LASERTECH

Laser & Electron Beam Technologies for Advanced Manufacturing and MRO of Critical Industrial Assets



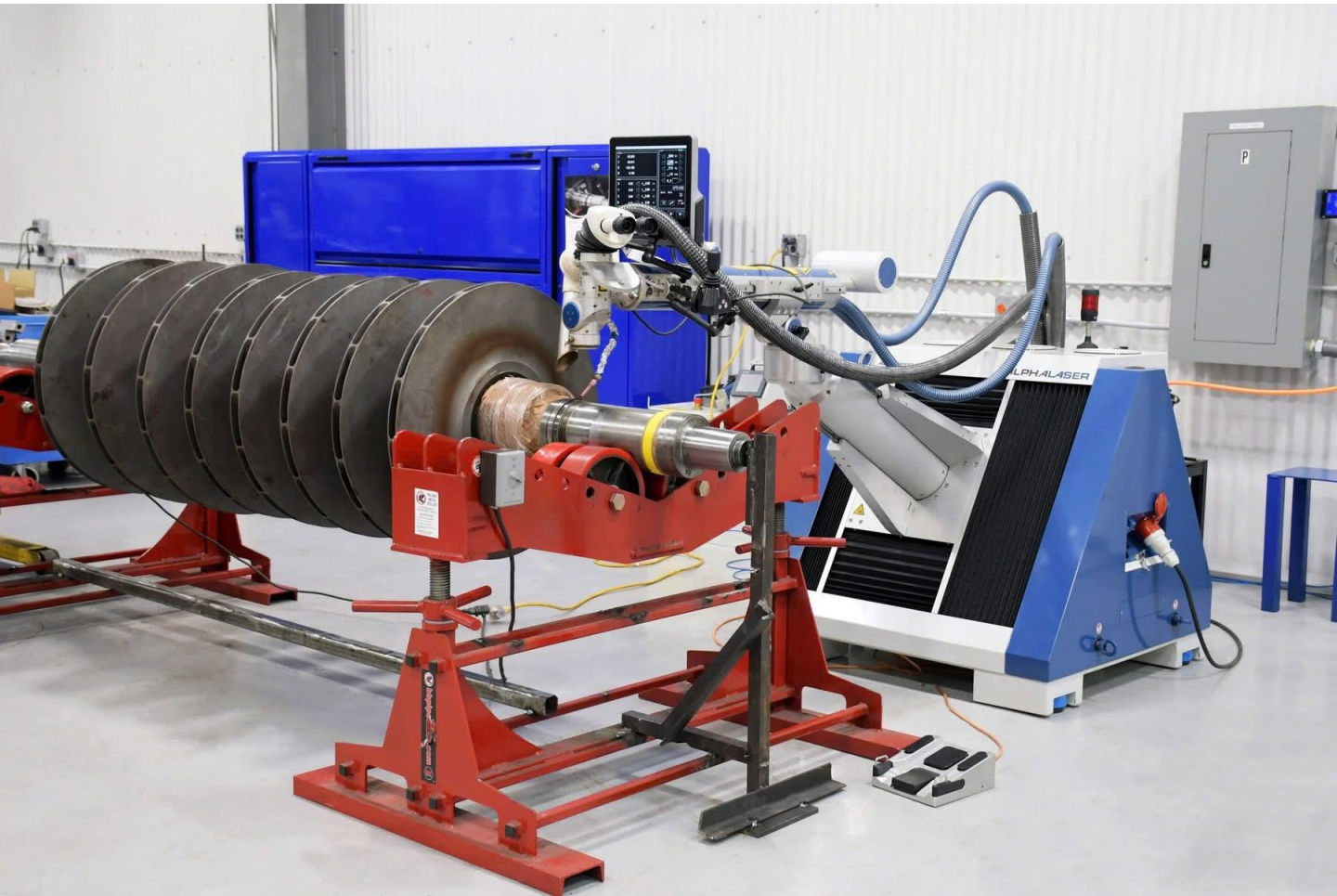
www.lasertech.vn

WHO WE ARE

Lasertech is Vietnam’s leading company specializing in laser and electron beam technologies for advanced manufacturing and the high-value MRO of critical industrial assets.

Lasertech is positioned as a Tier-2 technology partner, complementing OEMs and operators through critical, precision-driven interventions.

Our work focuses on precision-driven and risk-critical industrial applications, from advanced manufacturing to high-value repair and life-extension of strategic assets.



TRUSTED BY LEADERS

For more than 19 years, Lasertech has been a trusted partner of world-class industrial leaders, delivering advanced laser technologies for R&D, manufacturing, and critical repair.

