

High Quality Aluminium Plates for the Aerospace Industry

Custom cutting and first-
stage CNC machining

Discover our offering
in the UK



thyssenkrupp



About us

Price, delivery and quality continue to be the most important requirements of aerospace material buyers. The development of new aircraft, rise in demand, and the consistent competitive pressure to provide cost-effective solutions and the highest quality of material in the shortest timescales mean that these requirements have to be achieved in an increasingly complex and nowadays, unprecedented environment.

As the preferred material supplier in aerospace, we position ourselves close to our customers and apply 'lean' manufacturing principles so that the materials can be processed and supplied on a just-in-time basis and we can offer a wide range of in-house services.

Whether our customers have an immediate one-off requirement for a single piece of metal, or need to negotiate a long-term agreement covering multiple materials and processes, we are ready to respond on a local basis or as part of a global arrangement.

www.thyssenkrupp-aerospace.com

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Specification by alloy								
Alloy	Temper	UK	USA	Germany	France	Europe	Manufactures Specification	Company
2000 series bare	T3, T351, T36 HT						BMS 7-327	Boeing
2000 series clad	T3, T351, T42 HT						BMS 7-316	Boeing
2014	O, T651		AMS 4028/4029					
	T651						MMS 1580	Boeing
2014A	T651, T351	BS L93						
	T351 (T651)/ T351 (T651)/ T351						BAEM 0039/0128/0173	BAE Systems
	T351	DTD 5010						
2024	T351					EN 2419		
	T351					EN 6000		
	T351						ABS 5032	Airbus
	T351						AIMS 03-02-020/004/035	Airbus
	T351						AIMS 04-32-411	Airbus
	T351						CR 1.1.0.36	Dassault
	T351						ASN-A 3011	Airbus
	T351				AIR 9048.630			
	T351/T351HDT						AIMS 03-02-004/020	Airbus
	T351, T851			W.-Nr. 3.1354				
	T351						ABM1-1005/BAEM 0172	Airbus/BAE Systems
	T651, T851						BAEM 0145	BAE Systems
	T351	BS L97						
	O, T351		AMS 4035/4037					
	O, T3, T4, T42, T62, T72, T81, T351, T361, T851, T861, and F		AMS QQ-A-250/4					
2027	T351						AIMS 03-02-031	Airbus
2124	T351					EN 2422		
	T851						AIMS 03-02-032	Airbus
	T851		AMS 4101					
	T351, T851		AMS QQ-A-250/29					
	T851						DMS 2116	Boeing
	T351, T851						MMS 149	Boeing
	T8151						LMA-M7008C	Lockheed Martin
	T851						LMA-M7009C	Lockheed Martin
2214	T451, T651					EN 2124		
	T451/T451 (T651), T651				AIR 9048.610/			
	T451, T651						CR 1.1.0.31	Dassault
	T351, T651						AIMS 04-32-232	Airbus
2219	O, T31, T37, T62, T81, T87, T351, T851, F		AMS QQ-A-250/30					
	T3510, T3511, T8510, T8511						BMS 7-110	Boeing
2324	T39						BMS 7-254	Boeing
2618A	T351, T851					EN 2123		
	T351, T851						ABM1-1006/BAEM 1103	Airbus/BAE System
	T351, T851						AIMS 04-32-441	Airbus
	T851						AIMS 03-02-021	Airbus
	T851						ASN-A 3355	Airbus
	T351(T851), T851				AIR 9048.640			
	T351, T651						CR 1.1.0.42	Dassault
	T651			W.-Nr. 3.1924				
	T351 (T651)						BAEM 1101	BAE Systems

