



GUMEN

Industrial Furnace & Machine

● SAHA EXPO 2026 · Istanbul



PATENT PENDING



CUSTOM ENGINEERING + IN-HOUSE MANUFACTURING

ULTRASONIC TESTING SYSTEMS & NDT

NON-DESTRUCTIVE TESTING · ENGINEER-TO-ORDER · FOR DEFENSE & AEROSPACE

UT Solutions for the Defense Industry — Design, Manufacturing, Commissioning.

A Turkish Engineering Partner — Designing & Building Custom Ultrasonic Testing Systems for Defense & Aerospace Applications.

Defense industry UT requirements are not one-size-fits-all. **From billet to plate, from barrel to forging, from weld to composite** — every application has unique geometry, material and acceptance criteria. Gumen Makina **designs, manufactures in Türkiye, and commissions UT systems from the ground up** — tailored to your specific production line and acceptance standard. Our patent-pending VDC-integrated billet UT system is concrete proof of this engineering capability — not the limit of what we can build.



Engineering & Design

Mechanical, control, software — every UT system designed from scratch to client spec.



In-House Manufacturing

100% Turkish production. Scanners, manipulators, automation — built in our own workshop.



Standards Compliance

AMS 2154, MIL-STD-2154, ASTM E2375, EN 12804 — designed to your acceptance criteria.



Field Commissioning & Service

Installation, FAT/SAT, operator training, lifetime spare parts support.

CHALLENGES YOU FACE AS A DEFENSE SUPPLIER

· Procurement & Production Pain Points

- ✗ Off-the-shelf UT devices don't fit your part geometry
- ✗ Imported automated UT lines are expensive, spare parts take weeks
- ✗ Raw material certification missing in customer/MoD audits
- ✗ Offline lab inspections slow down production flow
- ✗ Imported equipment is a disadvantage in local-content tenders
- ✗ No design + integration partner for line retrofit projects

HOW WE SOLVE THESE WITH GUMEN UT ENGINEERING

· Our Custom Engineering Approach

- ✓ **Geometry-specific mechanics** — billet, plate, barrel, complex form
- ✓ **Local manufacturing** — spare parts in stock, fast service, low TCO
- ✓ **Auto digital certification** — PDF report + C-scan map per part
- ✓ **In-line integration** — production speed unaffected
- ✓ **High local-content score** — competitive edge in defense tenders
- ✓ **Turn-key + retrofit** — new line or existing line modernization

TARGET: DEFENSE & AEROSPACE INTEGRATORS — TÜRKİYE & EXPORT

Strategic UT engineering partner for air-land-sea platform manufacturers, munitions & rocket-missile body suppliers, UAV/UCAV structural component producers.



ULTRASONIC TESTING SYSTEMS & NDT

NON-DESTRUCTIVE TESTING · CUSTOM ENGINEERING FOR DEFENSE

Let Us Engineer & Build Your UT System!

Six engineered UT system types — each customised for your geometry, material and acceptance standard.

In-Line Billet UT

PATENT
1

VDC-Integrated · Patent Pending

Application: 7050/7075-T6 aerospace aluminium billets, rocket/missile body raw material, UAV/UCAV extrusion profile pre-acceptance.

TECH: Pulse-Echo · 2–10 MHz · 75–300 mm Ø · radial+axial · VDC sync · FBH \varnothing 0.4 mm · PLC/SCADA

Plate & Armour UT

2

Plate & Armour Inspection System

Application: Tank/MRAP hull plates, ballistic protection alloys, ship hull plate, corvette/frigate structural panel acceptance.

TECH: PAUT (16/32/64 element) · Immersion or contact · Auto X-Y manipulator · C-scan map · 5–500 mm thickness

Tube & Barrel UT

3

Tube & Gun Barrel Inspection

Application: Gun barrels (mortar, light artillery), missile tubes, hydraulic cylinders, submarine pressure pipes, helicopter shaft components.

TECH: Rotating probe · Axial + circumferential · Inner/outer surface · 20–500 mm Ø · Auto reporting

Forging UT

4

Forging Inspection System

Application: Aircraft landing gear, turbine disc/shaft, gun breech, helicopter rotor head, complex forged weapon components.

TECH: Multi-angle PAUT · Custom fixture · 5-axis manipulator · Internal flaw + segregation · AMS 2154

Weld Inspection UT

5

Automated Weld UT (AUT)

Application: Armoured vehicle hull welds, corvette/warship structural welds, pressure vessel welds, submarine bulkhead welds.

TECH: PAUT + TOFD combo · Encoded scanner · MIL-STD/AWS · AUT report · IIW Level 2/3 design

Composite & Custom UT

6

Composite & Special Application UT

Application: UAV/UCAV composite bodies, missile nose cones (radomes), composite wings, supersonic aircraft structural panels.

TECH: Through-transmission · Squirter UT · Low frequency 0.5–2 MHz · Delamination detection · Robotic manipulator

Engineering Capabilities

CUSTOM & TURN-KEY

TEST METHODS

Pulse-Echo · PAUT · TOFD · Through-Trans.

FREQUENCY RANGE

0.5 – 25 MHz

MECHANICAL DESIGN

Manipulator · Fixture · Conveyor

CONTROL

PLC + SCADA + HMI

SOFTWARE

Recipe mgmt · C-scan · Auto PDF

DATA INTEGRATION

SQL · OPC-UA · IIoT · MES

CERTIFICATION

AQAP-2110 · ISO 9001 · CE

LOCAL MANUFACTURING

100% Türkiye

How to Engage With Us · 4-Step Partnership

1

Technical Meeting

Part geometry, material, acceptance standard & production line analysis.

2

Site Survey & Quote

Concept design, mechanical + control architecture, turn-key proposal.

3

Manufacturing & FAT

In-house production in Türkiye, factory acceptance tests with client participation.

4

SAT & Certification

Site commissioning, operator training, AQAP/ISO compliant documentation.

COMPLIANT DESIGN STANDARDS · International & Defense

AMS 2154 Aerospace Wrought

ASTM B594 Aluminium

ASTM E2375 UT Wrought

ASTM E317 UT Performance

EN 12804 Aluminium NDT

ISO 16810 UT General

ISO 17640 Weld UT

MIL-STD-2154 Defense

EN ISO 9712 Personnel

AQAP-2110 NATO Quality

Visit Our Booth · Let's Build Your Solution

Tell us about your UT requirement, acceptance criteria and target budget — our engineering team will prepare a system concept tailored to your application. **Initial technical evaluation is free of charge.**

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