We go beyond technology supply — we transfer expertise, train engineers, and integrate directly into our clients' operations to ensure performance, reliability, and long-term capability building.

Our customers include leading global and Vietnamese corporations in the fields of aerospace, defense, energy, electronics, automotive and other precision manufacturing industries.



INDUSTRIES & ASSETS


AEROSPACE


ENERGY


OIL & GAS


NAVAL

Industries:

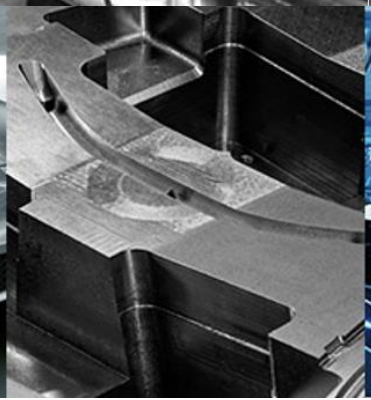
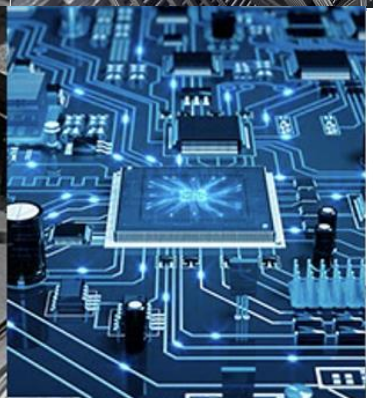
- Aerospace
- Defense
- Power Generation
- Oil & Gas
- Naval
- Heavy Industries
- Precision Engineering

Assets:

- Mission-critical components
- Shafts, rotors, turbine blades, spindles
- Compressors, pumps, impeller, valves
- Hermetic sealing electronics
- Mold & Dies
- Tooling components






THE PROBLEM


AEROSPACE


ENERGY


OIL & GAS


NAVAL

Why Critical Components Fail

Critical industrial assets rarely fail suddenly.
They degrade progressively through fatigue, wear, heat, corrosion, improper repair, and operational stress—until replacement becomes the only option.

When Critical Assets Fail, Operators face the same strategic risks:

- OEM replacement lead time: many months
- Emergency shutdown losses: tens of thousands USD/day
- Imported component dependency
- Obsolete equipment without OEM support
- Shaft, rotor, turbine failures with no local recovery solution
- Metallurgical risks from conventional repair methods
- High CAPEX for full replacement
- National energy security exposure

Replacement is expensive.
Downtime is worse.
Dependency is the real risk.

