

FlammAerotec



Mubea
FLAMM

AT A GLANCE

Staff 2019 450 (incl. Turkey)

Revenue 2019 91.000.000 EUR

Investment Volume 10% of Revenue p.a.

Certifications
EN 9100
LBA EASA 21G
DIN EN ISO 50001
DIN EN ISO 14001

Company Location Schwerin (Germany)

Branch Ergene (Turkey)



PARTNER OF AVIATION

FlammAerotec is the largest aviation company in Mecklenburg-Western Pomerania. Today 360 (plus 70 in Turkey) staff members produce more than 17,000 different components on an area of 20,000 square metres.

The company was founded in Schwerin in 2005. During the ensuing years, the aircraft technologies milling, forming of aluminium alloys and titanium alloys, component assembly as well as surface protection were constantly further developed.

Precision work, quality thinking, the latest production methods and innovation willingness, have made our company a high performance and proven partner of the leading companies in the aircraft industry.

FlammAerotec is an EN 9100 certified company and since August 2013 an authorised manufacturer by the German FAA. Besides our main clients Airbus and Premium Aerotec, we also supply other customers worldwide.

FlammAerotec's field of activity is the production of structural components for all models of the Airbus aircraft model series A320/ A330/ A340/ A380, as well as A350 and A400M.

With modern machinery, over 430 highly qualified staff members and a certified quality management system, FlammAerotec fulfils even the highest quality and safety demands.

SPECIAL PERFORMANCES FOR SPECIAL REQUIREMENTS

One of FlammAerotec's strengths is our comprehensive range of services. Starting with production scheduling and material procurement we carry out all production steps for you. Over milling, forming, surface protection up to the assembly of multi-part components, all work steps are carried out in an efficient and consistent process chain.

Thanks to our value chain depth, we are in the position of ensuring short delivery times, as well as reacting quickly and flexibly to changing market conditions. This will be proven by our convincing delivery performance that, through modern organisation, high-grade technologies and a competent staff, within the shortest time span increased to a high level and stabilised.

Currently, FlammAerotec in one month produces approx. 10,000 different components out of an assortment that encompasses 17,000 products. Our components are installed in the entire aircraft, starting in the cockpit, over the fuselage and the wings, up to the cabins and in the cargo hold. For Airbus, amongst others, we produce important components for the single aisle family, and the long range families A330/A350.

FlammAerotec components have been installed at Airbus for more than ten years. As we are one of the two large suppliers for cabin bracket components for the A350 as well as for sharklet components in single aisled airplanes, we have sustainably proven our capabilities.



Since more than ten years, FlammAerotec components have been installed in every Airbus. These are found in the entire aircraft, from the cockpit over the fuselage structure, the wings, the cabins, the cargo hold up to the fin.

MILLING

Our CNC driven machinery consists of modern, up to five-axis machining centres. This allows for an overall milling of aluminium plate material and

formed sheet metal parts of aluminium, steel and titanium with the highest precision.

Machine	Application (Material)	Operating Range [mm]	Milling Axis	Speed [rpm]
PORTATEC HSC-Twin-2DContour ¹⁾	2D Sheets (Al)	4050 x 1550 x 130	3	50,000 - 60,000
GROB G750	Plate material (Al)	1000 x 1100 x 1170	5	21,000
GROB G550 ²⁾	Plate material and formed sheet metal components (Al)	800 x 1020 x 1020	5	21,000
GROB G350 ³⁾	Plate material (Al)	600 x 855 x 805	5	21,000
Hedelius Tiltenta 7	Formed sheet metal components (Al, Ti, St)	4200 x 750 x 800	5	18,000
Profile processing machine	Profile Alu	6000 x 100 x 80	4	18,000

¹⁾ Traverse speed: x, y (normal) 30 m/min; x, y (maximum) 42 m/min; z (normal) 6 m/min; z (maximum) 20 m/min

²⁾ Feed (X/Y/Z): 65/50/80 m/min

³⁾ Feed (X/Y/Z): 65/50/80 m/min



Flamm Aerotec uses a comprehensive range of high end machines to manufacture detailed parts and sub-assemblies



TURNOVER
91 Mio EUR



SITES
2



STAFF
450



PRODUCTION AREA
>23.000 sqm

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2019 DATA





Sharklet Baugruppe SA Family

We are one of the two large suppliers for the sharklet components for all SA airplanes.

FORMING TECHNOLOGY

Thanks to modern machines, such as the flexform press, we are able to produce complexformed components. We cover all forming processes from

deep drawing, punching, pressing, hydro forming and bending, up to roll forming.