Specification by alloy

Alloy	Temper	UK	USA	Germany	France	Europe	Manufactures Specification	Company
2618A	T651						MSRR 8016	Rolls-Royce
	T351, T651						MMO 531	BAE Systems
6061	T651					EN 4213		
	T451, T651			W.-Nr. 3.3214				
	O, F, T4, T42, T451, T6, T62, T651		AMS 4025/4026/4027					
6082	T651	BS L115						
7000 series	T7651 HDT						BMS 7-381	Boeing
7010	T7351/T7651/ T7451		AMS 4203/4204/4205					
	W51, T7351						MMO 533	BAE Systems
	W51, T7651, T7451					EN 2684/		
	T7451						SMS 3206	Sonaca
	W51, T7651, T7451					2687		
	W51, T7651						ABM3-1029/1030	Airbus
	W51, T7651						ABM3-1029/BAEM 1213	Airbus/BAE Systems
	W51, T7651						ABM3-1030/BAEM 1218	Airbus/BAE Systems
	T651					EN 4214		
	T7451/T651/ T7651						AIMS 04-32-311/319/324	Airbus
	T651/T7451/ T7651						ASN-A 3005/3098/3101	Airbus
	T7451						CR 1.1.0.87	Dassault
	T7451			W.-Nr. 3.4394				
	T7351						BAEM 1211	BAE Systems
	W51, T7651						BAEM 0200	BAE Systems
	T7651	DTD 5120						
	T7451	DTD 5130						
7010/7050	T7451						AIMS 03-02-022	Airbus
7040	T7651						AIMS 03-02-023	Airbus
	T7451						BAMS 516-021	Bombardier
	T7451						BMS 7-355	Boeing
7040/7050	T7451						AIMS 03-02-019	Airbus
7050	T7451/T7651					EN 3982/		
	T7451/T7651					3983		
	T7651						ABM 3-1029	Airbus
	T7651						ABM 3-1030	Airbus
	T7451						ABS 5323	Airbus
	T7451				AIR 9048.740			
	T7451						CR 1.1.0.98	Dassault
	T7451			W.-Nr. 3.4144				
	T7451/T7651		AMS 4050/4201					
	T7651						BAMS 516-001	Bombardier
	T7451						BAMS 516-003	Bombardier
	T7451						BMS 7-323 types I & III	Boeing
	W51, T7651, T7451						DMS 2233	Boeing
	T7451						MMS 1420	Boeing
	T7451						MEP 02-014	Embraer
	W51, T7451						MM 056	BAE Systems
	T7451						LMA-M7050	Lockheed
7055	T7751/T7951						AIMS 03-02-017/024	Airbus
	T7751						BMS 7-307	Boeing

Specification by alloy

Alloy	Temper	UK	USA	Germany	France	Europe	Manufactures Specification	Company
7075	T651, T7351						CR 1.1.0.76	Dassault
	T651, T7351			W.-Nr. 3.4364				
	W51, T651, T651						ABM 3-1074	Airbus
	T351 (T651)	BS L95*					BAEM 0150	BAE Systems
	T7351						BAEM 1204	BAE Systems
	O/T651/T7351		AMS 4044/4045/4078					
	O, F, T651, T7351		AMS QQ-A-250/12					
	T7651		AMS QQ-A-250/24					
	T7351						MMS 159	Boeing
	T7351						MMO 532	BAE Systems
	W51, T651					EN 2126		
	T7351					EN 2511		
	T7351						ASN-A 3009	Airbus
	T7351						AIMS 04-32-471	Airbus
	T651/T7351/ T7351/T7651				AIR 9048.680/ .690/.700/.710			
7085	T7651						AIMS 03-02-025	Airbus
7140	T7751						BMS 7-382	Boeing
7150	W51, T651						ABM3-1031/BAEM 1219	Airbus/BAE Systems
	T651/T7751						AIMS 03-02-011/026	Airbus
	T7751		AMS 4252					
	T7751						BAMS 516-006	Bombardier
	T651						BMS 7-256	Boeing
7175	T7351			W.-Nr. 3.4364		EN 2512		
	T7351						AIMS 04-32-471A	Airbus
	T7351						AIMS 03-02-008	Airbus
	T7351						CR 1.1.0.88	Dassault
	T7351						ASN-A 3050	Airbus
	T7351						BAEM 0150	BAE Systems
	T7351						ABS 5064	Airbus
	T7351				Air 9048			
7449	T651/T7951/ T7651						AIMS 03-02-015/016/028	Airbus
	T7651						ABS 23713	Airbus
7475	T7651/T7351					EN 2805/ 4457		
	T7651/T7351						AIMS 03-02-009	Airbus
	T7351							
	T7351/T7651				AIR 9048.720/ 0.73			
	T7351						BAMS 516-002	Bombardier
	T7351			W.-Nr. 3.4384				
	T7651/T651/ T7351		AMS 4089/4090/4202				AIMS 03-02-015/016/028	Airbus
	T7351, O, OP, W51, T76, T7651, T73						DMS 2184	Boeing
	T7351						MEP 02-013	Embraer
	T7351, T7651						FMS 3004	Lockheed
	W51, T7351						MMO 565	BAE Systems