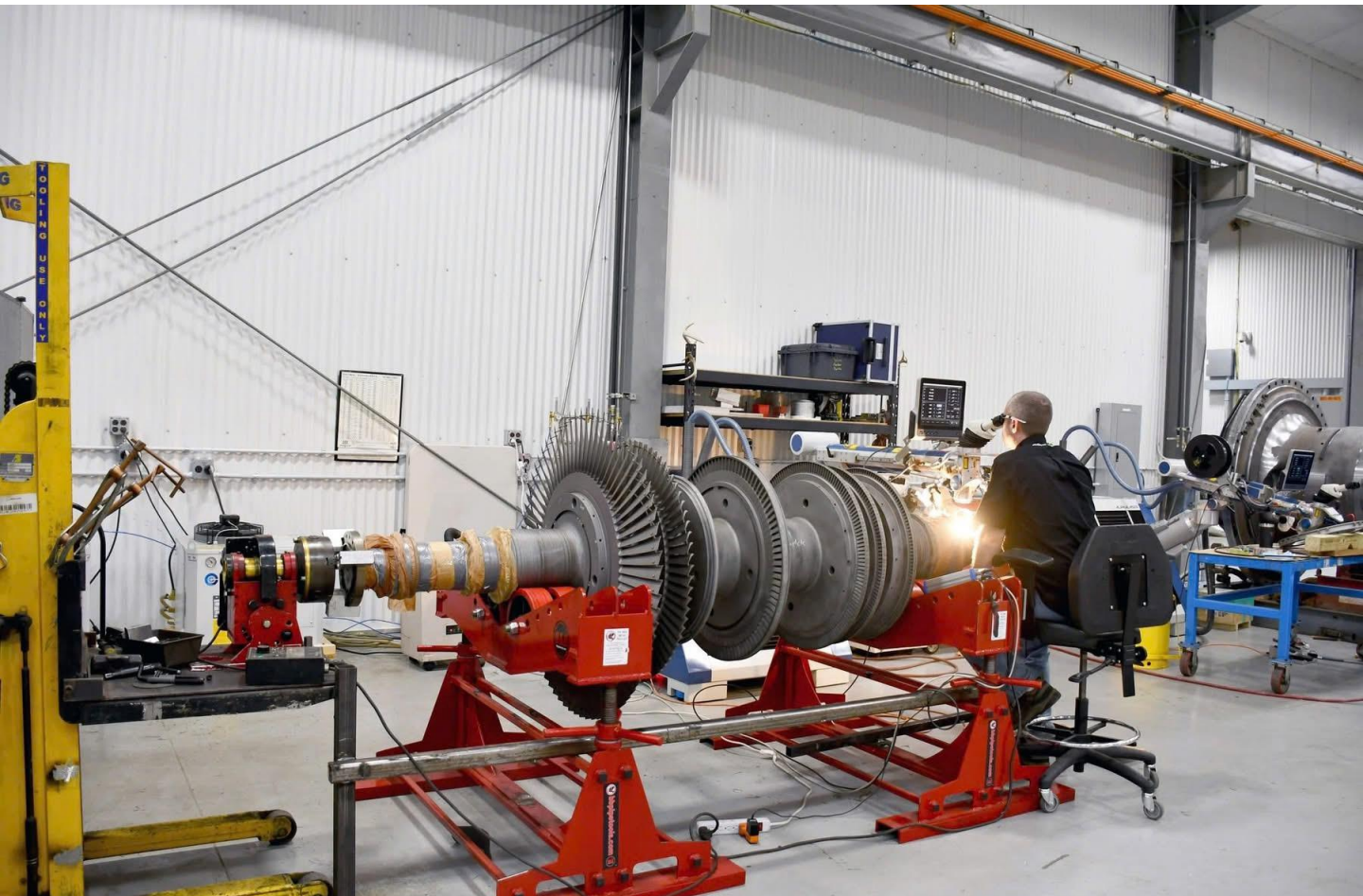
THE SOLUTION

Lasertech restores what cannot be easily replaced.

Precision pulse laser welding
Metallurgical restoration
Life extension of strategic assets
Controlled repair under qualified procedures

We intervene where replacement is no longer the best option.

Reduced OEM dependency
Reduced downtime and outage risk
Avoidance of multi-million-dollar replacement costs
Protection of energy security
Preservation of national industrial capability



WHERE WE OPERATE

Lasertech operates at the most critical phase of the industrial asset lifecycle — where failure risk, replacement cost, and strategic impact converge.

We operate where conventional manufacturing and repair methods reach their technical or economic limits.

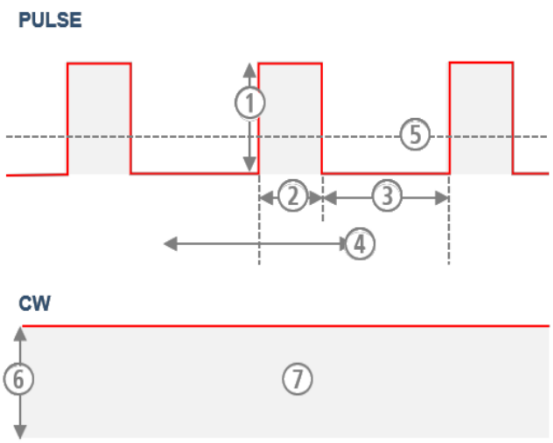
We intervene when assets can no longer be economically replaced, when OEM solutions are unavailable, or when operators must extend service life without compromising safety, performance, or metallurgical integrity.



CORE TECHNOLOGIES

Laser Beam Processing:

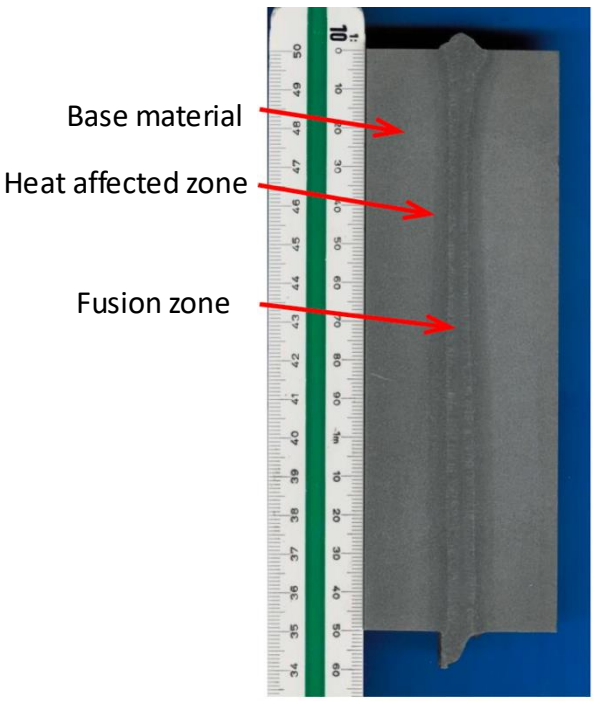
- Pulse laser welding in millisecond regime
- High peak power 12kW, low heat input with tens Joules per pulse
- Minimal HAZ less than 200 μm
- Broad applicability across critical materials and geometries