Machine	Application (Material)	Press Force [kN]	Table Surface [mm]	Pinole Sleeve [mm]	Usable Height [mm]	Lg. Pressing bars [mm]
Müller ZE 500-20.4.1	Deep drawing	4900	2000 x 1400	1800 x 900	1300	
Müller ZE 400	Deep drawing	3900	1600 x 1300	1200 x 900	700	
LASCO FP 220	Deep drawing	2200	1000 x 1600	600 x 600	850	
Fluid Cell QFC-0.7x1.8-800 ¹⁾	Transformation (Al, Ti, St)	170000	700 x 1830			
HYLAT HESP100*6,5*XS4	Pressing (Ti)	1000	2000 x 1500		1000	
HYLAT 100 MP	Punching	1000	1200 x 650		500	
Amada HD 1704 NT ²⁾	NC-bending	1700				4300
Baykal APHS 4106x150 ³⁾	Bending	1470				4100
FARNHAM 1210-EXX	Rollforming					3600

¹⁾ High pressure (80 MPa / 11,600 psi)

²⁾ Opening width: 470 mm

³⁾ Bendability: 6 mm

HEAT TREATMENT

We have heat treatment machines, qualified by Nadcap, for solution annealing and artificial

ageing of aluminium alloys, as well as for the hot calibration of titanium components.

Machine	Application (Material)	max. Working Temperature [mm]	Usable Size [mm]	Usable Volume [m ³]	Furnace Chambers
Convection air furnace LOI hermprocess		600	1300 x 3300 x 1300	5,57	1
Titanium oven Hoffmann	Calibration (Ti)	675	1960 x 1400 x 1450	4	1
Annealing furnace Hoffmann	Artificial ageing (Al)	430	1960 x 1400 x 1450	4,8	1



A controlled heat treatment process is used to alter the microstructure of metals to reinforce desired material behaviour



In-House Surface Treatment

In surface treatment, we implement a modern, fully automatic machine for tartaric sulphuric acid anodising, complemented by automated spray coating machinery. Components with complex geometries or special applications, such as the BR 127, can be manually coated.

TESTING AND SURFACE TREATMENT

Flamm Aerotec's major advantage is that, testing (NDT) and at the end of the process chain, the surface treatment is carried out in-house. These include tartaric sulphuric acid anodising, and the coating of components with primer and top coats, as well as special coats, i.e. BR 127.

Application		Bath Size [mm]	Process Baths	Max. Width [mm]	Max. Height [mm]
Testing	Dye penetrant inspection	3200 x 750 x 600			
TSA	Tartaric sulphuric acid anodising	4500 x 2000 x 600	2		
Ti pickling bath	Titanium pickling	1.400 x 400 x 1500	2		
CEFLA	Automatic primer and top coating machine with dryer	1300 x 5200	110	1300	100

COMPONENT ASSEMBLY

A further FlammAerotec core expertise is the assembly of complex rivet components. The In-house production throughout the entire process chain, and our speed line capabilities can enable the fulfilment of short-term demands. With the production site in Turkey, Flamm Aerotec can

offer very competitive products and services in particular for applications with high demand of manhours. Skilled staff and an integrated quality-management system secures top performance in both production sites.

QUALITY UP TO THE TINIEST DETAIL

For us and for our Clients, continuous and proactive quality assurance is indispensable. For this reason, we strive for perfection in quality management as in every other sector at our company. The successes of these endeavours are shown, among others, in our successful certifications:

- EN 9100
- LBA EASA 21G
- DIN EN ISO 50001
- DIN EN ISO 14001
- Nadcap for heat treatment



VS392441180800 408 FA0208
FA-3 2810842 001 832017



THE MUBEA GROUP

FACTS AND CORE COMPETENCIES

- Global market leader in development and manufacture of automobile products
- Owner-operated family enterprise since 1916
- More than 14,000 employees worldwide
- 45 production, development, and distribution locations worldwide
- Turnover of 2.39 billion euros
- Vertical integration from raw material to the finished product
- Intern development of production processes

LOCATIONS



M Headquarters
Attendorn

● Locations
today

● Locations
in the future

FlammAerotec GmbH

Ludwig-Bölkow-Str. 2
Gewerbegebiet Göhrener Tannen
D-19061 Schwerin

Phone +49 385 50 07 - 0
Fax +49 385 50 07 - 599
Mail info@flamm-aerotec.de

www.mubea.com/en/aviation