



Sustainable Heat Recovery

Systems for oil-free compressors



Heat Recovery

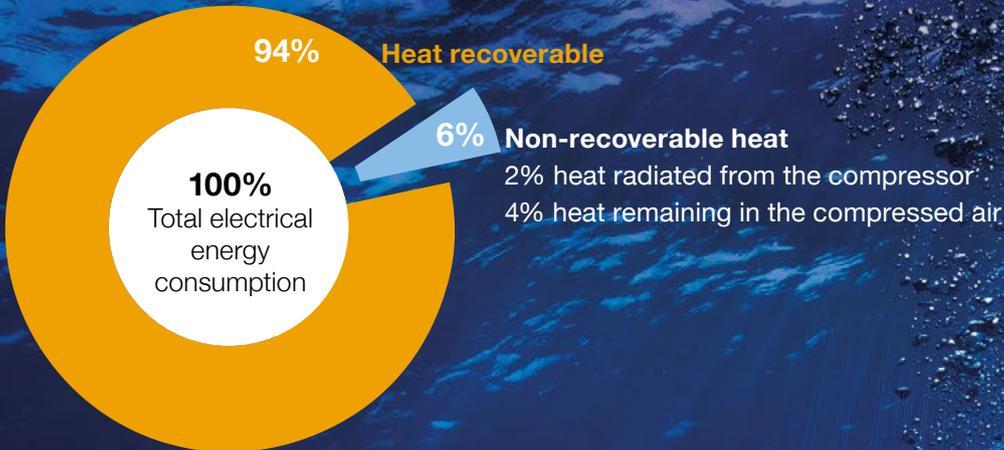
SaveMoney

AND reduce your Carbon Footprint

Turn waste heat to your advantage

Heat recovery potential

Under ideal circumstances up to 94% of the waste heat can be recovered for re-use.



It's critically important that we focus on energy now and in the future:

Energy prices will almost certainly continue to increase

kWh

Compressed air is considered expensive, but alternative electric tools are not necessarily cheaper options, if you consider that you can re-use the **heat to save energy somewhere** else in your facility

Concerns for the **environment and sustainable development** are growing

CO₂

Countries and industries face **stringent targets** to reduce carbon dioxide emissions

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Turn this waste heat to your advantage: recovering it will allow you to save huge amounts of energy, cut CO₂ emissions and improve operating costs.

Why heat Recovery

It is a thermodynamic fact that around 94% of the energy needed to run a compressor gets converted to heat. Without heat recovery, this heat is directly blown into the atmosphere.

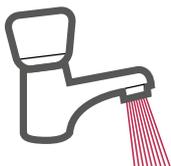
The heat generated during compression is paid for as part of the process, then it creates additional costs as this heat needs to be removed by cooling fans or by the use of water. At the same time, most companies consume a lot of energy and money to generate hot process water, space heating or preheat water for steam generation.

Given that compressed air systems account for 10% of all electricity used in industry, and energy is the largest single lifecycle cost of a compressor, it makes sense to recover this heat, save energy and reduce costs.

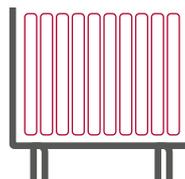
Give your compressed air system an efficiency upgrade

With a heat recovery system from CompAir, the heat generated by the compressor can be re-used, providing the following **BENEFITS:**

- ✓ **Significant savings in energy costs**
- ✓ **Extremely short payback time – typically less than a year**
- ✓ **Lower CO₂ emissions**
- ✓ **Turnkey solutions**
- ✓ **Easy installation and operation**
- ✓ **Small footprint**
- ✓ **No impact on the compressed air supply**
- ✓ **High reliability**



Hot Water



Space Heating



Industrial Process



Steam Generation (pre-heating)

Different Oil-free Heat Recovery Solutions

ULTIMA™

The Ultima compressor range offers various heat recovery options to accommodate individual customer needs. The water-cooled models can for example be delivered with just a preparation for external heat recovery, with an additional control of the cooling water outlet temperature (Heat recovery+) or with E-max, an absolute turnkey solution that includes all main components needed in a heat recovery system.

Absolutely unique is the integrated heat recovery option for the air-cooled version of Ultima. In fact, Ultima is the first and only air-cooled oil-free compressor on the market with optional heat recovery, providing usable water temperatures up to 85°C. It's a turnkey solution with all required components included in the compressor package. This means no additional footprint, no complex installation and thousands of Euros of potential savings every year.