① Peak pulse power (=laser power)
② Pulse duration
③ Pause
④ Pulse period duration
⑤ Average power
⑥ Laser power
⑦ Laser energy

Electron Beam Processing:

- High energy density
- Deep penetration welding to 175 mm
- Vacuum metallurgy
- Minimal contamination environment
- Aerospace-grade joining capability



WHAT THIS ENABLES

- Restoration of structural and metallurgical integrity
- Controlled heat input and dilution
- Localized high-precision interventions
- Processing of superalloys, titanium, and special steels



Reduced downtime and maintenance costs

Extended service life of critical components

Controlled heat input with minimal distortion

Cost-efficient alternative to part replacement

STRATEGIC ROLE

Lasertech operates as a specialized technology partner for the repair, life-extension and advanced manufacturing of high-value industrial assets.

Through controlled beam-based processes, we restore structural integrity, manage technical risk, and return critical equipment to safe and reliable operation.

- Asset life extension
- Sovereign repair capability
- Reduced OEM dependency



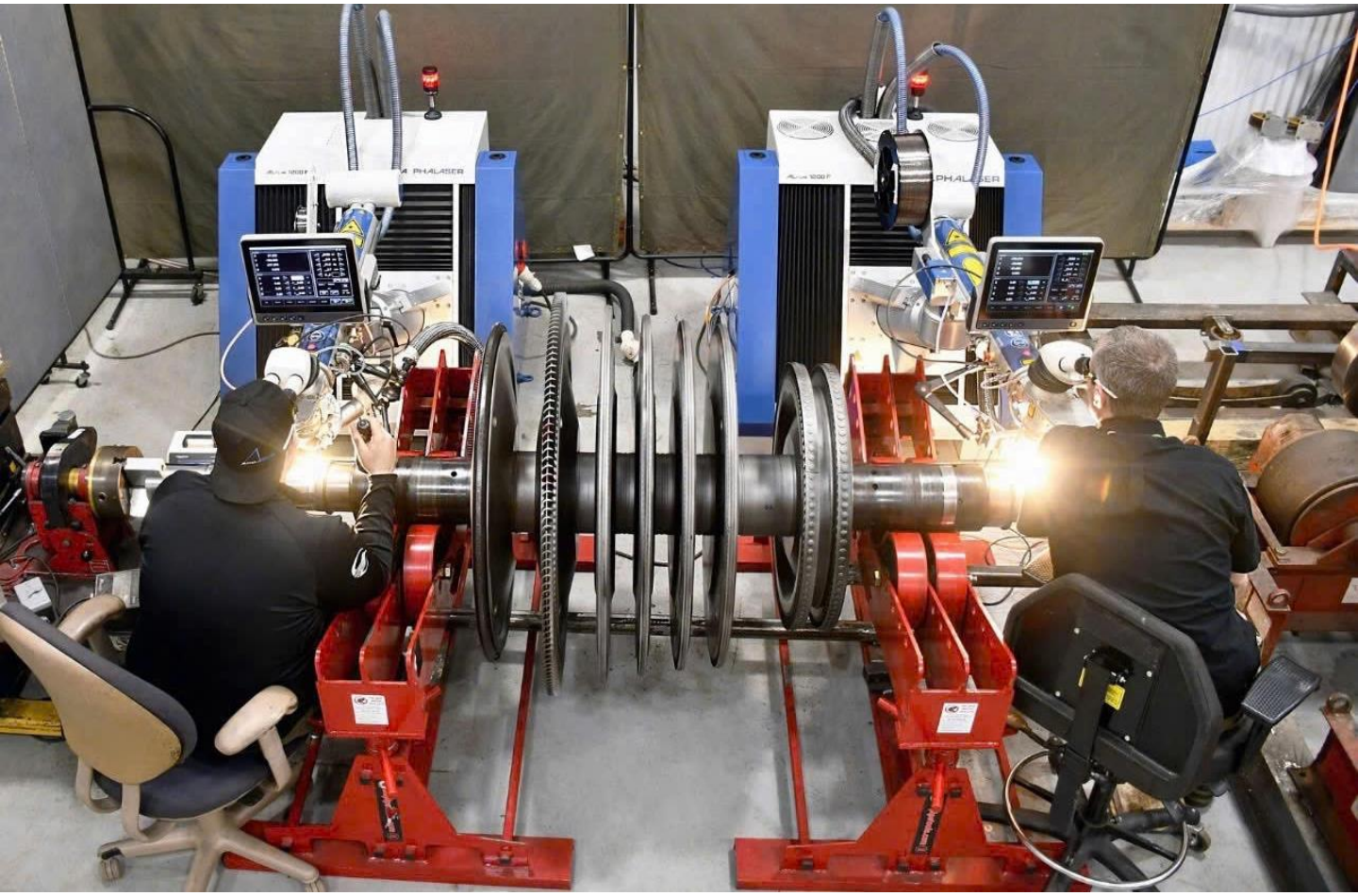
OUR OPERATING MODEL

Lasertech operates at the intersection of advanced manufacturing, precision engineering, and critical asset intervention.

We apply controlled beam technologies to restore, manufacture, and extend the life of high-value industrial components where failure is not an option.

Our work is defined not by volume, but by precision, responsibility, and engineering discipline.

In environments where reliability is critical, Lasertech delivers confidence.



