

# GAS TURBINE RETROFIT CAPABILITIES

## COMPLETE AIR MANAGEMENT SYSTEMS AND COMPONENTS



# SINGLE SOLUTION APPROACH

An air management solution to meet your turbine retrofit needs — no matter how basic or complex. Whether you are looking to install a new or replacement turbine system, Dürr Universal can help.

We can meet the complex air intake and exhaust system needs of your gas turbine equipment with:

- » Custom engineering
- » The highest quality inlet filtration
- » Silencing for both inlet and exhaust baffles
- » A team of experts to support your project from initial consulting through installation

Dürr Universal is a single-source solution provider for meeting your application needs, reducing costs, and managing risk.

Our 55+ years of experience with air management systems and components, supporting virtually all major turbine brands, gives us the expertise to tackle virtually any project regardless of complexity or location. We help customers around the world with applications from five megawatts to several hundred megawatts meet clean, quiet air regulations safely and efficiently.

Dürr Universal can reduce costs, eliminate integration issues, offer superb project management, and deliver superior after-sale service with its total solution focus. We work hard to fully understand your exact quality, cost, and delivery requirements.

We offer manufactured components with unmatched quality, complete engineering and design support, for a broad range of gas turbine brands. This gives us the ability to design a solution that fits your unique needs, regardless of the refurbishment project.

We apply the latest technology to build specially engineered acoustic and emission systems, filtration solutions, and enclosures all matched to your specific needs and requirements, all delivered as a single solution.

## Components

From off-the-shelf and custom-designed air inlet and exhaust system components to engineered-to-order enclosures, Dürr Universal sets an uncompromising quality standard. All aspects of component manufacturing are managed in-house. Substantial global sourcing and supply chain resources enable Dürr Universal to ensure not only component quality, but that of the entire project.



## Our total solutions capabilities:

- » In-house engineering and design control optimizes system performance
- » Program management oversight and responsibility gets your project done according to plan
- » Multi-plant manufacturing capacity and capabilities enables us to meet component design specifications, and your expectations
- » Global sourcing and supply chain resources save you time and money
- » Installation services and validation is our assurance your system and its components meet your specific needs day in, day out
- » After-sale support and annual inspection services ensure all system requirements are fulfilled from installation to going online to being operationally compliant

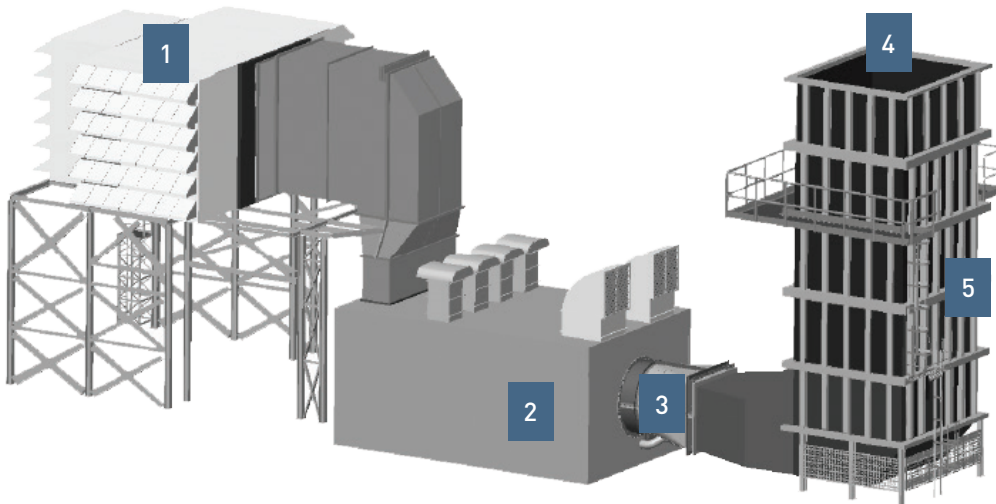
## Quality air management components include:

### Inlet System Components

- » Inlet silencers
- » Pulse filtration systems
- » Barrier filtration systems
- » Anti-icing systems
- » Inlet cooling systems
- » Transitions
- » Ductwork
- » Enclosures
- » Structural/support steel

### Exhaust System Components

- » Exhaust silencers
- » Diverter dampers
- » Structural/support steel
- » Emissions packages
- » Bypass and HRSG stacks
- » Platforms/ladders
- » Plenums
- » Expansion joints
- » Oxidation catalysts

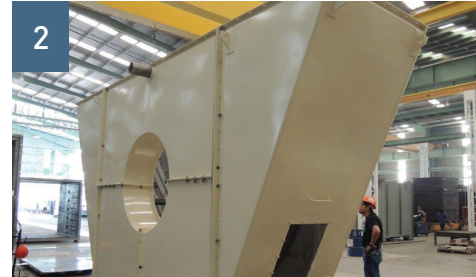


[www.durr-universal.com](http://www.durr-universal.com)



### Inlet Air Filter Systems

One of the only acoustic and filtration solution providers that can design, engineer, and manufacture a total gas turbine inlet system solution.



### Plenums

Internally lined, custom-designed and manufactured inlet and exhaust plenums for large-frame machines. Total turnkey capability for safety-first field installations and minimal downtime.



### Diffusers

Highest quality intake and exhaust diffusers to meet noise and emission requirements and optimize equipment air flow.



### Exhaust Stacks

Our engineers determine the best technology and components to ensure you achieve both noise and emission compliance.



### Exhaust Baffles

Built with life-extending designs and proven over a decade of field use.



» Dür Universal designed and manufactured this exhaust system for a Westinghouse 251 gas turbine

## Case Study: Power Generation

### Business Situation

Years of operation on this peaker unit caused considerable deterioration of the inside liner sheets and exhaust baffles.

### Solution

Dür Universal replaced the complete exhaust system on a Westinghouse 251 gas turbine for the Rochester Public Utility (RPU) in Rochester, Minn. The scope included expansion joint, flow transition, silencer baffles, stack, new ladders, and service platforms, as well as demolition and system installation. The design of the new system enhanced the acoustic attenuation, while improving longevity, and helped maintain system performance. The project team worked closely with the customer to minimize risk during the outage. Close attention was paid to the interface of critical dimensions associated with utilizing the existing footprint, as well as to ensure schedules were met and the overall project progressed as planned.

### Benefits

Single-source point of contact for RPU to Dür Universal made for a smooth transition on the retrofit project.

## Services Offered

In today's competitive environment you need to find every safe way possible to trim costs. And this often means looking beyond the actual cost of an air management component. The ability of Dür Universal to deliver a complete system solution can reduce your reliance on multiple vendors, eliminate costly integration challenges, eliminate lead-time issues, and ensure a trouble-free project. The result is reduced total acquisition costs and minimized project risk. Our services include:

- » Acoustic site surveys
- » Budget preparation
- » Advanced acoustic insulation materials
- » Enhanced thermal designs
- » High-temperature coatings
- » Custom-engineered solutions
- » Engineering, manufacturing, and project management
- » Inspection and reporting
- » Commissioning
- » Turnkey system solutions
- » Dür Universal field services

## Dür – Leading in Production Efficiency

Five divisions, one goal: maximum production efficiency for our customers

- » **Paint and Final Assembly Systems:** paint shops and final assembly systems for the automotive industry
- » **Application Technology:** robot technologies for the automatic application of paint as well as sealants and adhesives
- » **Clean Technology Systems:** air pollution control systems and noise abatement systems
- » **Measuring and Process Systems:** balancing systems as well as assembly, testing, and filling technology
- » **Woodworking Machinery and Systems:** machinery and systems for the woodworking industry

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