() normal end temper use HDT high damage tolerance

*similar to but not direct equivalent to 7075

Note : T7451 temper was formerly known as T73651

HT High Toughness

Specification by company			
Specification	Alloy	Temper	Country
	2014	O, T651	USA
Airbus			
ABM 3-1029	7050	T7651	USA
ABM 3-1030	7050	T7651	USA
ABM 3-1074	7075	W51, T651, T651	USA
ABM3-1029/1030	7010	W51, T7651	USA
ABS 23713	7449	T7651	USA
ABS 5032	2024	T351	USA
ABS 5064	7175	T7351	USA
ABS 5323	7050	T7451	USA
AIMS 03-02-004/020	2024	T351/T351HDT	USA
AIMS 03-02-008	7175	T7351	USA
AIMS 03-02-009	7475	T7351	USA
AIMS 03-02-011/026	7150	T651/T7751	USA
AIMS 03-02-015/016/028	7449	T651/T7951/T7651	USA
AIMS 03-02-017/024	7055	T7751/T7951	USA
AIMS 03-02-019	7040/7050	T7451	USA
AIMS 03-02-020/004/035	2024	T351	USA
AIMS 03-02-021	2618A	T851	USA
AIMS 03-02-022	7010/7050	T7451	USA
AIMS 03-02-023	7040	T7651	USA
AIMS 03-02-025	7085	T7651	USA
AIMS 03-02-031	2027	T351	USA
AIMS 03-02-032	2124	T851	USA
AIMS 04-32-232	2214	T351, T651	USA
AIMS 04-32-311/319/324	7010	T7451/T651/T7651	USA
AIMS 04-32-411	2024	T351	USA
AIMS 04-32-441	2618A	T351, T851	USA
AIMS 04-32-471	7075	T7351	USA
AIMS 04-32-471A	7175	T3751	USA
ASN-A 3005/3098/3101	7010	T651/T7451/T7651	USA
ASN-A 3009	7075	T7351	USA
ASN-A 3011	2024	T351	USA
ASN-A 3050	7175	T7351	USA
ASN-A 3355	2618A	T851	USA
Airbus/BAE Systems			
ABM1-1005/BAEM 0172	2024	T351	USA
ABM1-1006/BAEM 1103	2618A	T351, T651	USA
ABM3-1029/BAEM 1213	7010	W51, T7651	USA
ABM3-1030/BAEM 1218	7010	W51, T7651	USA
ABM3-1031/BAEM 1219	7150	W51, T651	
BAE Systems			
BAEM 0039/0128/0173	2014A	T351 (T651)/ T351 (T651)/T351	USA
BAEM 0145	2024	T651, T851	USA
BAEM 0150	7075	T351 (T651)	UK
BAEM 0200	7010	W51, T7651	UK
BAEM 1101	2618A	T351 (T651)	UK
BAEM 1204	7075	T7351	UK
BAEM 1211	7010	T7351	UK
MM 0566	7050	W51, T7451	UK
MMO 531	2618A	T351, T651	UK
MMO 532	7075	T7351	UK
MMO 533	7010	W51, T7351	UK
MMO 565	7475	W51, T7351	UK