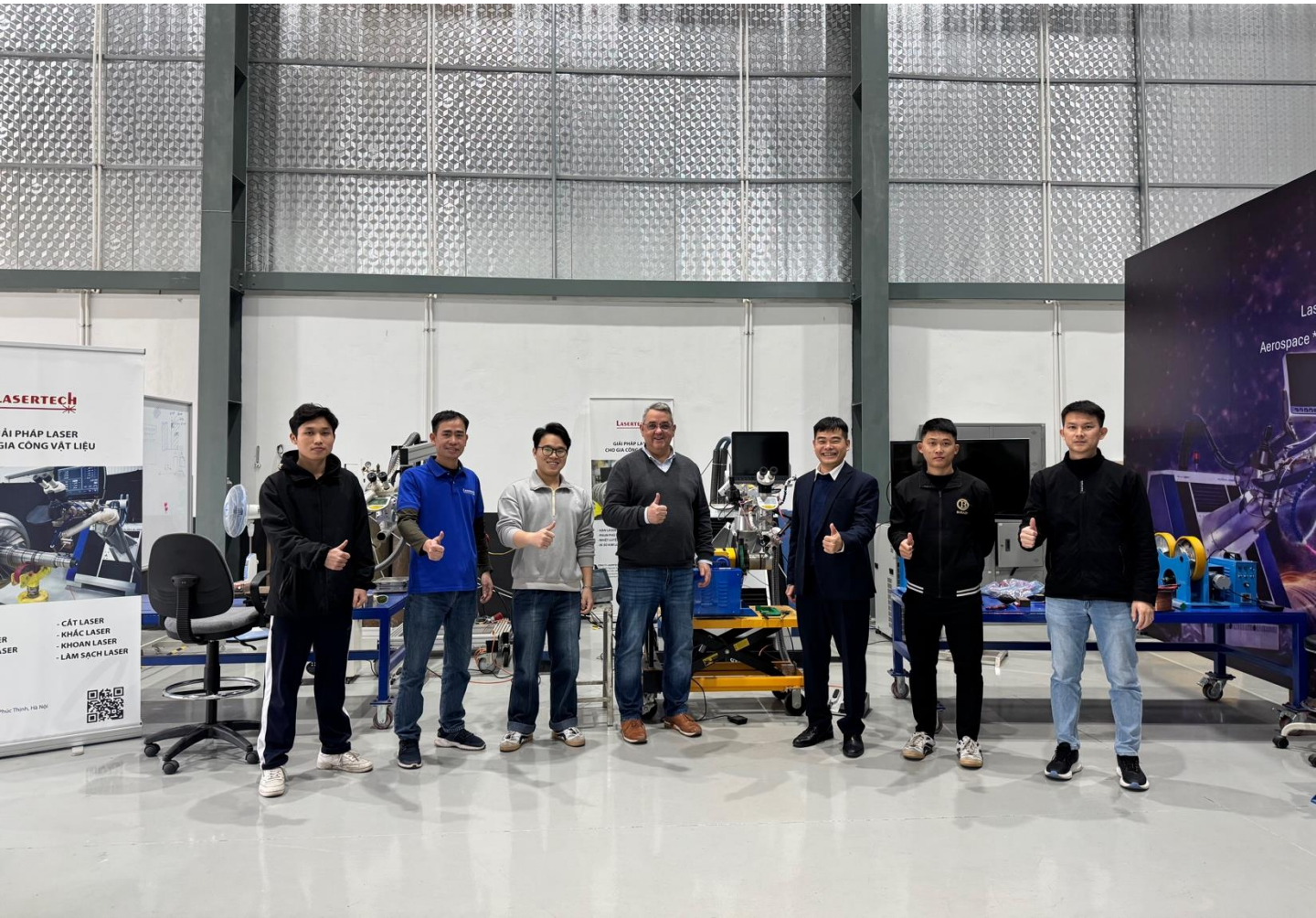
QUANTUMWORKS

QuantumWorks is the technology nucleus of Lasertech—where beam science becomes industrial capability.

As Vietnam's first European-level Beam Applied Center, QuantumWorks restores metallurgical integrity for critical industrial assets through advanced laser and electron beam technologies.

It functions as an industrial beam laboratory for controlled process optimization, precision repair, and life extension of mission-critical components.

A focused engineering team is dedicated to beam process mastery and the restoration of high-value industrial assets.



STRATEGIC PARTNERSHIP

Lasertech is the official representative of world-leading beam technology manufacturers such as ALPHA LASER GmbH, Trotec Laser GmbH, 4Jet Laser GmbH, Steigerwald Strahltechnik GmbH and Evobeam GmbH.

