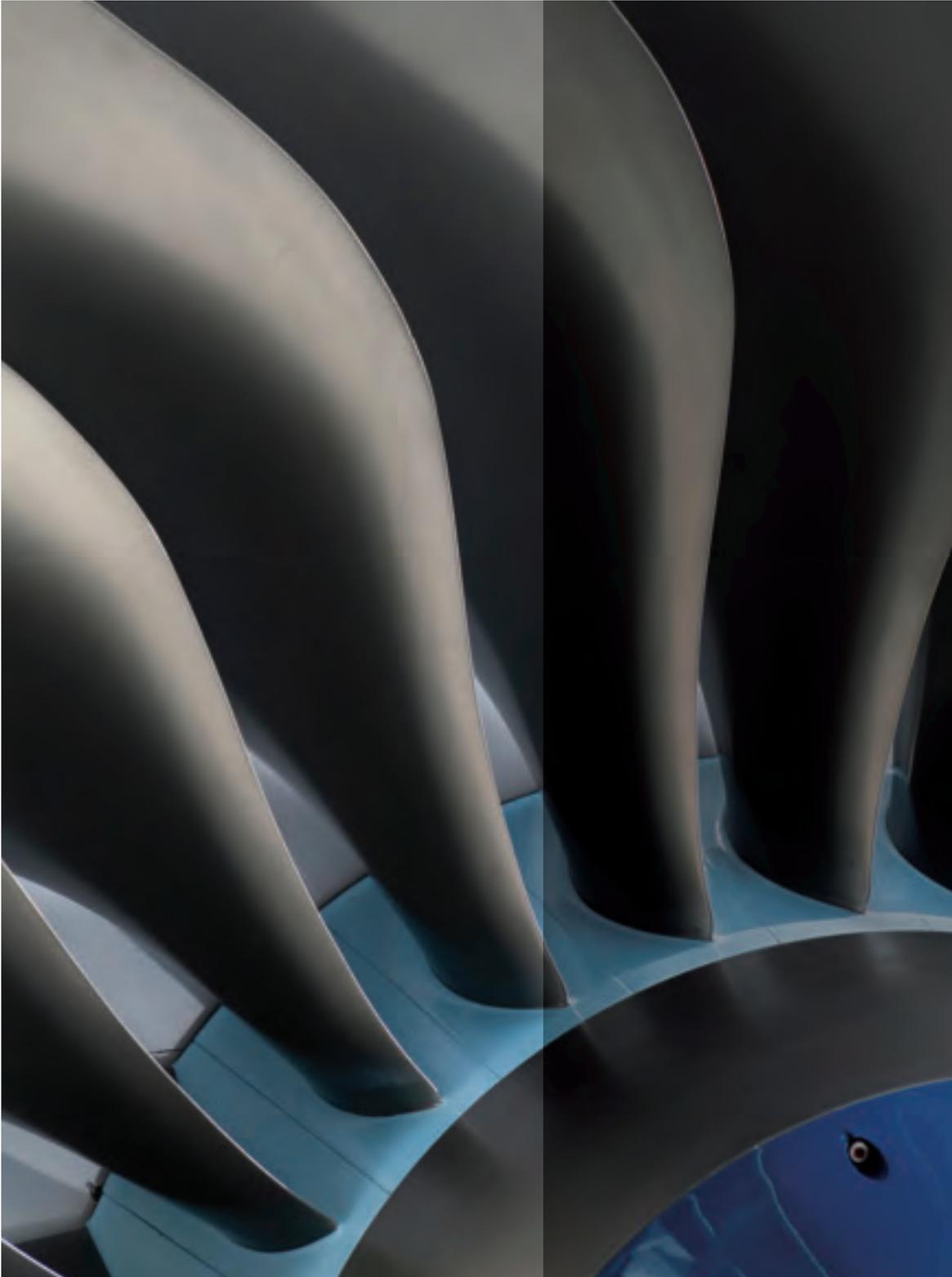

Component Level Production Backed by
Unrivalled Expertise

WAM Winbro Advanced Machining



WAM

Winbro Group Technologies has always embraced the philosophy of providing a total solution to customer's requirements. Combining our intimate knowledge of turbine components with our expertise in turnkey machining systems, we have created WAM (Winbro Advanced Machining). WAM provides our customers with a range of machining facilities which can be used in a number of different ways.



For customers with a machine in build, WAM provides the opportunity to define and refine the process and machining parameters, on a machine of the same type and using exactly the same process. This is an invaluable asset when there is a need to produce production level components ahead of the delivery of a new machine.

WAM

WAM can also be used as a second source for component production where short, medium or long term increases in production capacity are required. Our success can be measured by the fact that we enjoy long-term relationships with many of the leading aero and industrial gas turbine manufacturers across the world.

Approvals

- Winbro Advanced Machining (WAM) certifications include:
- ISO9001 2008
 - AS9100 Rev B
 - Accreditation with Nadcap for non-conventional processes
 - Winbro has also achieved independent accreditation with many of the industry's blue chip OEM's.

Machining Processes

The WAM facility houses a comprehensive range of advanced non-conventional machining systems, manufactured by Winbro. The machining processes available include:

- High Speed EDM Drilling
- High Speed EDM Milling
- Laser Drilling
- Laser Ablation
- Cooling Hole Re-Opening

High Speed EDM Drilling

Six axis high speed EDM (Electro Discharge Machining) drilling cell with capacity for advanced shaped hole generation in aero and IGT blades, vanes, segments, combustors and other engine components.

High Speed EDM Milling

Six axis EDM (Electro Discharge Machining) milling cell, used to produce seal slots and cooling slots on aero and IGT blades, vanes, segments, combustors and other engine components.

Laser Drilling

Winbro offer a range of different Laser Drilling solutions, which are application dependant. These include trepanning, percussion drilling, DOF (drilling on the fly) and shaped hole machining.

Laser Ablation

Winbro's WAM facility has considerable experience of using laser ablation for the removal of coating overspray, as well as diffuser machining in coated and non-coated components. WAM's laser ablation process offers exceptionally high quality metallurgy.

Cooling Hole Re-Opening

WAM has developed a highly innovative technique for salvaging blades and vanes that have cooling holes blocked or restricted by the coating process. The technique utilises multiple processes as required by the type of coating and the severity of the blockage or restriction. The yields from this recovery process are particularly high and offer a cost effective and rapid route to component salvage.



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1. Advanced shaped diffusers
 2. Cross section, drilling through TBC
 3. HP Turbine blade
 4. Laser drilling on the fly (DOF)
 5. HSD EDM drilling a HP blade
 6. HSD EDM drilling a HP vane

WAM

winbrogroup.com

In addition to our UK headquarters and USA facilities, Winbro Group Technologies has a number of partner companies strategically located to provide local sales and service support.

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WAM