



# Heat exchangers

design & manufacturing

## When innovation Acts for savings

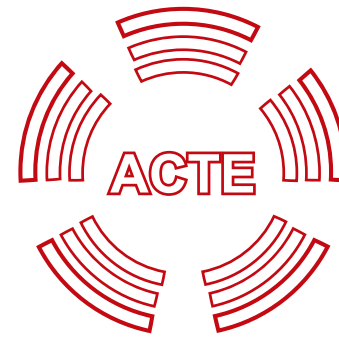
### OUR EXPERTISE, YOUR SUCCESS

With ACTE "Growing with our clients" is much more than a position, it is a directive. Since 1998, we have put our unique knowledge about the recovery of waste heat to benefit our industrial partners. Similarly, if our heat recuperators are entirely designed and manufactured by us, this is because we are convinced that the continuity of dialogue from the first sketch to industrialisation of the recuperator is the best way to serve client's interest, both in terms of durability and profitability.

The COMPACT and GAP ranges of heat exchangers are both dedicated to recovery of heat from fumes and exhaust gases with particular attention paid to performance and the impact of the recuperator on all the upstream system. This technology is a reference for those whose aim is to put emphasis on energy efficiency.



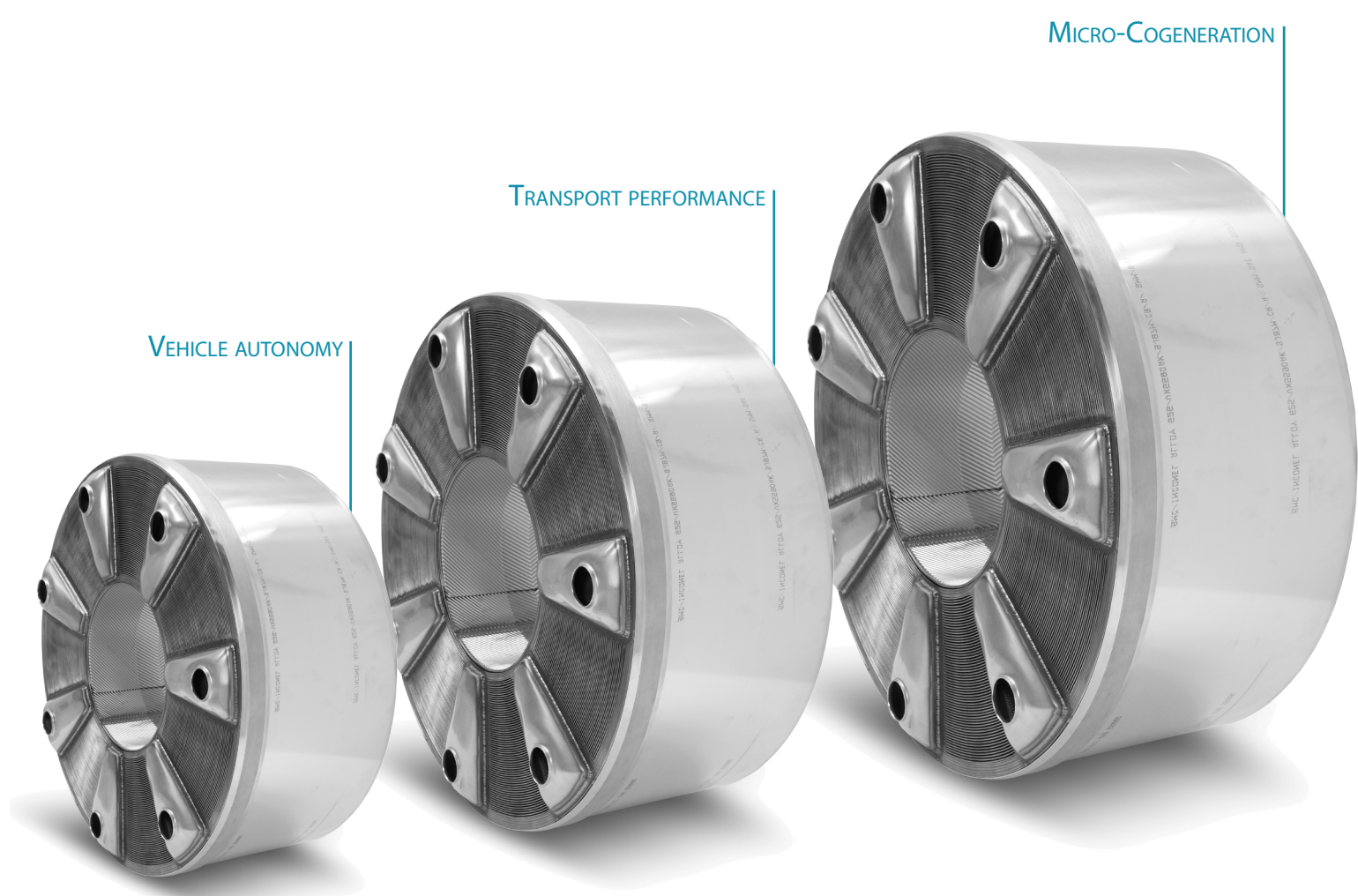
To learn more, [www.acte-sa.be](http://www.acte-sa.be)