Their technologies are widely used for R&D, production and MRO in nuclear, aerospace, defense, power generation, oil & gas, marine, rail traffic, heavy industries, critical MRO.

These partnerships ensure access to state-of-the-art beam systems and long-term technological alignment.

LASER & ELECTRON SYSTEM

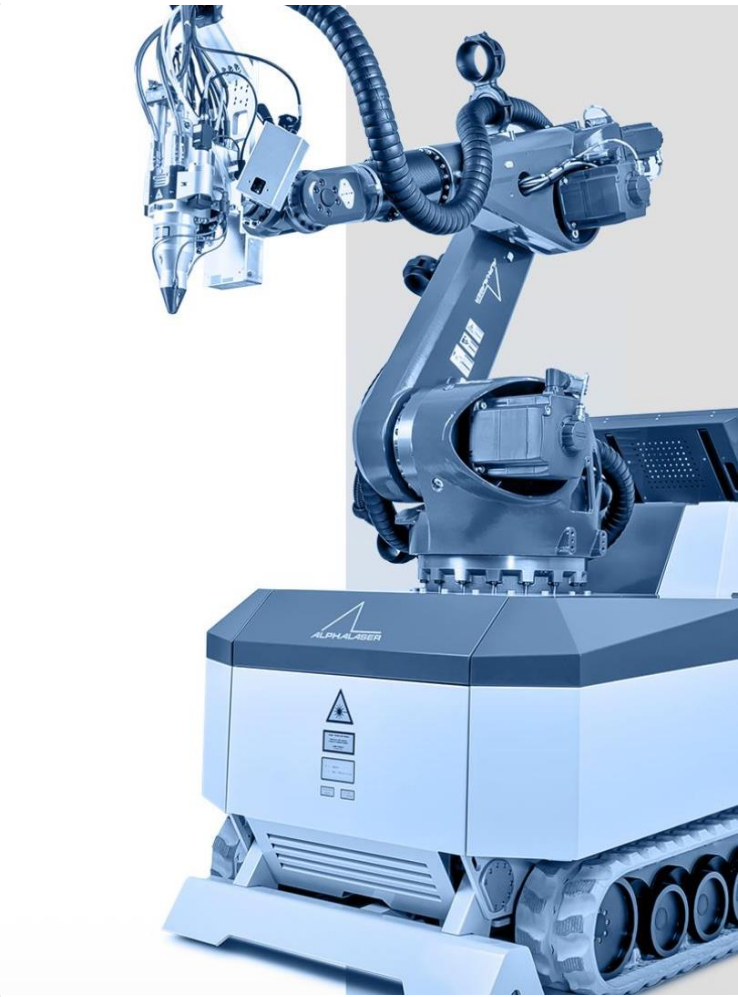
Sovereign Beam Processing Systems

For nuclear, defense, aerospace, energy and strategic manufacturing capability

- Metallurgical integrity
- Low heat input
- Ultra precision
- High productivity







LASER WELDING SOLUTIONS

With extensive expertise in advanced beam technologies, modern facility as European-level beam applied center, Lasertech delivers high-precision laser welding services for demanding industrial applications from gas & steam turbine, rotating equipment and critical shaft systems, mold & die, components, from R&D to production, MRO, process qualification, strategic intervention…