Specification by company			
Specification	Alloy	Temper	Country
Boeing			
BMS 7-110	2219	T3510, T3511, T8510, T8511	UK
BMS 7-254	2324	T39	UK
BMS 7-256	7150	T651	UK
BMS 7-307	7055	T7751	UK
BMS 7-316	2000 series clad	T3, T351, T42 HT	UK
BMS 7-323 types I & III	7050	T7451	UK
BMS 7-327	2000 series bare	T3, T351, T36 HT	UK
BMS 7-355	7040	T7451	UK
BMS 7-381	7000 series	T7651 HDT	UK
BMS 7-382	7140	T7751	UK
DMS 2116	2124	T851	UK
DMS 2184	7475	T7351, O, OP, W51, T76, T7651, T73	UK
DMS 2233	7050	W51, T7651, T7451	UK
MMS 1420	7050	T7451	UK
MMS 149	2124	T351, T851	UK
MMS 1580	2014	T651	UK
MMS 159	7075	T7351	UK
Bombardier			
BAMS 516-001	7050	T7651	UK
BAMS 516-002	7475	T7351	UK
BAMS 516-003	7050	T7451	UK
BAMS 516-006	7150	T7751	UK
BAMS 516-021	7040	T7451	UK
Dassault			
CR 1.1.0.31	2214	T451, T651	UK
CR 1.1.0.36	2024	T351	UK
CR 1.1.0.42	2618A	T351, T651	UK
CR 1.1.0.76	7075	T651, T7351	UK
CR 1.1.0.87	7010	T7451	UK
CR 1.1.0.88	7175	T7351	UK
CR 1.1.0.98	7050	T7451	UK
Embraer			
MEP 02-013	7475	T7351	UK
MEP 02-014	7050	T7451	UK
Lockheed			
FMS 3004	7475	T7351, T7651	UK
LMA-M7050	7050	T7451	UK
Lockheed Martin			
LMA-M7008C	2124	T8151	UK
LMA-M7009C	2124	T851	UK
Rolls-Royce			
MSRR 8016	2618A	T651	UK
Sonaca			
SMS 3206	7010	T7451	UK

() normal end temper use HDT high damage tolerance

*similar to but not direct equivalent to 7075

Note : T7451 temper was formerly known as T73651

HT High Toughness



Weight calculations

The following chart is a sample of some of the common thicknesses and sizes that are available. Please contact us for details of our full product range and current stock availability in the UK.

Thickness		Weight	
mm	in	kg/m ²	lbs/ft ²
6.35	1/4	17.78	3.64
10.00		28.00	
12.70	1/2	35.56	7.27
15.00		42.00	
	3/4		10.91
20.00		56.00	
25.40	1	71.12	14.54
30.00		84.00	
	1 1/4		18.18
38.10	1 1/2	106.68	21.82
50.00		140.00	
50.80	2	142.24	29.09
60.00		168.00	
	2 3/8		34.54
63.50	2 1/2	177.80	36.36
	2 3/4		40.00
70.00		196.00	
76.20	3	213.36	43.63
80.00		224.00	
88.90	3 1/2	248.92	50.90
100.00		280.00	
	4		58.18
127.00	5	355.60	72.72
130.00		364.00	
	5 1/2		79.99
140.00		392.00	
150.00		420.00	
152.40	6	426.72	87.26

Density based on 2.80 g/cm³ (0.101 lbs/in³)

Densities of common alloys

The density of an alloy is determined by its chemical composition – the purer alloys are lighter, and those which have a greater content of other elements are heavier.

As can be seen from the chart, the density of individual alloys can vary from 2.63 to 2.85 g/cm³ (0.095 to 0.103 lbs/in³) or 7.7 %. Therefore, in calculating the weight of a component, it is important to use the density of the alloy concerned.