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Acts for savings



## HEAT RECUPERATORS

GAS-AIR

FOR MICRO GAS TURBINES

THE COMPACT RANGE



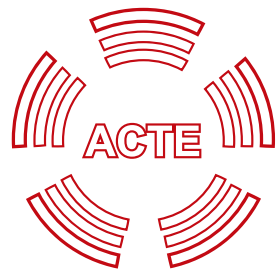
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## HEAT RECOVERY FROM EXHAUST GASES

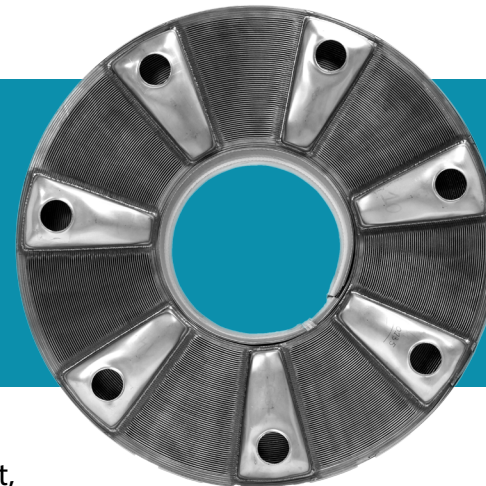
OF MICRO GAS TURBINES

The ACTE recuperators capture the heat contained in the exhaust gas and the fumes. This energy source is significant to the energy performance in most systems and processes. In the case of gas turbine engines, it is estimated that on average 30% of energy consumed is in fact lost in the form of exhaust gas heat.

### The COMPACT range: Specially designed for micro-turbines

The COMPACT heat exchangers are the result of many years of research and development. Their specific design has been thought up to improve micro and small gas turbine performance whilst ensuring their compatibility with system restrictions:

- » Limited fouling or clogging up
- » Resistance to **thermal shocks and fatigue**
- » Optimised **lifetime** | as much as 3 times
- » High effectiveness | 90% and more
- » Highly **compact** | up to 900m<sup>2</sup>/m<sup>3</sup>
- » High temperatures | up to 650°C with Aisi
- » Economise up to 50% fuel



GAS-GAS / GAS-AIR  
FROM A FEW kW  
TO SEVERAL MW

Thanks to this approach and technical developments carried out, the gas-to-air recuperators proposed by ACTE are compact, robust and very efficient. Their annular shape allows them to be integrated according to your technical and economic restrictions.

Improve performance and reduce fuel consumption

## COMPACT HEAT RECUPERATORS

Imagined to increase the efficiency of your future micro gas turbine

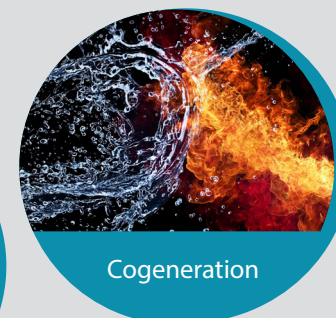
ACTE was founded in 1998 by a micro gas turbine engineer, who was looking for a specific heat recuperator suitable for the very demanding specifications of this sector.

The market was unable to propose any solution capable of meeting the restrictions inherent to this high temperature thermodynamic cycle: high performance and resistance to thermal shocks and fatigue.

Today, COMPACT recuperators are used just as much in stationary cogenerators as in transport methods.



Leistungsfähigkeit von Fahrzeugen



Cogeneration

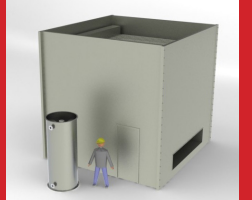
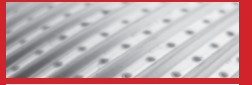
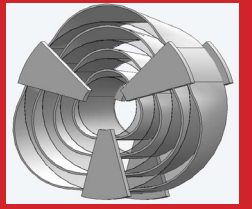


Wirkungsgrad der Kreisläufe

When innovation Acts for savings

INNOVATIVE AND OPTIMISED PRIMARY SURFACE

- » "Flat tube" design
- » Annular geometry
- » Fluid circulation management
- » Local pressure retention
- » Deformation management
- » Up to 25x more compact
- » Up to 4x lighter
- » Radial collector



FROM DESIGN TO PRODUCTION

ACTE expertise covers all the questions associated with heat exchangers

- » **Thermal** design
- » optimises flow
- » **Mechanical** design
- » Materials analysis
- » Supply system analysis
- » Complete design of complex **interfaces** (in particular gas turbines)
- » Evaluation of the thermodynamic cycle

Each need is unique, ACTE responds in a targeted manner:

- » Supply of a **standard** solution
- » **Adaptation** of a standard solution
- » **Bespoke** development
- » from prototype to series production