Adaptive suction hood system

Reference No: B74143

CHALLENGE
Suction hoods are used for collecting chips produced during machining wood work pieces. Standardly, chips are guided toward a hood using an air flow. This flow must be strong enough to re-direct the mechanical impulse of the chips towards the suction hood. Usually very high air flows are required in order to collecting the chips, which causes high energy consumption.

INNOVATION
The present invention provides a suction hood system consisting of several collecting elements forming a ring-like shape. These elements can be moved between a first and a second position, increasing or decreasing the circumference of the ring-like structure. Switching from one position to another, the system can be adapted to the size of the tool, which is place inside this ring-shape structure. This configuration has the following advantages:

- The distance between the collecting elements and workpiece can be reduced, significantly reducing the energy consumption.
- The size of the gaps through which the chips can escape form the suction hood in minimized and the overall performance of the system is increased.
- This system can be adapted to a wide variety of workpieces and machining tools of different shapes and sizes.

COMMERCIAL OPPORTUNITIES
This system can be widely used in the wood industry, leading to a reduction of the energy consumption and to an improvement of the performance for a wide range of machining processes.

DEVELOPMENT STATUS
A prototyp has been successfully constructed and tested. The working principle of the invention has been validated.

Figure: (left) schematic picture of the aperture of the suction system in the first and the second position. (right) side prospective of the hood system. Images adapted from (1).

REFERENCES:
1 EP 3 028 808 A1