Alloy	g/cm ³	lbs/in ³
2014	2.80	0.101
2024	2.77	0.100
2027	2.79	0.101
2124	2.77	0.100
2214	2.80	0.101
2219	2.85	0.103
2618	2.77	0.100
5056	2.63	0.095
5251	2.69	0.097
6061	2.71	0.098
6063	2.69	0.097
6082	2.71	0.098
7010	2.82	0.102
7050	2.82	0.102
7055	2.86	0.103
7075	2.80	0.101
7085	2.85	0.103
7150	2.82	0.102
7175	2.80	0.101
7449	2.85	0.103
7475	2.80	0.101

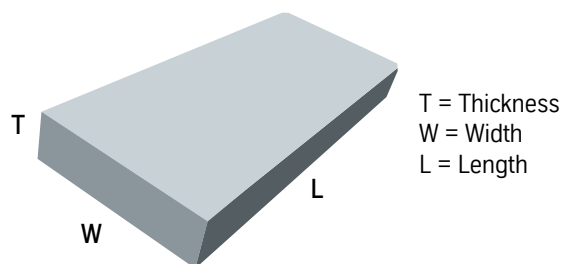
Remember: We can cut to size and process materials to reduce waste and lower your costs.

How to calculate the weight of plate

The weight of plate is easily calculated. Simply multiply the appropriate alloy density (see chart above) by the thickness, width, and length of the required part (see worked example below and note that we have used the density of alloy 2014 as the basis for our calculations).

Metric example:				
density (g/cm ³)	T	W	L	Weight
2.80g/cm ³	x 50mm	x 1.25m	x 2.5m	= 437.5kg

Imperial example:				
density (lbs/in ³)	T	W	L	Weight
0.101 lbs/in ³	x 4in	x 48in	x 144in	= 2792.45lbs



For imperial weight calculations, certain measurements (fractions) need to be converted to decimal inches. For an accurate calculation, it is also important to allow for the rolling tolerance which affects the thickness and the cutting tolerances, which affect the width and length. These vary from thickness to thickness – please contact us for details.

Products and processing

Our offering in the UK

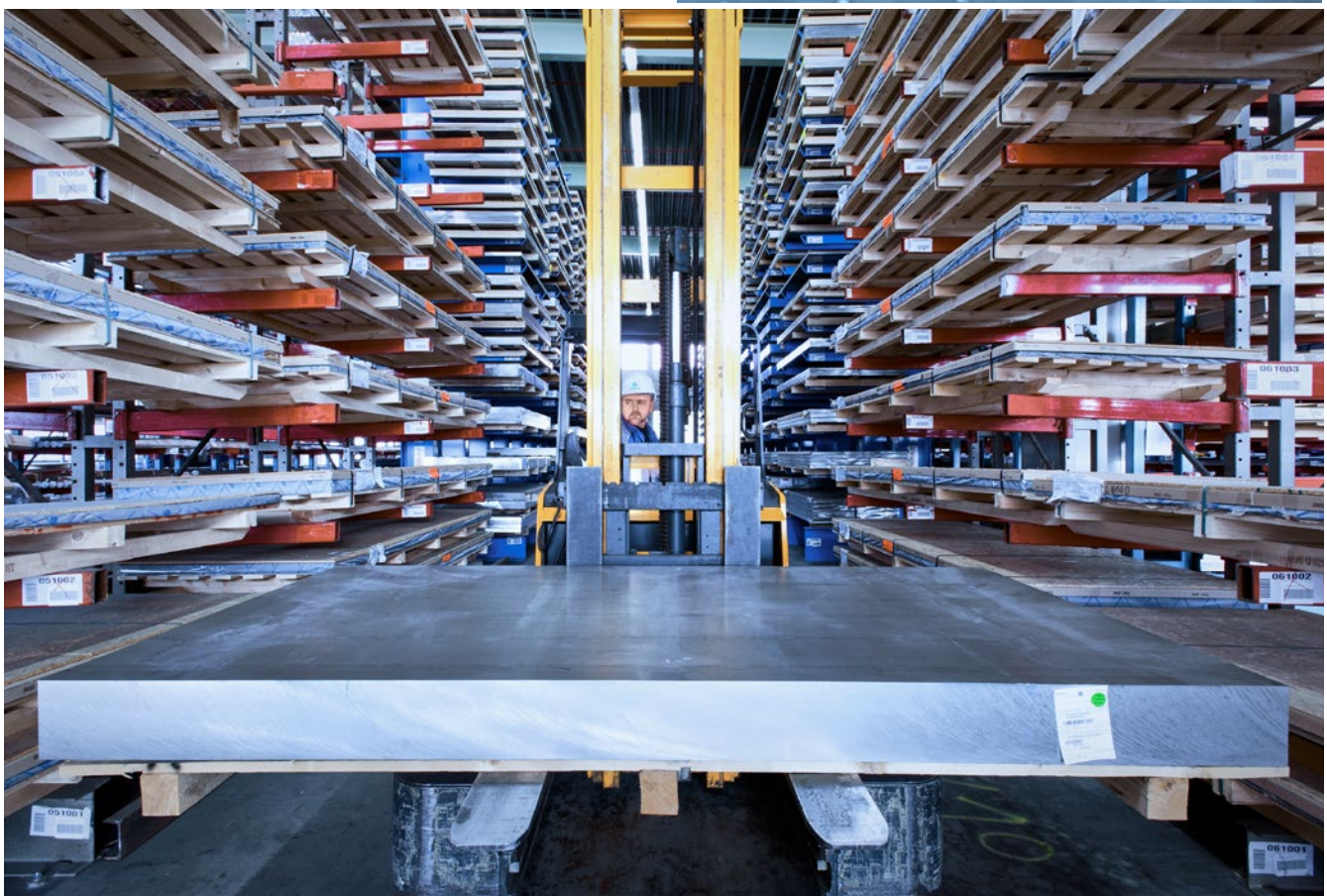
We stock a wide range of plate in specifications suitable for most aircraft build programmes. Both national and aircraft manufacturer's proprietary specifications are stocked in a wide range of types and sizes.

