



# Press Release

## **Efficient solution for the milling of aircraft flaps at GKN Aerospace**

**Since March 2015, the new Fooke 5-axis milling machine equipped with a customized Keller dust extraction system is operating successfully at the Munich plant of GKN Aerospace. The state-of-the-art, efficient machine is 14 m long and is utilized for the manufacture of aircraft flaps composed of carbon fiber reinforced plastic (CFC).**

München/Borken/Kirchheim unter Teck, October 13th, 2015 – Whoever flies automatically comes in contact with a product of GKN Aerospace. The British enterprise, operating in 9 countries with 12.000 employees supplies the aircraft industry with metal components as well as composite materials.

### **Fooke quotation meets all GKN requirements**

“We specialize in CFC processing and manufacture our own components from scratch”, informs Hans-Jochen Platte, Division Manager Machining at GKN Aerospace - Munich. The high quality of all components produced is the flagship focus of the company. After deciding to acquire a new milling machine, the manufacturer had specific ideas regarding the accuracy and speed of the system, among other requirements. The decision was made in favor of the ENDURA® 611LINEAR milling machine manufactured by Fooke in Borken, Germany, featuring portal construction with 5 axes. The milling machine specialist offered a total package that included the enclosure, as well as a highly-effective dust extraction system from Keller Lufttechnik. “The concept met our specifications, taking into consideration all our standards”, reports Hans-Jochen Platte.

### **Important: Fail-proof system**

The milling machine with its corresponding extraction plays a central role in the manufacturing of aircraft flaps, informs the specialist. “We depend on pinpoint accuracy and on the fact that both machine and extraction operate continuously and trouble-free. We work in three shifts and can hardly afford a system standstill.” Safeguarding against failure, therefore, played a major role in the purchase decision.



### **Fast and precise: Fooke 5-axis portal milling machine**

Andreas Feldevert, Head of Sales Europe with Fooke, explains: „Our milling machines are driven by linear motors. They are extremely dynamic, very precise and reliable. The high speed with which all axes function translates to a productivity gain for our customers. It conforms to the highly important accuracy in the aircraft industry.”

### **Reliable extraction essential**

Fooke and Keller Lufttechnik, based in Kirchheim unter Teck near Stuttgart, share a very similar company philosophy – both are family-owned enterprises with very high standards of productivity. Experts from both companies designed a dust extraction technology that was custom-tailored to GKN Aerospace - Munich requirements. “The dust collection was a challenge”, informs Peter Wörner, Project Engineer Sales with Keller Lufttechnik. “The machine is very long, measuring 14 meters. We had to ensure continuous extraction along its entire length. During production, the milling spindle is additionally cooled with diagonally supplied compressed air. This swirls the dust upward, making it difficult to collect.” A flow simulation helped to display this effect and to achieve a precisely applicable solution: “The entire booth is supplied with an air flow from the top-down. Collection devices which discharge chips, besides the dust, are situated on the bottom.” The necessary back pressure flaps required for explosion protection inside the ductwork can also be installed on the bottom. “In view of space requirements, this offers a smart solution,” according to Wörner.

### **Clean air recirculation: Significant annual savings of heating costs**

The extracted air passes through two filtration levels and is particulate-free in order to be recirculated back into the production area. Mr. Platte informs: “A lot of energy is required to heat 32.000 cubic meters of air per hour. It’s therefore cost-effective to recirculate already heated process exhaust air as a clean air supply back into the workplace.” According to Keller’s calculations, GKN Aerospace – Munich annually saves a very significant amount of heating costs.

### **"The system operates problem-free"**

The system has been operating since March of 2015 and to GKN’s total satisfaction: “Everything is running smoothly”, says Platte. It was a pleasure to complete the system: “Fooke and Keller Lufttechnik provided highly-qualified experts who designed precise solutions and achieved them promptly and accurately.”



### **About Keller Lufttechnik:**

Clean air during production: Keller air pollution control systems have ensured the filtration of foreign substances from the air for nearly a century. Keller has contributed to workplace well-being and environmental protection in the industry. The family-owned company, now run by its fourth generation, employs 380 people – at its parent company in Kirchheim, as well as in Switzerland, the USA, and China. Keller maintains representative offices in 16 other countries. As a developer and manufacturer of high quality air pollution control systems for almost all aspects of industry, Keller offers a comprehensive range of services from plant design to assembly and maintenance. Keller specialists are well-known for their realistic solutions when managing innovative or especially challenging tasks.

### **Link:**

Keller Lufttechnik: [www.keller-lufttechnik.de](http://www.keller-lufttechnik.de)

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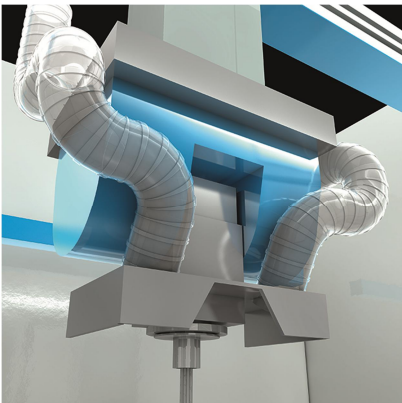
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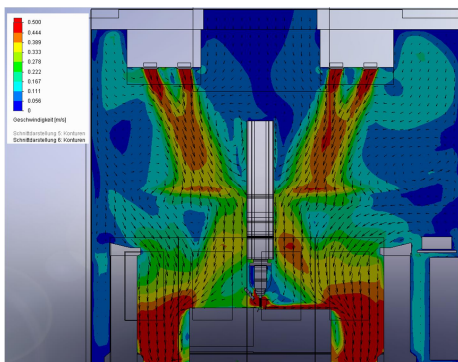
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*Image 1: The complete package consisting of Fooke milling machine with enclosure (in the background) and Keller Lufttechnik dust extraction system (in the foreground), exactly met the operator's requirements and considered all standards.*



*Image 2: Fine fibers, created during the milling process must be extracted reliably.*



*Image 3: Dust collection was a challenge – a flow simulation helped finding the perfect solution.*