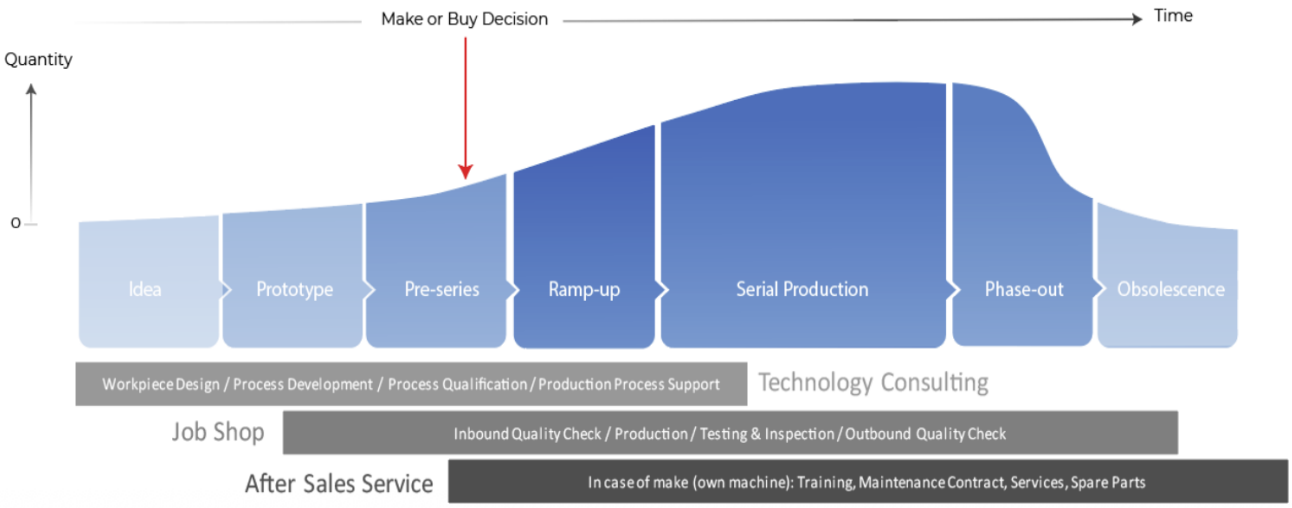



Aerospace & Defense	Titanium, Inconel, Aluminum
Power Generation	Babbitt, Nickel alloys
Oil and Gas	Duplex, Hastelloy, Stellite
Naval	Copper, Stainless steel
Precision Engineering	Invar, Kovar, Stavax

