracy of 0.00001"
- True position of holes up to 0.0005" accuracy
- Gear profile errors to 0.0002"
- Angles to an accuracy of 1-arc second
- Surface roughness
- Thread sizes both metric and English

Supplementary Services

- Reverse engineering capability
- Foreign system hardware exploitation
- CAD/CAM capability

Specialized Facilities and Equipment

- X-ray systems from 320 KeV to 25 MeV
- Real-time X-ray system
- Fully equipped Metrology Lab
- Coordinate measurement machine
- Optical comparator
- Dynamic balance/unbalance measurement system
- Dimensional analysis equipment
 - Precision gear-checking machine
 - Profilometer
 - Geometric measurement machine
 - Rotary tables up to 3' in diameter
 - Surface plates up to 6' X 10' X 1 1/2'
 - Super micrometer that measures to 0.00001"
 - Three Coordinate Measuring Machines (CMM) including one ultra-high accuracy machine
 - 3-D contoured part measurement system
 - Computer controlled optical comparator

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