ALJO ALUMINIUM-BAU JONUSCHEIT GMBH
INNOVATION IN ALUMINIUM PROCESSING
EXPERTS IN ALUMINIUM PROCESSING

•  More than 40 years experience
•  Family owned
•  250 employees
•  Turnover of 25 million Euros
•  Production area of 11,500 sqm
•  Quality Management System according to aerospace, automotive and marine international standards
THREE DIVISIONS UNDER ONE ROOF

AEROSPACE

MARINE

AUTOMOTIVE
24h After Sale Service

Where you find Aljo Products
ALJO’S COMMITMENT TO EDUCATION

Vocational Training:
17 graduates complete their vocational training in the following areas:
- Elektroniker/in Fachrichtung Energie und Gebäudetechnik
- Feinwerkmechniker/in Fachrichtung Maschinenbau
- Zerspanungsmechaniker/in Fachrichtung CNC Dreh-/Frästechnik
- Kaufmann/frau für Büromanagement

- Our Training Manager secures the best quality outcome both at the extensive on the job training as well as the theoretical study including the formal audits at the end
ALJO’S COMMITMENT TO EDUCATION

- Our own training facility is additionally supporting the quality of the in-house training
- Weekling self organised English classes prepare for international operations all over the world
- An international exchange programme with England and Norway further enhances the English language and intercultural awareness
- Cooperations with other local companies should maximise skills and knowledge and show different ways of working
- The in-house production depth and the wide range of products, combined with the strictest of all quality systems secures a versatile and highly qualified formal training with best perspectives for future development
CLIENTS - SELECTION
CORE COMPETENCIES

Type of Production:
• Prototypes
• Low and high volume series
• Small series
• Component manufacturing
• Assemblies
• Complex projects

Project Management steps:
• Design and development
• Engineering / construction
• Manufacturing
• Assembly
• Delivery logistics
• After Sales Service / Refits
Our best practices approach to manufacturing is mirrored in our approach to customer service.
2D-MACHINING

3 PORTATEC PORTAL MILLING MACHINES

• Control unit: Siemens Sinumerik 840D
• Working area (xyz): 3.400x1.500x250 mm
• Spindle speed: max. 60.000 rpm and 12 KW
• Toll storage capacity: 24
MILLING 3,4,5 AXIS MACHINE CENTERS
DEEP DRAWING & PRESS FORMING

Size
• length 1,000 mm
• width 800 mm
• height 400 mm
ABOUT ALJO / MANUFACTURING PROCESSES

BENDING

Size
• length 3.500 mm
ABOUT ALJO / MANUFACTURING PROCESSES

HEAT TREATMENT FACILITY
HEAT TREATMENT FACILITY

- Furnace with 2 electrically operated circulating air oven
- NADCAP approved
- SPC controlled handling system
- Quench basin
- Time to quench < 10s
- Automated documentation of process
WELDING PERMITS & WELDER QUALIFICATIONS

• DIN EN ISO 3834-2
• DIN 2303 class Q1, Q2 and Q4
• Manufacturer qualification for welding aluminium constructions SIN 4113-3

• EN ISO 9606-2
• ISO 24394 B1, C1 and D (chromium-nickel steel, titan and aluminium)
• EN 287-1
• EWE welding engineers and welding specialists acc. DVS-EWF 1173
ABOUT ALJO / MANUFACTURING PROCESSES

GLUING
GLUING

Trained personnel
• Adhesive specialists acc. DVS 3301
• Adhesive bonder acc. DVS 3305

Processes
• Manually & partly mechanised processing of reactive adhesive systems.

