



PRODUCT CATALOGUE

# COOLANT AUDIT

of Machine Tools and Lubricoolant Units

Efficient coolant systems.

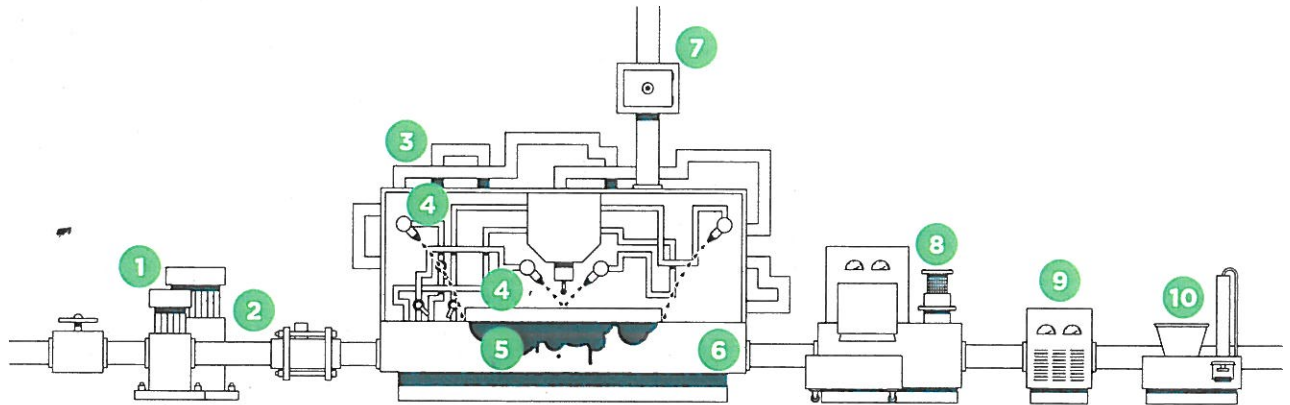


**grindaix**



# COOLANT AUDIT

## Overview of Services



We audit and evaluate wastage of your:

- 1 Pumps
- 2 Valves
- 3 Piping
- 4 Nozzles
- 5 Lubricoolants
- 6 Machine bed flushing systems
- 7 Lubricoolant/air extraction systems
- 8 Filtration plants
- 9 Lubricoolant cooling units
- 10 Disposal units (chip compression, vapourisation, chip conveyors....)

### ADDITIONAL SERVICES

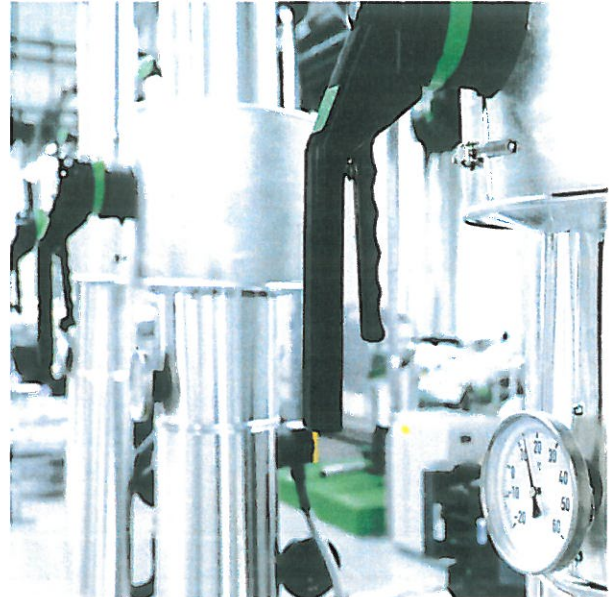
- Consumption optimization
- Machine retrofitting
- Unit supply
- CO<sub>2</sub> balance
- TCO calculation
- Investment benchmark
- Product suitability analysis

You could call it “analysis for significantly reducing overall lubricoolant requirements”.

Or simply “Coolant Audit”.

**YOUR BENEFITS:**

- Clear annual savings per machine
- Reduction in overall lubricoolant requirements
- Optimum feed to machining sites
- No waste in auxiliary consumers
- Needs-based pump selection possible
- More robust and smaller lubricoolant systems
- Only as much lubricoolant consumption as necessary
- No unnecessary losses
- ROI < 4 months incl. follow-up investments



At grindaix we have found a way to prevent wastage of lubricoolants in existing and planned production systems in metal processing, namely the grindaix audits!

By “auditing” we mean the measurement, recording, analysis and evaluation of lubricoolant systems (piping, valves, fixtures, branch ducts, throttles, all nozzle types) with respect to the extent of their wastage. To do that, our experienced engineers and technicians visit you in your production environment and check machine tools for all production processes as well as all types of lubricoolant treatment systems, including peripheral pipe systems, in the briefest possible time. Naturally, we bring the highly specialized equipment required for the audits along with us.