To accommodate special requirements, we have booked production capacity with the leading mills to enable us to offer a part from stock or expedited mill service. All stock items can be cut to size and machined to reduce waste and lower costs.

Plate cutting

The latest technology plate saws provide the following capabilities:

- ⌚ Precision cut plate blanks to ± 0.4 mm (0.0157 in)
- ⌚ Long plates up to 6 metres (20 ft)
- ⌚ Thick plates up to 250 mm (9.8425 in)
- ⌚ Specialised cutting
- ⌚ Plate profiles nested to reduce waste
- ⌚ Each item hard metal stamped to ensure full lot traceability



Engineering support for billet preparation

In order to minimise inventories and maximise throughput, many advanced engineering companies require material to be processed and ready for final machining. To answer this need, thyssenkrupp Aerospace has invested in a wide range of machining facilities and has an experienced in-house engineering team to support customers and the production process.

The team will convert customer drawings or process layout cards into a design and instruction sheet using thyssenkrupp Aerospace's own computer aided design system. These facilities allow us to produce clear manufacturing instruction sheets, check customer drawings and liaise with customers and suppliers via DXF and iGES Systems.

Waterjet technology

Using the latest in waterjet pump technology, we are able to create up to 87,000 psi (6,000 bar) of pressure to move water and abrasive through material at speeds up to mach 3.

- ⊕ We can process a wide array of materials to ± 0.50 mm (0.0197 in)