APPROACH

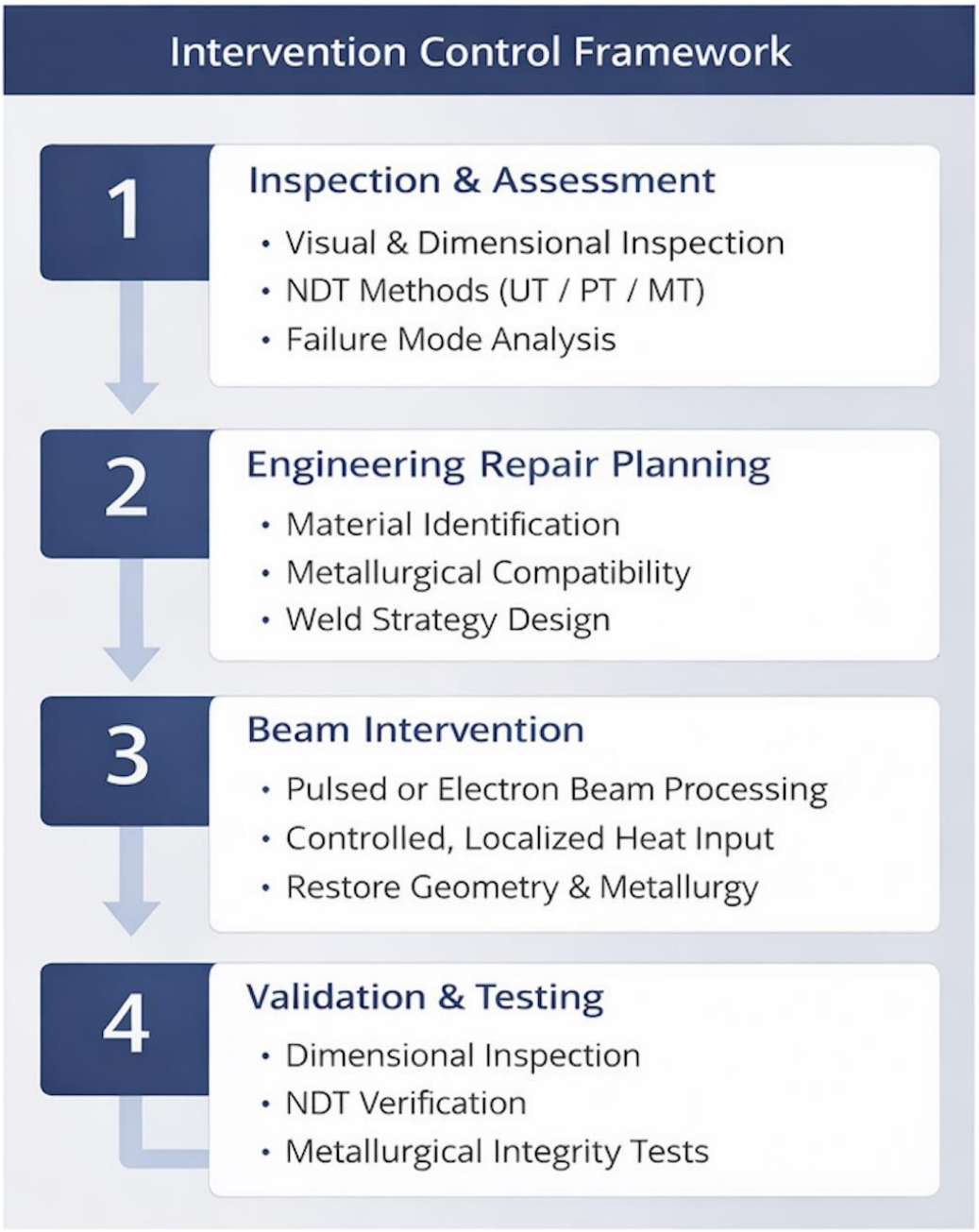
Based on extensive metallurgical know-how and laser beam processing experience, Lasertech delivers beam-based engineering solutions across the full lifecycle of critical components.

- Process development & qualification
- Precision beam manufacturing & repair
- System integration
- Lifecycle support



INTERVENTION CONTROL

Lasertech applies controlled beam-based intervention under defined inspection, repair planning, and validation procedures to ensure metallurgical integrity and operational safety.



CASE STUDIES

Lasertech applies pulse laser welding processes qualified under AWS D17.1, supported by metallurgical validation including macro-section examination, HAZ measurement and defect inspection.

Sector: Aviation
Repair: Engine Jetpipe
Material: Inconel 625
Thickness: 0.5 mm
Standard: AWS D17.1 PLW



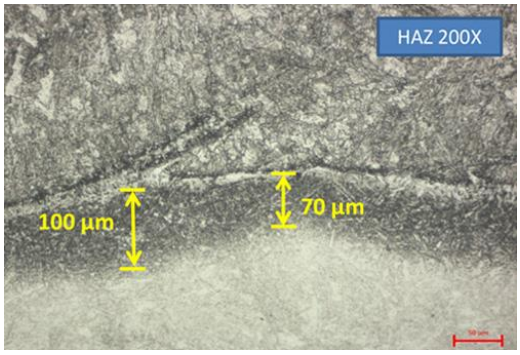
Sector: Power generation
Repair: Shaft
Material: CrMoV Steel
Thickness: 2.0 mm
Standard: EN ISO 14732

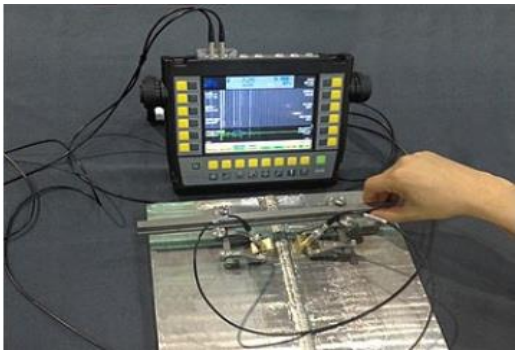


QUALITY & READINESS

Operating in alignment with AS9100 principles and NADCAP requirements.
Process Qualification:
AWS D17.1 – Aerospace Fusion Welding Specification
Applicable for precision laser welding of critical components

Commitment to quality, confidentiality, and long-term partnership.











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