	Water-cooled			Air-cooled
	Preparation for external heat recovery*	Heat recovery+	E-max	Integrated Heat recovery
Internal thermal management to achieve cooling water outlet temperatures up to 90°C	●			●
Control of the cooling water outlet temperature		●	●	●
Control of the heat recovery temperature on customer side			○	
Control of backup cooling water flow			○	●**
Heat exchanger for heating the customer's water			●	●
Backup heat exchanger			●	●
Visualization of the current and accumulated heat recovered			●	●
Water pump			●	●
Compressed air aftercooler	○***	○***	○***	○***

● Standard Option ○ Optional Add-on

* For the Ultima, this option is part of the standard scope of supply

** The two radial fans of the air-cooled Ultima serve as additional / emergency coolers if necessary

*** In many cases the Ultima already has a sufficiently low air discharge temperature, so an external aftercooler will not be needed

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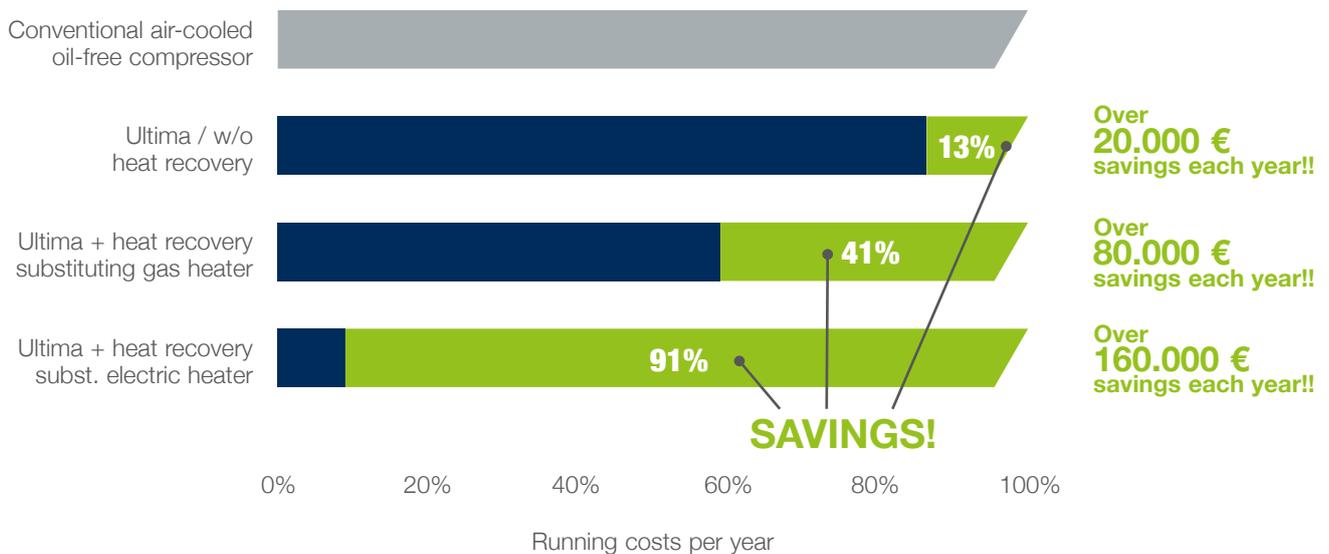
Did you know that the air-cooled ULTIMA is the only air-cooled oil-free compressor on the market which is applicable for heat recovery and delivers substantial energy saving?

[Learn more...](#)

So how much can you actually save?

Example:

- Average load of 20m³/min @8 bar
- Electricity price 15 cents per kWh
- Gas price 6 cents per kWh
- 8.000 hours per year
- Gas price 6 cents per kWh



D-Series

Also all water-cooled models of the D Series compressor range from 37kW up to 315kW, fixed speed and regulated speed, can be delivered with a preparation for external heat recovery, which enables them to provide hot water with temperatures of – depending on model - up to 75°C or even 90°C. Moreover, the models up to 200kW are also compatible with E-max, the turnkey heat recovery box.

E-max

a
turnkey heat recovery system
for oil-free compressors



Scope of supply

- Heat recovery heat exchanger to heat up your usable water
- Backup heat exchanger, operated in times when the heat demand is not sufficient to cool down the cooling water to the requested max. inlet temperature for the compressor
- Speed regulated pump to control the cooling water temperature before the heat recovery heat exchanger
- Intuitive coloured touch screen controller providing a quick and comprehensive performance overview, including visualisation of current and cumulated recovered heat

Broad range of further options:

- **Electrical valve kit 1:** To control the water outlet temperature on the customer side of the heat recovery heat exchanger
- **Electrical valve kit 2:** To control the external cooling water flow through the backup cooler in order to reduce water consumption when the backup cooler is not needed

- Additional **backup pump**
- **Connecting kit** comprising ball valves and adapters from Victaulic to 1" internal threads for all water connections
- **Compressed air aftercooler** (provided loosely. The E-max box as a standard includes inlet and outlet connections for the aftercooler's cooling water)

U-Cooler / E-Cooler – a perfect extension for E-max

Highly efficient V-shaped cooling module for trouble-free waste heat removal from the ULTIMA cooling cycle. A complete package of cooling module, pump station and control integrated into the compressor. Easy to install, easy to operate and virtually maintenance-free.