Separate bonding room
• Size approx 180 qm
• Separate area for silicon treatment
COATING
COATING

Liquid Coating
• Drying chamber with for parts up to max. part size:
  height 2.500 mm / width 3.000 mm / length 6.000 mm
• Integrated conveyor system up to 1,5 t parts weight

Powder Coating
• Max. size 3.200 x 700 x 1.300 mm
• Pre-treatment with phosphatisation facility
• Furnace to 220°C
ASSEMBLING
SINGLE PARTS & ASSEMBLIES

- Manufacturing of single parts and sub assemblies in small and large series.
- Currently more than 150,000 items per year.
3D-MEASUREMENT MACHINES

- Zeiss Prismo 10 Navigator
- Mora-AEH
- Range 2.400 x 1.400 x 1.800 mm
- Mobile index arm Faro Type: Quantum (7 axes)

Equipment
- Air conditioned measurement area
- Tension testing machine
- Material testing machine
- Extensive measurement equipment
EXPERT IN SERIAL CRAFTSMANSHIP
CORE COMPETENCIES

- Material procurement
- Production planning
- Tooling
- Manufacturing
- Assembly

- Surface treatment
- Final inspections
- Delivery logistics
- Inventory logistics for clients
### QUALITY MANAGEMENT

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SCOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 9100</td>
<td>AVIATION</td>
</tr>
<tr>
<td>NADCAP</td>
<td>HEAT TREATING</td>
</tr>
<tr>
<td>DIN EN ISO 3834-2</td>
<td>QUALITY REQUIREMENTS FOR FUSION WELDING OF METALLIC MATERIALS-</td>
</tr>
<tr>
<td></td>
<td>PART 2: COMPREHENSIVE QUALITY REQUIREMENTS</td>
</tr>
<tr>
<td>EN ISO 9606-2</td>
<td>QUALIFICATION TEST OF WELDERS - FUSION WELDING - ALUMINIUM</td>
</tr>
<tr>
<td>EN 287-1</td>
<td>QUALIFICATION TEST OF WELDERS - FUSION WELDING - STEELS</td>
</tr>
<tr>
<td>DVS®/IIW 1170</td>
<td>INTERNATIONAL WELDING ENGINEER</td>
</tr>
<tr>
<td>DVS®/EWF 3301</td>
<td>EUROPEAN ADHESIVE SPECIALIST</td>
</tr>
</tbody>
</table>
PRODUCT SOLUTIONS

LOAD MASTER WORK STATION

• This project for the latest A400M military transporter presents a unique challenge.

• The Load Master Work Station is a complex product which has to be built according to exclusive military specifications and procedures.
PRODUCT SOLUTIONS

AIR DISTRIBUTION DUCTS

• The welded parts shown here are for various Airbus single-aisle programs. We set up new production lines to meet the demands of this project.
PRODUCT SOLUTIONS

DRAIN-MAST

- These welded parts are used in almost all Airbus Types. Automated production and the latest in welding technology guarantees the ultimate in production efficiency and quality.
PRODUCT SOLUTIONS

DIFFUSOR T900

• Highly complex forming and welding part made of stainless steel for A380 Airbus aircraft engines.
PRODUCT SOLUTIONS

COMPONENTS

• More than 100,000 single parts and subassemblies per year such as brackets, frames and other sheet metal parts
• Short lead-times
• Unique transportation logistic system that guarantees just-in-time deliveries to all customer facilities.
# PROGRAM PARTICIPATION

<table>
<thead>
<tr>
<th>AIRBUS A319-A321</th>
<th>AIRBUS A400M</th>
<th>AIRBUS A350XWB</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Drain Mast</td>
<td>• Drain Mast</td>
<td>• Metal Ducts for Air condition</td>
</tr>
<tr>
<td>• Air condition Distributor</td>
<td>• FTI Evacuation exit</td>
<td>• Several interior parts and assemblies</td>
</tr>
<tr>
<td></td>
<td>• Insert &amp; retainer flap-sealings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ramp floor panels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Load Master Work-station metal structure</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM PARTICIPATION

AIRBUS A380

- Anti Icing Panel, Inlet Outer Barrel
- Brackets, upper floor crossbeams
- Exhaust Duct for Flap-Track-Fairings
- Jettison components for FTF
- Jettison Pipes
- Crew rest compartment ladder
- Ventilation Scoop
- FTI Evacuation exit
- FTI Tail bumper

All Airbus Programmes: Detail parts sheet metal & assemblies
PROGRAM PARTICIPATION