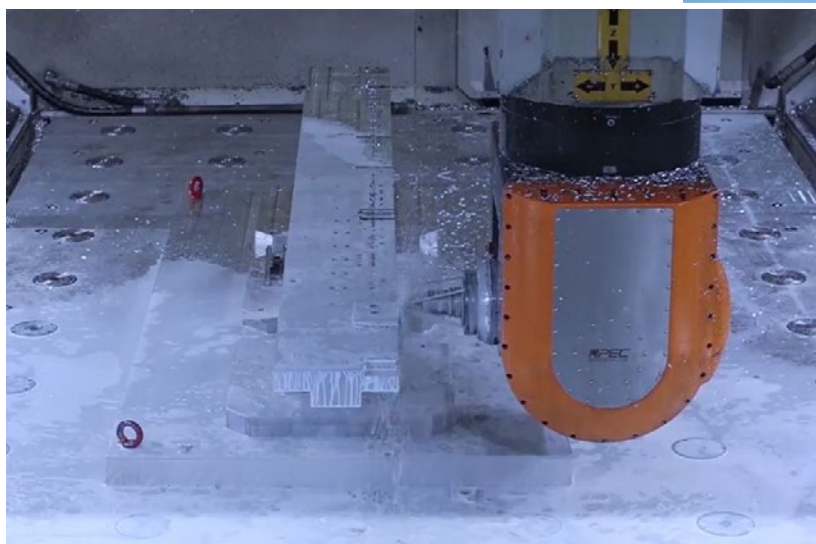


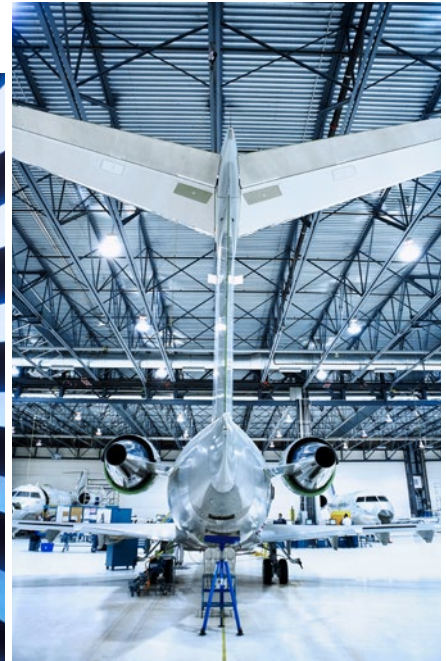
Plate machining

CNC machining centres have the following capabilities:

- ⊕ Nested profiles can be billet prepped to eliminate waste and reduce customer cycle times
- ⊕ Surface machining up to 6 m x 2 m (19.6 ft x 6 1/2 ft)
- ⊕ CNC machining up to 6 m x 2 m (19.6 ft x 6 1/2 ft) including drill, tap and dovetailing capabilities.
- ⊕ Cmm inspection
- ⊕ In-house engineering

Inspection

Cmm inspection facilities close the manufacturing loop and ensure that consistent product quality is maintained. Detailed inspection reports can be supplied with every delivery.



Services

Our offering in the UK

Having material available and at the right price is just the beginning

We recognise that different customers have different manufacturing strategies and need different services to optimise or reduce production costs.

Because all customers are different, we offer a menu of services which can be tailored to suit the most demanding needs. These include:

- Quick response to ad-hoc requests
- Service Provision
- Supply Chain Management
- 3rd Party Logistics (3PL)
- Tooling Management

Quick response to ad-hoc requests

- We carry an extensive stock of materials which is accessible by customers on an ad-hoc or spot basis to cover unplanned demands, AoG's etc.
- We respond quickly to your enquiry whether it is by phone or email.
- Our stock range includes over 20,000 stock items, all of which can be cut to size or processed to your specific requirements.
- We deliver from a local service centre in the shortest possible time.



Please note that all materials are supplied in accordance with current ITAR and export control legislation. Please also note that we are pleased to help customers to fulfil their industrial cooperation (offset) commitments.

Quality management and approvals

Achieving 100 % right first-time quality is at the heart of every level of service we provide

The methods we use to buy, store, process and sell materials are embodied in our Quality Management System.

The system defines the training required for each of our employees to deliver the standard our customers expect. It ensures that we maintain full lot traceability of every item we supply from original manufacture through to the customer's shop floor.

All of our locations have been approved to EN/AS 9100 and/or EN/AS 9120 standards approved by the world's leading aerospace companies.

We are also involved in a number of environmental initiatives and are fulfilling the requirements of ISO 14001 at all of our sites.





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