The result is impressive. You find out precisely how much lubricoolant is exiting at which points in your production system as well as when and at what speed and volume this is occurring. You also receive detailed information on oversupply, undersupply or waste. Naturally, we also recommend remedial measures which can be implemented directly!



# Audit Types

## COOLANT AUDIT S



First aid fast! The Coolant Audit S provides an initial and immediate way of determining lubricoolant oversupply and undersupply of a machining site (all production processes). Flow rates and supply pressures are measured on a machine tool for a selected production scenario and the geometries of the process-relevant lubricoolant supply nozzles are recorded.

One particular advantage of the Coolant Audit S lies in the fact that the analysis is available within the space of one day.

### The Audit Result

We record your machining task on site, compile comprehensive documentation relating to supply and provide information on the exit speed and the flow rate of the lubricoolant per nozzle at the machining site. Furthermore, we report on the possible undersupply or oversupply of the analysed area.

## COOLANT AUDIT M



With the Coolant Audit M nothing escapes us. We carry out a complete analysis of a production machine. This encompasses all supply lines, fixtures, piping as well as all lubricoolant exiting within the machine. The relevance thereof is checked with respect to waste. When it comes to new machine developments, we would be happy to assist you as early as the design phase. Or if you intend to procure new machines, we will audit the planned machines prior to purchase to check their lubricoolant-related operating costs.

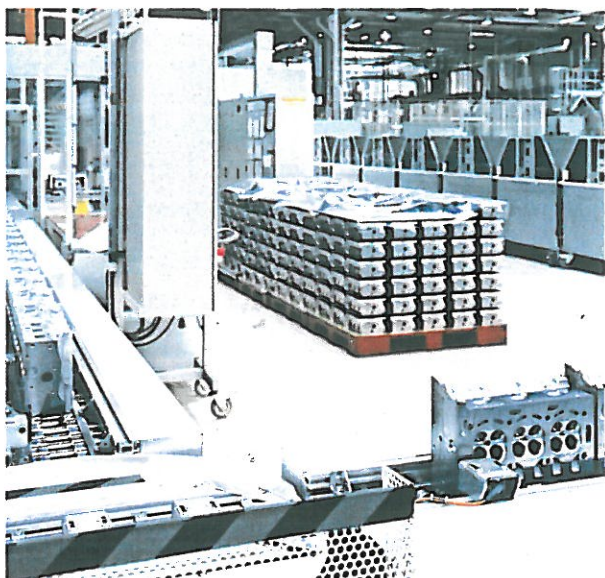
### The Audit Result

We completely log all machine lubricoolant periphery data (geometries, pressure requirements, flow rates) and record all possible production scenarios of the machine and the related circuits of lubricoolant consumers. From this, we determine the exit speed, the flow rate of lubricoolant discharge within the machine, the technical savings potential including implementation measures, and we provide detailed information on all supply scenarios (performance-related characteristic curve).



# Audit Types

## COOLANT AUDIT L

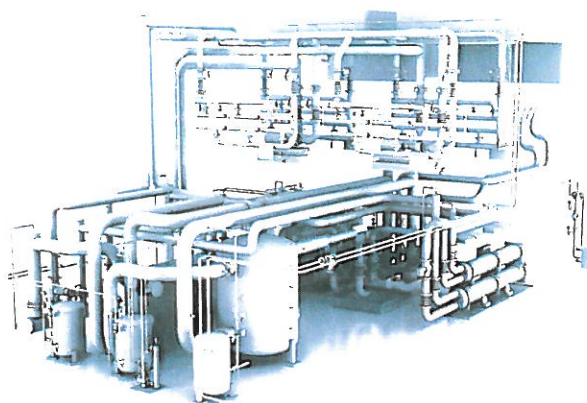


Get to know your production line like never before. The Coolant Audit L provides a complete analysis of a production line. This encompasses all machine supply lines, fixtures, piping as well as all lubricoolant exiting within the machine. The relevance thereof is checked with respect to waste. In addition, the lubricoolant circuitry of the machines is analysed. If you intend to procure new machines, we will audit the planned machines prior to purchase to check their lubricoolant-related operating costs and suitability.

### The Audit Result

We completely log all machine lubricoolant periphery data (geometries, pressure requirements, flow rates) and record all possible production scenarios of the machine and the related circuits of lubricoolant consumers. As a subsequent step, we provide information on the exit speed and flow rate of lubricoolant discharge within the machine, as well as on the technical savings potential and related implementation measures. Furthermore, information is given on all supply scenarios (performance-related lubricoolant characteristic curve). Lubricoolant needs and pump requirements are determined for the entire production line when using a central facility.

