



Save energy,  
save money  
and reduce  
your carbon  
footprint



Heat recovery systems for  
oil lubricated compressors



Recovering the excess heat  
from your compressor saves money  
and reduces your carbon footprint

## 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. 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.



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

- **Energy prices** will almost certainly continue to increase
- **Concerns for the environment and sustainable development** are growing
- Compressed air is considered expensive, but alternative electric tools are not necessarily cheaper options, if you do consider that you can re-use the **heat to save energy somewhere** else in your facilities
- Countries and industries face **stringent targets** to reduce carbon dioxide emissions

Turn this waste heat to your advantage: recovering it will allow you to save huge amounts of energy, cut CO<sub>2</sub> emissions and improve operating costs.



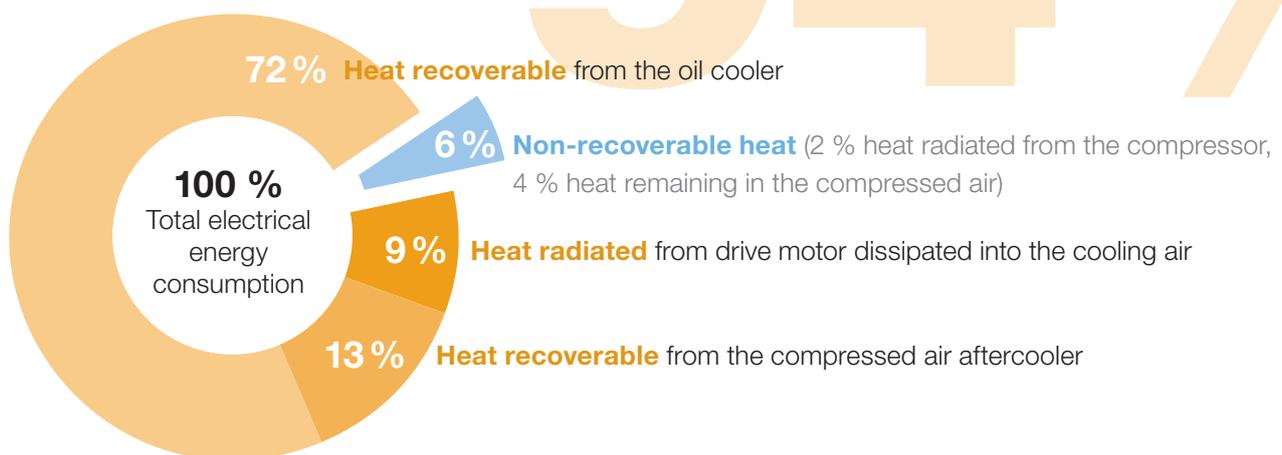
## Give your compressed air system an efficiency upgrade

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 – low investment costs payback time typically less than 1 year
- Lower CO<sub>2</sub> emissions
- Turnkey solutions
- Easy installation and operation
- Small ecological footprint
- High reliability
- No impact on the compressed air supply

## Heat recovery potential

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





## CompAir heat recovery solutions

The basic principle lies in the transfer of the heat to a medium and then transporting it to where the heat can be utilised.



## CompAir heat recovery options

Instead of simply removing the heat from the airend, it can be used to generate free hot process water or supplement hot water heating systems by utilising a high-efficiency oil-water heat exchanger – factory fitted, retro fitted or as a CompAir energy recovery box.



### 1. Factory fitted



### 2. Retrofit kit

Inclusive all necessary piping and fittings for subsequent installation on site



### 3. Energy recovery box

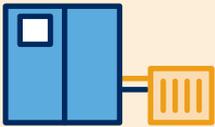
Plug & play solution for exclusive series



## Applications for heat recovery

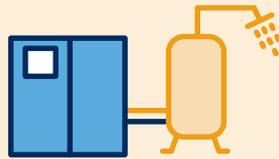
### Oil to water heat exchanger

By re-directing the hot cooling oil to a high efficiency **oil to water heat exchanger**, the heat can be transferred **to water, raising the temperature** to a required level for a multitude of applications – heating, process, production or washing:



#### Heating

Heat recovery systems are perfect for augmenting your facility's heating system. By utilising the heat energy from your compressor(s) that would otherwise go to waste, you can keep your premises warm, reduce your heating bill and cut back on your company's carbon emissions.



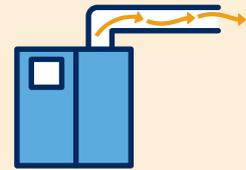
#### Hot water

Heat recovery systems can provide up to 72 % of the energy required to heat your hot water system. By utilising the heat energy that would otherwise go to waste, you can have running hot water and cut back on your company's carbon emissions.



#### Industrial process

Heat recovery systems can also be used to pre-heat the water supplying your process application requirements, for example, steam generation. Anywhere hot water is required, supplying pre-heated water makes the process more cost efficient.



#### Ambient air heating

The compressor's heated cooling air can be utilised to increase the ambient temperature of rooms instead of being dissipated into the atmosphere. By ducting the air to somewhere where it would be more useful, you can increase the ambient temperatures of those rooms and save on their heating costs.

### Defined air outlet

An enclosed, air cooled compressor with **defined air outlet** can transfer the total amount of heat of the cooling air for **ambient air heating**:

For more information – click here:



[Heat recovery](#)

For video – click here:



[Video about heat recovery](#)



## Potential of energy and CO<sub>2</sub> savings by heat recovery <sup>1)</sup>

Best case scenario: Based on 8.760 hours a year 15 °C IN 75 °C OUT Temperature Increase 60 °C

Model	Compressor nominal power [kW]	Usable heat via recovery systems (approx.) [kW]	Annual gas savings [kWh]	Annual CO <sub>2</sub> savings [t]	Annual savings at 0,042 € per kWh CNG [€]
L15	15	13,82	12.109	24,95	5.086,13
L18	18	16,85	14.758	30,40	6.198,72
L22	22	19,66	17.218	35,47	7.231,84
L23	22	16,63	14.569	30,01	6.119,25
L26	26	18,79	16.461	33,91	6.913,95
L29	30	20,38	17.849	36,79	7.496,74
<b>L30</b>	<b>30</b>	<b>28,94</b>	<b>25.355</b>	<b>52,23</b>	<b>10.649,08</b>
L37	37	36,29	31.788	65,48	13.351,08
L45	45	42,35	37.086	76,40	15.576,26
L55	55	49,25	43.141	88,87	18.119,32
L75	75	66,96	58.657	120,83	24.635,92
L90	90	84,38	73.920	152,28	31.046,56
L110	110	101,95	89.310	183,98	37.510,18
L132	132	114,41	100.221	206,46	42.092,99
L160	160	144,32	127.342	260,44	53.483,79
L200	200	181,87	159.319	328,20	66.914,35
L250	250	197,64	173.132	356,65	72.715,71
L290	250	227,30	199.118	410,18	83.629,69

### Return on your investment

Assume you use a **heat exchanger with an L30** and your total investment is 4.000 €, incl. the CompAir heat exchanger and necessary adjustments to your site, you could get your investment **back in 5 months <sup>1)</sup>**.



<sup>1)</sup>For illustration purposes only. Depending on electricity cost, water input heat and required temperature rise, the savings and pay back time will vary

CompAir's **heat recovery systems** give you the opportunity to save ...

... energy ... money ... emissions

kWh

€

CO<sub>2</sub>

# Heat recovery systems for a sustainable future.

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



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