VARIOUS

- Bombardier
  - CRJ lighting frames wings
- ARJ 21
  - Air grill retainer
- Dornier DO 328
  - New window frames for modification AMSA 4
- Autoflug NH 90
  - Metal part for seats, Eurofighter Metal parts for seats
- Lufthansa Technik
  - Metal parts for engine cowlings & aircraft related components
PRODUCT SOLUTIONS

THE PHOENIX PROJECT

• Aljo delivered the test flight unit of a reusable space transport system.
• The complete set from component manufacturing up to the final assembly was made by aljo.
PRODUCT SOLUTIONS

MANNED SPACE MISSIONS

• We delivered experimental equipment, containers and structure parts for several European Spacelab missions, Space Shuttle flights and the International Space Station ISS.
PRODUCT SOLUTIONS

LAUNCHERS

• Aljo is a main supplier of the world's most successful carrier system, Ariane.

• 85 sets of complete structures of the 2nd stage and heat shield for Ariane 4 systems were supplied.

• We are currently involved in the Ariane 5 project with several parts and subassemblies.
PRODUCT SOLUTIONS

GALILEO PROJECT

- Aljo has been involved with the manufacturing of components and structures for several satellite programs such as Meteosat, Rosat or Abrixas.
- Currently we are producing structures for the Galileo satellites.
PROGRAM PARTICIPATION

VARIOUS

• Astrium:
  • Ariane 5: Single parts, assemblies & integration devices for ESC-A
  • Phoenix: Fuselage and structure overall
  • Ariane 4: Complete structure of intersection for the 2nd stage
  • Space Shuttle: Integrated Cargo Carrier

• OHB:
  • Sarlupe: Panels for satellite structures
  • Galileo: Panels, brackets & subassemblies
MARINE DIVISION

YACHTING  NAVAL  AFTER SALES
CORE COMPETENCIES

- From mega-yachts to naval frigates and submarines, Aljo custom solutions have served the marine industry for over 40 years. We do our best work when handed a challenge or a dream.

- Our portfolio of lightweight marine structures is unmatched in the industry.

- Our product solutions run the gamut from the very stylish to the hardest working to the most advanced and all are built to resist the affects of water, salt, wind and motion without compromising your shipping priorities.
## QUALITY MANAGEMENT

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SCOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN ISO 9001</td>
<td>QUALITY MANAGEMENT SYSTEM</td>
</tr>
<tr>
<td>EN 9101</td>
<td>NAVAL TECHNOLOGY AND YACHT EQUIPMENT</td>
</tr>
<tr>
<td>DIN 2303</td>
<td>WELDING AND ALLIED PROCESSES- QUALITY REQUIREMENTS FOR PRODUCTION AND MAINTENANCE COMPANIES FOR MILITARY PRODUCTS</td>
</tr>
<tr>
<td>DIN EN ISO 3834-2</td>
<td>QUALITY REQUIREMENTS FOR FUSION WELDING OF METALLIC MATERIALS-PART 2: COMPREHENSIVE QUALITY REQUIREMENTS</td>
</tr>
<tr>
<td>DIN V 4113-3 KLASSE C</td>
<td>ALUMINIUM CONSTRUCTIONS UNDER PREDOMINANTLY STATIC LOADING</td>
</tr>
<tr>
<td>EN ISO 9606-2</td>
<td>QUALIFICATION TEST OF WELDERS - FUSION WELDING - ALUMINIUM</td>
</tr>
<tr>
<td>EN 287-1</td>
<td>QUALIFICATION TEST OF WELDERS - FUSION WELDING - STEELS</td>
</tr>
<tr>
<td>DVS®/IIW 1170</td>
<td>INTERNATIONAL WELDING ENGINEER</td>
</tr>
<tr>
<td>DVS®/EWF 3301</td>
<td>EUROPEAN ADHESIVE SPECIALIST</td>
</tr>
</tbody>
</table>
PRODUCT SOLUTIONS

PRODUCT SCOPE

• Gangways
• Doors
• Cranes/Davits
• Masts
• Specialised
PRODUCT SOLUTIONS

GANGWAYS

• We make sure your guests embark and disembark stylishly and safely with one of our side or stern gangway options.

