

Your strategic partner in meeting the aerospace industry's complex, high-performance challenges.

LeggettAerospace.com

We Are a Leggett & Platt Company

The aerospace market demands a long-term perspective for development, gualification, and production programs. It requires financially stable organizations that understand program cycles and nimble manufacturing teams with the appropriate expertise. Leggett & Platt meets that challenge. An S&P 500 company with over 140 years of manufacturing experience, Leggett & Platt delivers smart investments and dynamic support with risk-mitigating financial size and strength.

Leggett & Platt is a diversified manufacturer that designs and produces engineered products found in most homes and automobiles. It is the leading U.S.-based manufacturer of: a) bedding components; b) automotive seat support and lumbar systems; c) specialty bedding foams and private label finished mattresses; d) components for home furniture and work furniture; e) flooring underlayment; f) adjustable beds; and g) bedding industry machinery.



Leggett & Platt's Aerospace Group is organized within the Specialized Products Segment of L&P. A combination of organic growth and acquisition within a strategic and financial framework is underpinning an active growth strategy. A focus on tube-based solutions for fluid conveyance and structural components is the product guideposts.

In 2012, Leggett & Platt launched a new organization – Aerospace. It utilized L&P's proven growth strategy and strength to become a significant supplier in the aerospace fluid conveyance market. Today, Leggett & Platt Aerospace operates six branches with eight facilities across North America and Europe.

Leggett & Platt Aerospace designs and manufactures complex tube and duct assemblies for use on virtually all current key military and commercial aircraft platforms, space launch vehicles, and critical non-aerospace applications. Supplying both design-tospecification and build-to-print solutions, we can provide high-quality solutions in the fluid conveyance market.

exotic alloys.

All facilities are certified to ISO 9000 and AS9100 aerospace standards, as well as multiple customer approval standards.





Partner with Leggett & Platt Aerospace

Leggett & Platt Aerospace's Tube Division, with four manufacturing facilities, develops metallic tubing for fluid conveyance and structural applications. Our capabilities span sizes from micro-applications to several feet in diameter. Materials cover the highperformance, high-technology needs in titanium, nickel alloys, stainless steel, and other

OUR VALUE PROPOSITION:

- Flexible organization that enables placement of the "right work at the right branch" for the regional supply today's market prefers
- Internal dual-source capability to mitigate program/schedule risk and address disaster recovery
- Vertical integration renders most competitive cost/sale price and aggressive lead times in:
- Assembly design build and build-to-print
- Tube manufacturing
- Integrated machining

	Dunstable, United Kingdom
• Kirkland, Washington	Downton, United Kingdom oo Samer, France
• Middletown, Con	
Poway, California	• Assembly • Tubing

Engineering and Technical Solutions

Leggett & Platt Aerospace leverages years of problem-solving success to provide customer-focused solutions with an engineered approach that offers component design and alternatives on build-to-print requirements. LP Aerospace develops the best value demands by optimizing cost and performance for our customers.

Component and system designs resolve the loads and moments and address pressure drop within the required configuration. LP Aerospace has this capability in-house, optimizing the flexible components' best weight and function. For build-to-print applications, Leggett utilizes cost-effective fixture concepts to maximize value.

Leggett & Platt Aerospace is proud of our comprehensive, in-house test facilities.

Our qualification testing is the measure of successfully meeting the design challenge and acceptance testing shows control and consistency.

Multiple operations bring comprehensive experiences and perspectives to every challenge. LP Aerospace can bring this team together to consider the best solution for the customer.

TESTING CAPABILITIES INCLUDE:

- LP Aerospace possesses extensive in-house qualification test capability
- Vibration testing: random and sine
- Endurance testing
- Ambient with internal pressure up to 20.68 MPa (3,000 psi)
- ° Internal temperature to 1,000°C (1,832°F); internal pressure to 6.89 MPa (1,000 psig)
- ^o Internal temperature down to -186°C (-303°F); internal pressure to 13.8 MPa (2,000 psig)
- ^o Shear, bending, torque, and axial loads can be applied simultaneously
- Proof and burst test to 275.9 MPa (40,000 psig)
- Extensive gauging and monitoring capability

Quality assurance is the cornerstone of competent supply. It is built into every process – manufacturing and administrative. Leggett & Platt Aerospace verifies it through the industry approvals of ISO 9000, AS9100, multiple customer-specific approvals, and Leggett & Platt's own Sustainability statement, IT security, and Ethics policy. Operating above the standards and without compromise is our culture.

Verification is the evidence of our commitment to excellence. At LP Aerospace, all the processes necessary are at hand. Whether it's dimensional checks, metallurgical and weld integrity, acceptance testing, or first-article inspection, LP Aerospace uses industry-approved and -certified methods and personnel. This confirms our well-known value proposition.



Quality Assurance

CAPABILITIES INCLUDE:



Non-destructive testing

- Pressure testing
- ^o Digital and conventional x-ray
- Penetrant testing



Approvals

- ° ISO 9001
- ° AS9100
- ° EN9100
- NADCAP
- Customer-specific approvals

Manufacturing Excellence

Supplying the right parts at the right time comes down to manufacturing. Technical competence and a framework of quality are the basis of manufacturing success. LP Aerospace has the capabilities, capacity, and a vertical integration strategy for any fluid conveyance component challenge. From detail manufacture through tube and bellows forming, assembly fitting and welding, inspection and test, LP Aerospace adds value every step of the way. Utilizing automated and manual equipment allows matching the complexity and volume needs to the application. All of the facilities have NPI assets that meet the needs of concept and development hardware to support the rigors of test and LRIP programs. Procurement ensures competent material, outside process, and service partners are in place.

CAPABILITIES INCLUDE:

Duct assembly

Tube assembly

Tube forming



• Longitudinal ^o Orbital

Tube bending



Cold drawing / cold pilgering (unique OD/WT combinations)

Whether our products are wrapped in titanium, nickel, or stainless steel, LP Aerospace delivers comprehensive service to all customers. From initial introductions through proposal, development, and manufacturing cycle, we are proactive, responsive, and easy to deal with.

Our sales and customer service teams directly report to Group Sales, allowing LP Aerospace to coordinate our work to best serve the *customer's interests*. This provides the flexibility to put the right work in the right branch in order to maximize the value of our support. Whether it's regional supply, best manufacturing method, or relevant industry approval, our breadth of offering means better service and better value.



Service and Support

Our Business Development team serves as a single point of contact to get the needs of the customer met with the shortest lines of communication. They are the "customer specialists" that ensure your requirements are understood and actions are taken to meet them.

EXCELLENCE IN ACTION:

Military Fighter Engine Performance Development

- ^o Pushing the performance envelope demands innovation in manufacturing
- LP Aerospace combined several process approaches to deliver success
- Our vertical integration brought the expertise of multiple branches together

Business Jet Engine Development and Qualification

- The marathon to successful qualification is a series of sprints for suppliers
- LP Aerospace supported "lightning-fast" deliveries of design changes for dozens of items
- AOG-style reactions kept an aggressive engine qualification on track

- Partnering with Customers for Growth

- ^o Became a key supplier for a new-generation aircraft engine
- Brought a 27,000ft² (2,500m²) building online in a matter of months
- ^o Hired, trained, and certified the team; put manufacturing equipment in place
- Developed tool strings and put a supply chain in place

Business Development Team:

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