

PRECISION MACHINING AND FABRICATION  
**LEADING THE WAY**  
OF EXOTIC AND CONVENTIONAL METALS

**WessDel**

# precision machining and fabrication to exacting specifications for leading global aerospace, defense, and technology companies

Precision machining to exacting specifications, fabrications of the highest structural integrity, and a passion for and commitment to unmatched quality are longstanding WessDel hallmarks. We bring more than 40 years of contract manufacturing expertise to bear on every project we undertake, whether advancing the use of beryllium and its alloys, other exotic materials, or wide range of conventional metals. WessDel engineers and technicians are dedicated to working collaboratively and across disciplines to help customers achieve optimal outcomes with every project.

WessDel believes that the most productive customer relationships are those built on shared risks, responsibilities, and rewards. We work strategically and collaboratively with leading companies to achieve mutually desired goals and optimal outcomes.

## The Industry benchmark, from conventional to mission critical

**Aerospace:** Leading global defense contractors look to WessDel to deliver mission-critical components for complex spacecraft structures and advanced communication assets. Our innovative processes optimize a full suite of state-of-the-art machining and fabrication equipment to continually deliver end products that set the standard of engineering excellence.

**Defense:** WessDel supplies tier one prime contractors with precision-machined mission-critical components. Our innovative Electrical Discharge Machining (EDM) processes deliver repeatable precision to complex and intricate designs.

**Technology:** WessDel is a long-time collaborator with leading innovators in the semiconductor and related industries. We work closely with customers to achieve product advances demand next-generation through engineering and assembly techniques that ensure the highest standard of product excellence.

## Be Beryllium

**Properties:** High flexural rigidity stability; high thermal conductivity; low density.

**Applications:** Ideal for use in optics and optical structures, space structures, nuclear applications, missile guidance systems, and x-ray equipment.

**WessDel** is the recognized leader in advanced machining, forming and joining techniques for beryllium materials to the aerospace and defense industries.

## AlBeMet®

**Properties:** Lightweight; high thermal conductivity; high specific stiffness; thermal stability; lower CTE.

**Applications:** Ideal for use in semiconductor equipment, aerospace systems, aircraft instrumentation, and satellite electronics.

**WessDel** forms, machines, and brazes made-to-order AlBeMet® (beryllium/aluminum) components for a diverse range of uses, from mission-critical to high-performance industrial. AlBeMet is well suited to increasingly complex systems with concern for weight and cost sensitivities.

### High-performance exotic metal development

WessDel process development provides state-of-the-art CNC milling, turning, EDM, waterjet, chemical, and thermal processing for industries' most advanced metals.

Property	Beryllium S-200FH	AlBeMet® 162 HT/Extended	Aluminum 6061-T6	Titanium Ti6Al4V	Magnesium AZ31B
Density (lb/cu in)	0.067	0.076	0.098	0.16	0.064
Modulus (PSI x 10e6)	44	29	10	16	6.5
Spec. Modulus (in x 10e8)	6.5	3.8	1	1	1
YS (ks i)	43	40	40	120	29
UTS (ks i)	60	55	45	130	37
Elongation (%)	3	7	12	10	12
CTE (ppm/F)	6.3	7.7	13.1	5	14
Therm Con (BTU/hr-ft-F)	125	121	97	4	56

## Precision machining and fabrication

Working with Beryllium-containing materials to design, develop, and manufacture made-to-spec components requires innovation that routinely defies conventional norms and mandates unique, standalone processes to achieve completion.

With our intimate knowledge and expertise in working with Beryllium-containing materials, WessDel can help guide our customers to the proper applications, provide design assistance in converting to these materials, and apply the best and most cost-effective manufacturing approaches to ensure end-product satisfaction.

**Precision Machining:** WessDel precision machining services for aerospace, defense, and technology industries are the finest available. We offer a comprehensive list of services for working with exotic and conventional metals, including manual and CNC milling, turning, EDM, waterjet, chemical, and thermal processing and mechanical assembly. All in-house work is done at our 24,000 sq.ft., temperature-controlled manufacturing facility located in the heart of Silicon Valley.

**Fabrication:** WessDel is the world's leading supplier of brazed beryllium structures for applications that require the highest degree of structural integrity with exacting specification, including precision yokes, telescope housings, bus structures, and gimbals for commercial and military spacecraft.

Our mechanical and electro-mechanical assembly capabilities allow us to produce a growing range of made-to-order products, from basic to extremely complex, multidimensional turnkey assemblies, with complete supply chain management. Concurrent engineering, prototyping, and roadmapping services are also available.

**Supply chain management:** WessDel has extensive knowledge of secondary processes and works with a select network of approved vendors to develop and provide precision components that make up our final assemblies. Our supply chain management protocol balances flexibility, consistency, reliability, and cost within a set timeframe to ensure all components are supplied to exacting specifications.

## WessDel people and partnerships

WessDel engineers, technicians, machinists, and fabricators not only have years of experience to their credit, but also a long history with our company—more than 25 years individually, and over 10 years with WessDel, on average. This level of expertise and dedication to WessDel is what enables us to provide the reliability and consistency that our customers expect.

We believe that optimal outcomes are best achieved by developing long-term strategic partnerships in which risks and responsibilities are shared by WessDel and our vendors and customers. We work closely with all affected parties to establish a collaborative concept-to-completion strategies that help streamline process efficiencies, ensure adherence to exacting specifications, and speed time to delivery.

### WessDel quality

At WessDel, continuous improvements in our quality management system are critical to our success and overall customer satisfaction. We are fully committed to maintaining our outstanding reputation in the machining and fabrication industry by providing our customers the highest level of service possible.

### WessDel certifications:

AS9100C  
ISO 9001:2008  
Mil-I 45208 A

Individual  
**25**  
YEARS

WessDel  
**10**  
YEARS