• We also offer stern gangways with a space-saving telescoping or articulated joint design and a side gangway with a revolving platform.
PRODUCT SOLUTIONS

DOORS

• Our sliding doors integrate seamlessly into any interior creating a comfortable environment for your passengers.

• Our door solutions can be curved or pantograph or custom shaped and all are safe and easy to operate.
PRODUCT SOLUTIONS

CRANES & DAVITS

• Cranes and davits for the luxury market are anything but off-the-shelf items. The demands around function, design and finish require a custom touch.

• They may not be the first thing you see when you come on board but Aljo’s crane and davit solutions exceed even the highest of standards.
PRODUCT SOLUTIONS

MASTS

- Masts in the yachting world need to maintain a low visual profile. Aljo’s solution is a telescoping mast that is seen only when necessary.
- Made from carbon fiber reinforced plastic, our solutions can stand up to high winds and sea motion.
PRODUCT SOLUTIONS

SPECIALISED

• If there’s anything you can think of that would make your yachting experience better in any way, let us know and we’ll help you make that dream a reality.
PRODUCT SOLUTIONS

HANGAR DOORS

- Helicopters and large naval vessels often go hand in hand and that creates a sophisticated set of engineering demands when it comes to solutions for housing them at sea.
- We specialise in the construction of lightweight hangar doors that are both shock and vibration-proof.
PRODUCT SOLUTIONS

TELESCOPING HANGARS

• For a space-saving hangar solution, Aljo offers a telescoping hangar. Extended and retracted easily, ours has been a proven solution at sea for many years.
• Our doors are easy to install and operate, lightweight and resistant to salt water and severe weather conditions.
PRODUCT SOLUTIONS

WINCHES

• Winches designed for deep water use, cable winches and cable winches for sonar systems are just a few examples of the solutions we’ve designed and manufactured over the years.
PRODUCT SOLUTIONS

CRANES

• Our systems are designed to meet your unique weight and space restrictions and requirements. Our solutions range from the simplest cranes and davits all the way to the most complex weight optimized systems with advanced capabilities.
SPECIALTY

Some examples:
• Mine hunting equipment
• Cable guide systems for underwater cables
• Underwater gripper Systems
• Handling Systems for underwater drones
24h After Sale Service

Where you find Aljo Products

AFTER SALES

MARINE DIVISION / AFTER SALES SERVICE
PRODUCT SOLUTIONS

• Full-array of services for our products throughout the life cycle of the vessel.
• Highly skilled personnel
• Available wherever and whenever you need them.
PRODUCT SOLUTIONS

OUR SERVICE INCLUDES

• Technical assistance
• Spare part support
• Onsite support and repair
• Retrofitting and upgrades
EXPERTS IN LIGHTWEIGHT INTERIORS
CORE COMPETENCIES

• Broad range of logistics in the areas of efficiency, safety, quality, durability, aesthetics, market demand and many others
• Precision and perfection through-out the process
• "Just in Time" Manufacturing. Our JIT platform is built around volume flexibility, unit quality and precision delivery.
• Approach to client relations. We stay close to our customers in order to meet their needs and keep them satisfied
QUALITY MANAGEMENT

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SCOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO/TS 16949</td>
<td>AUTOMOTIVE</td>
</tr>
<tr>
<td>DVS%/EWF 3301</td>
<td>EUROPEAN ADHESIVE SPECIALIST</td>
</tr>
</tbody>
</table>
PRODUCT SOLUTIONS

• We have provided unique interior solutions for the VW T5 California Campervan since 2004.

• Thanks to our aluminium sandwich plate construction, this RV delivers 62 liters more storage space and consumes less fuel than it would using conventional plywood components.
PRODUCT SOLUTIONS

• Beyond the practical, our interiors offer an aesthetic benefit with decoratively coated plates cut with a technique that maintains the impression of authentic wood grain.
THANK YOU!
FOR FURTHER INFORMATION PLEASE CONTACT US!

ADDRESS:
ALJO ALUMINIUM-BAU
JONUSCHEIT GMBH
GEWERBESTRASSE 2
27804 BERNE
GERMANY

CONTACT:
PHONE: +49 (0) 4406 44 0
FAX: +49 (0) 4406 44 199
E-MAIL: info@aljo.de