## COOLANT AUDIT F




Here the focus is on the filtration of lubricoolants. During Coolant Audit F we carry out a complete analysis and evaluation of a lubricoolant filtration facility. In so doing, we do not look into plant-specific implementation but rather into the suitability of the facility for your lubricoolant environment. We also monitor your requirements with respect to the production process and lubricoolant discharge (pressure, flow rate and exit speed). From this, we determine how much lubricoolant is required for which process (machine tools) and work together with you and your supplier to design your lubricoolant filtration systems based on needs, ensuring that they are not unnecessarily over-dimensioned.


### The Audit Result

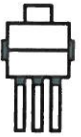
The Coolant Audit F provides a number of different results, from a statement about the facility dimensions, the extent to which existing facilities may be exploited for new application fields, the benefits and drawbacks of various types of filtration and specific lubricoolant features (oil, emulsion) to the selection of lubricoolants (viscosity, additives) as well as site planning (extension or new building). Naturally an investment benchmark may also be carried out.


# Procedure for a Coolant Audit

- 1** Our technicians visit you with all the necessary measurement equipment. Within a very short space of time (approx. 3h/machine), the periphery inside the machine is recorded.


- 2** By means of state-of-the-art measurement technology, we check the current lubricoolant flow rate per line. Depending on the audit, we also monitor all scenarios of your production process.


- 3** All pipes are completely recorded - from the lubricoolant supply connection to all nozzle exits. All geometrical and type values are also logged.


- 4** We demonstrate how machining sites may be supplied in a robust way to meet the highest productivity demands, and how all waste in secondary zones may be avoided.



## Examples

### Savings

Unit	Lubricoolant [l/min]
Schaudt CF41	- 125
Mikrosa Kronos L	- 280
Landis LT 1	- 97
Blohm Profimat	- 86
ABA SLM V2 4002	- 148
Diskus DDW	- 245

...





# Improve Your CO<sub>2</sub> Balance

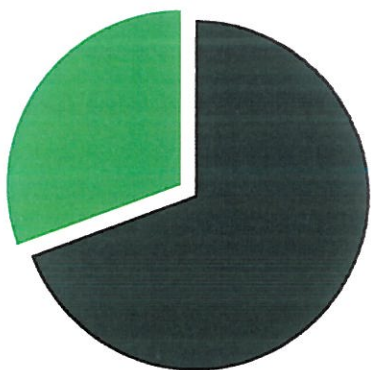
How much potential does your production system hold?

By carrying out a complete analysis of current consumption data of lubricoolant systems, we not only provide information on the CO<sub>2</sub> equivalent of your production unit but also reveal **savings potential when it comes to energy and CO<sub>2</sub> emissions**.

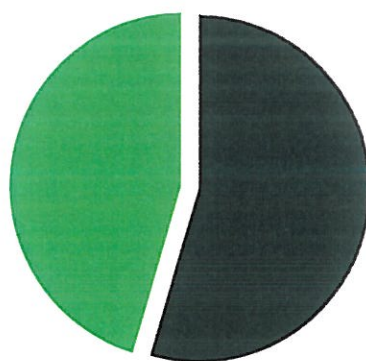
Avoid purchasing costly additional **CO<sub>2</sub> emission rights** and reduce your emissions by avoiding waste.

Upon request, we will prepare your **CO<sub>2</sub> emission data for your production unit** in a matter of days.

Reduction of energy costs  
2,600 euros/annum

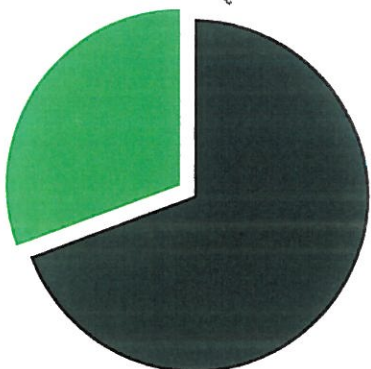


Reduction of coolant costs  
10 000 euros/annum

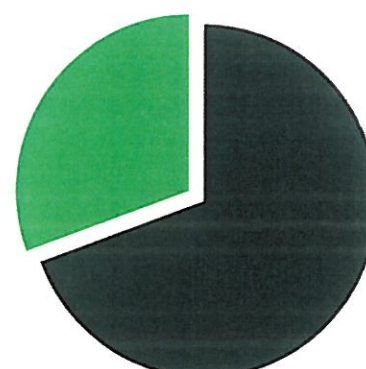


SAMPLE

Reduction of CO<sub>2</sub> equivalent (energy)  
6,136 kg CO<sub>2</sub>/annum



Reduction of CO<sub>2</sub> equivalent (coolant)  
578 kg CO<sub>2</sub>/annum





# grindaix

Efficient coolant systems.



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