OUR PROJECTS

AN INSIGHT

REDUCING ALUMINUM CONSUMPTION DURING CASTING GERMANY, ITALY, MEXICO, POLAND, SPAIN AND THE CZECH REPUBLIC

One of our measures for lowering resource consumption involves reducing the weight of raw castings. By implementing selected wheel projects, we aim to reduce our use of aluminum during smelting and casting by around 1 kg per wheel.

Through collaboration between our design and development departments with colleagues in the foundries in the plants and using simulations, savings of 1 kg of aluminum per wheel have been achieved.

The advantages of reducing the weight of the raw castings include not only energy savings during smelting and casting, but also shorter machining times during mechanical processing.

ALUMINUM SAVINGS ACHIEVED:

So far, with around **90** projects implemented and **1,130,887** slimmed down wheels cast, total aluminum consumption **has fallen by** 2,018 TONS.

USE OF THERMAL DISCHARGE IN FURNACES AND CHIPPING OVENS IN THE PLANTS – POLAND

A furnace consumes around 85 m3 of gas to smelt one ton of aluminum. This corresponds to a CO_2 emission of around 180 kg. Some of the energy used here is simply wasted, escaping up the chimney as hot air.

Our plants in Poland use this discharged hot air instead of wasting it: this started as a pilot project, but now 4 recuperators and other heat recovery systems have been installed on the furnaces and chipping ovens. The recuperators use the hot exhaust air to pre-heat the air used in combustion. This reduces gas consumption. Through using a recuperator, around 20% of the energy is recovered.

SAVINGS ACHIEVED IN THIS WAY SINCE INSTALLATION IN 2016:

GAS:	1 619 640 m3
CO_2 SAVINGS:	**2,831 TONS** CO_2 EMISSIONS

Recuperator on chipping oven, Poland

IMPROVEMENTS IN SPECIFIC COMPRESSOR CONSUMPTIONS IN THE PLANT – ITALY

Our plant in Italy aims to reduce the specific consumptions of the compressors. This is to be achieved through retrofitting and various improvements to increase reliability, load modulation, efficiency and performance.

Compressor Room: before

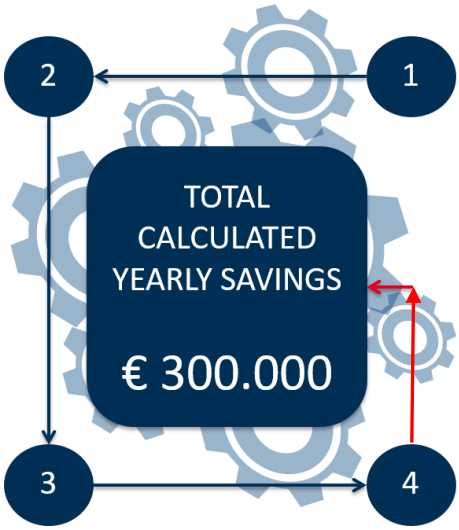
RONALGROUP

Compressor Room: after

RONALGROUP

SAVINGS ACHIEVED IN THIS WAY:

ΔEnergysavings ≅ 345 kWh
Energy savings per hour assuming an average flow rate of 240 Nm3/min



ΔCs = 0,024 kWh/Nm3
Reduction of specific consumption

ΔSavings ≅ 38 €/h
Savings per hour, considering a kWh cost of 0,11 €/kWh

WH = 8000 h/year
Working hours on a yearly basis

CO_2 SAVINGS: **110 TONS** CO_2 EMISSIONS[1] PER YEAR

[1] Based on the RONAL standard of 0.04 kg of CO_2/kWh, assuming 8,000 working hours per year and the achieved energy saving.