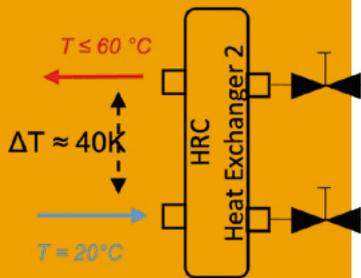
Best Practice Example

ULTIMA+

Heat Recovery in a bottling company

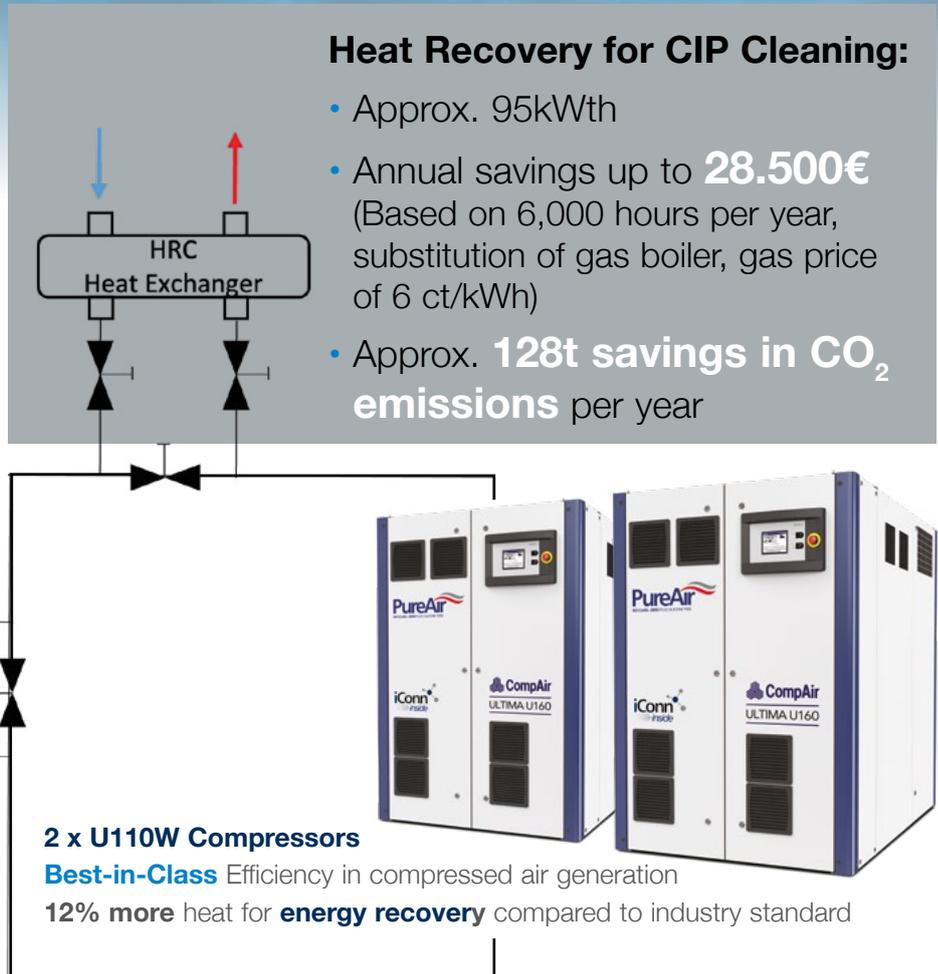
Optional Extension:

- Usable water (Pre-) Heating to 60°C
- Additional 95kWth annual savings valued at 28.500€ or 128t of CO₂



Heat Recovery for CIP Cleaning:

- Approx. 95kWth
- Annual savings up to 28.500€ (Based on 6,000 hours per year, substitution of gas boiler, gas price of 6 ct/kWh)
- Approx. 128t savings in CO₂ emissions per year



TOTAL SAVINGS:

Up to 57.000€ and 256t CO₂ emission savings each year!!

Global experience - truly local service

With over 200 years of engineering excellence, the CompAir brand offers an extensive range of highly reliable, energy efficient compressors and accessories to suit all applications.

An extensive network of dedicated CompAir sales companies and premium partners across all continents provide global expertise with a truly local service, ensuring our advanced technology is backed up with the right support.

CompAir has consistently been at the forefront of compressed air systems development, culminating in some of the most energy efficient and low environmental impact compressors on the market today, helping customers achieve or surpass their sustainability targets.



CompAir compressed air product range

Advanced Compressor Technology Lubricated

- Rotary Screw
 - > Fixed and Regulated Speed
- Portable

Oil-Free

- Water Injected Screw
 - > Fixed and Regulated Speed
- Two Stage Screw
 - > Fixed and Regulated Speed
- Rotary Scroll
- Ultima®

Complete Air Treatment Range

- Filter
- Refrigerant and Desiccant Dryer
- Condensate Management
- Heat of Compression Dryer
- Nitrogen Generator

Modern Control Systems

- CompAir DELCOS Controllers
- SmartAir Master Sequencer
- iConn - Smart Compressor Service

Value Added Services

- Professional Air Audit
- Performance Reporting
- Leak Detection

Leading Customer Support

- Custom Engineered Solutions
- Local Service Centres
- Genuine CompAir Parts and Lubricants

CompAir policy is one of continuous improvement and we therefore reserve the right to alter specifications and prices without prior notice. All products are sold subject to the Company's conditions of sale.