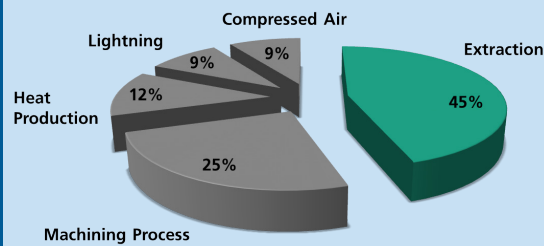
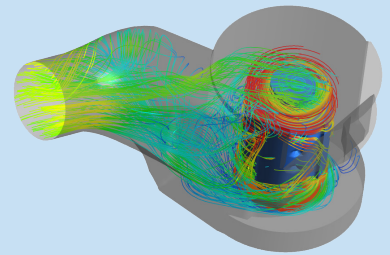


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1 *Adaptive Extraction System (Fraunhofer ADExSys) - for energy efficient collection of dust and chips*

2 *Energy consumption breakdown of a typical CNC machining center for plastics and wood*

3 *Air flow simulation of an extraction hood - used as a design tool for high efficiency extraction hoods*

EXTRACTION IN THE MACHINING OF LIGHTWEIGHT MATERIALS

Motivation

In the machining of lightweight materials, the collection and extraction of chips and dust is a significant cost factor. Nevertheless, the collection effectiveness is usually inadequate. This endangers the process reliability and results in the requirement of manual cleaning steps with additional costs. Furthermore, fine dust poses a danger to machines and their operators.

Customer Benefits

Through tailored extraction strategies and flow optimized extraction hoods the required extraction power is reduced and the collection effectiveness is increased. This results in less energy consumption, lower investment costs due to smaller extraction and filter systems and increased process reliability and productivity by eliminating manual cleaning requirements.

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Our Claim

The Department of Lightweight Construction Technologies in collaboration with the Institute for Machine Tools IfW of the University of Stuttgart can draw on 25 years of experience in the design and investigation of extraction hoods and systems. Based on extensive fundamental investigations into extraction systems, cutting processes and tool design, we develop highly effective extraction solutions for stationary and throughfeed machines for the machining of all lightweight materials.

Our Services

- Investigation of machining processes
- Optimization and selection of appropriate tools and process parameters for extraction optimized chip ejection
- FEM simulation of air and particle flows
- Design and development of high efficiency extraction hoods and holistic extraction systems for all lightweight materials