

Metal forming and stamping technology

# Energy-saving solution.

For industrial applications.

## Positive energy and CO<sub>2</sub> balance.

Efficient central cooling with energy-saving circuitry.

At a leading precision company for metal structures, stamping, drawing and coating technology as well as container construction, the challenge was to organize the production processes even more efficiently with different manufacturing methods and at the same time improve the working and environmental conditions. Since precision is especially important here, powerful laser and machine tools are required, which, in addition to the production halls, require high energy and power and precise cooling. Extensive energy measures ensure pleasant hall temperatures, optimized and stable production processes in year-round shift operation, an improvement in the CO<sub>2</sub> balance and a reduction in energy costs.

## An energy saving system that works sustainably.

### Optimization of environmental conditions.

Before the energy-saving solution was put into operation, extreme temperatures prevailed in the laser cutting and welding hall due to the machining process and the waste heat it generates. In the summer hall doors had to open. This caused increased ambient noise. The installation created comfortable working temperatures for employees in all production halls and reduced ambient noise.

### Precise cooling and high operational reliability.

With the conversion of the individual decentralized coolers into a central cooling unit with energy-saving circuitry, operational downtimes were reduced to the highest level and the operational reliability of the production facilities was achieved for continuous shift operation.

### Reduction of energy costs by approx. 40 %.

At the same time, **approx. 243 tons of CO<sub>2</sub> are saved.**

### Few repairs and service intervals.

With the new cooling unit, the dimensional accuracy was improved. There is less wear and tear on equipment and maintenance and servicing costs have been minimized.



Efficient.

**IE5**

High performance pumps.

Amortisation.

**< 2 years**

High Return On Invest.

Up to **40% less energy consumption**

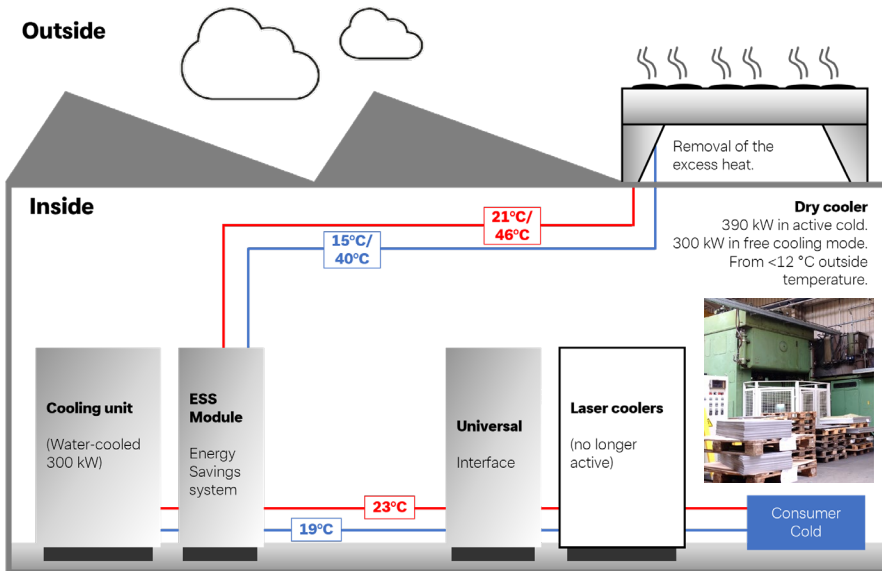
Compared to the previously installed, individual cooling systems.

# Future-proof. Efficient and economical.

## Energy saving system for metal processing industry.

Riedel Kooling develops the energy saving solutions holistically and individually according to the customer's requirements. From the analysis of the overall operational processes in manufacturing areas, to the design and planning of the energy-saving system, to the coordination of installation. Each plant is commissioned by our own experienced experts

It took only a few weeks to implement the energy-saving system, from reviewing the requirements to planning and installing the new system components. The construction phases were coordinated in such a way that, despite ongoing production with shift operation and full capacity utilization at the customer, there were no restrictions in production and production-related areas.



Installation of a central cooling system (Plug&Play). 300 kW at 19 °C process water temperature including an energy-saving circuit and passive cooling from an outside temperature of 12 °C.

With the specially developed system interface, the production process was optimized, and the hydraulic complexity reduced. The hall air conditioning in the welding shop was realized via convectors with a required cooling capacity of approx. 80 kW.

Highly efficient and precisely controlled cooling for the three high-performance presses was achieved by using heat exchangers as system separators with approx. 30 kW each. The decentralized temperature control is now controlled via thermostatic temperature controllers.

### Planning and optimization of the overall hydraulic process.

Constant, precise cold supply whenever it is needed. In summer operation as well as in winter operation.

### Concept development and coordination of all trades.

### Advice and support.

During the implementation and installation of the plant.

### Commissioning by Riedel Kooling factory customer service.

### 1x Precision cooler.

**300 kW**

Water cooled with integrated energy saving circuit.

### 2x Highly efficient recirculating chiller/dry coolers.

Extremely quiet operation. Conforms with all technical conditions to the specifications of TA Lärm.

### 2x High efficiency process water pumps.

Electronically controlled, redundant design.

**Heat exchanger** integrated in the process water return as return flow boost for maximum energy utilization during the heating period.

### 3x Heat exchanger and cooling water valves.

**per 20 kW**

For oil cooling in the precision hydraulic presses.



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