



# Rice of the Industry: Aerospace Fasteners

by Tanya Shih, Fastener World Inc.



**T**he annual global demand for aerospace fasteners surpasses US\$ 3.1 billion and is growing with a rate of 5-6% every year to meet the demand. However, the annual output of the global aerospace fasteners totals around US\$ 2.6 billion. This means the demand is higher than the supply. The output of Taiwan's aerospace fasteners is worth only about NT\$700 million, taking up about 0.8% of the global production value. There is still much room for growth, and this is what motivated us to expound upon aerospace fasteners in this issue. We would like to suggest that Taiwanese fastener industry, while talking about industrial upgrade and creating a solid base for the enterprise, should include aerospace fasteners in the development of the companies. .

In the global aerospace manufacturing development, European countries and the U.S. still play as the game rulers. As a result, other countries which would like to be part of the group should pay attention to the methods and steps for entering the

main supply chain. The following are 4 sections to help you understand the field of aerospace fasteners.

1. An introduction to AS9100
2. The current development of Taiwan's aerospace fastener industry
3. Activities of global aerospace fastener suppliers
4. List of global aerospace fasteners suppliers

## Introduction to AS9100

After integration of the three major aerospace quality management systems in the U.S., Europe, and Asia, AS9100 has been an internationally recognized standard in the global aviation industry. Getting AS9100 can help reduce unnecessary and repetitive auditing of different systems. Many companies have also required its suppliers to obtain related certifications before being approved to enter the supply chain, and verification must be performed by accredited bodies. For example, General Electrics (GEAE) released

a correspondence in the summer of 2003, mandating its cooperative suppliers to get certifications; Boeing requires its new suppliers get AS9100 approval and strongly recommends that existing suppliers should also obtain certifications; the National Aeronautics and Space Administration (NASA) has fully adopted AS9100 quality management system, which it indicated, is the precondition for entering new contracts. According to Bureau Veritas Group, the AS / EN / JISQ standards and procedures were all approved by the International Air Quality Group (IAQG), the European Aviation Quality Group (EAQG) and ASD (AECMA-EASE).

## What is AS/EN/JISQ 9100?

AS9100 is an internationally recognized quality management system for the aviation industry. It is called AS9100 in North America, EN9100 in Europe, and JISQ9100 in Japan. AS9100 quality management system is recognized by major manufacturers in the industry, including Airbus, Boeing, GEAE, and Rolls-Royce. The current System adopted is AS9100:2009 Revision C, which is a revision from ISO9001: 2008, based on stakeholders' suggestions and characteristics of the aviation industry. AS9110 is the system established for aviation maintenance industry based on AS9100. AS9110 is applicable to organizations providing service to the maintenance, repair or overhaul of civil/military aerial products and production organizations with maintenance, repair or overhaul operations. AS9120 is applicable to the aviation/aerospace/defense industry parts/material/component sourcing or distribution organizations.



## In Which Industry Can AS/EN/JISQ9100 Be Applied to?

The entire aviation industry supply chain, not only the manufacturers of the aviation industry, but also the design and setup of the equipment, airport and airline operations, supply and maintenance of components, flight operations and cargo handling.

## In Which Industry Can AS/EN/JISQ9110 Be Applied to?

Maintenance service providers of aviation products. It can be applied to the production of military or aerospace products and can be applied with AS9100. It can be applied to the businesses to which AS9100 can be applied but which need to be assessed separately in accordance with the AS9110 requirements.

## In Which Industry Can AS9120 Be Applied to?

Aviation products distribution businesses. This means that the companies cannot do anything to change the performance of the products.

## The Current Development of Taiwan's Aerospace Fastener Industry

The total output of Taiwan's aviation industry has demonstrated a gradual increase in recent years and reached NT\$87 billion at the end of 2014, up about 4.6% over the \$83.2 billion in the previous year. The Committee of Aviation Industry Development of the Ministry of Economic Affairs of Taiwan expects the production to surpass NT\$90 billion this year, which shows the NT\$100 billion milestone is just around the corner. Statistics recorded as of 2011 shows that more than 138 Taiwanese aerospace manufacturers have been certified and companies producing screws as their main business are NAFCO, Jau Yeou, Chun Yu, Ying Ming, San Shing, Boltun, Anchorfast, and U-Chance. Not a very long list.



## Features of Aerospace Fasteners

An aircraft is manufactured with five major parts: airframes, engines, avionics, interiors, and life-support systems. All of these parts need fasteners for assembly. According to Boeing, the world's leading passenger aircraft maker, a Boeing 747 will need approximately six million components and half of them are fasteners.

Aerospace products have long service life and are manufactured with complicated processes. The safety and durability of engines and related parts are especially of paramount importance. Therefore, the aviation industry is characterized by the most stringent quality management system, the most complex system integration technology, high industrial relevance, high added-value, and low correlation to global economic situations. Once it enters the supply chain successfully, it also means the acceptance of long-term and stable production orders. Therefore, getting certifications is one of the prerequisites to win new orders; otherwise, a manufacturer may find it excluded from the list of suppliers." This has become the unique characteristic which can only be observed in the aerospace industry.

## Myths of the Aerospace Supply Chain

### Myth 1. Getting certifications is very difficult.

Indeed, no one would deny that getting the aerospace certification is more difficult than getting the CE for construction or TS16949 for automobiles. However, is getting the aerospace certification really a distant unreachable

goal? According to an aerospace fastener maker in the industry who has acquired the certification: "In the past, everyone said that the development of automotive fasteners was difficult, but now many of these manufacturers have been approved by the automotive fasteners certification. This is just simply another time for product upgrade, and for the manufacturers who have already been approved by TS 16949, applying for AS 9100 is not difficult." In particular, given the uniqueness of the aviation industry which puts "getting the certification as the top priority," acquiring the certification is the first step to become a part of the aerospace supply chain.

### Myth 2. The aerospace industry is only for big brands.

If you could spend some time reading related articles in this magazine or even move your fingers to collect information online, you will find that European and American aerospace fastener suppliers are not entirely major brand manufacturers; this is a similar case in the automotive industry, for the automotive fastener manufacturers, some specialize in mass production of standard parts while some others focus on custom-made products, whose prices are counted piece by piece.

Taiwan's aerospace industry has developed for more than a decade. However, the industry has not yet achieved a significant transition or created a remarkable change from the traditional fastener industry. NAFCO is the most representative supplier in this area. Thus, the purpose of this article is to encourage fastener suppliers to keep upgrading and move forward to a higher industry level.



# Aerospace Industry Highlights

compiled by Fastener World Inc.

## Boltun Seeks High Added Value and Enters Aerospace Fastener Market



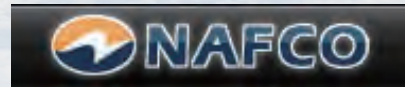
In order not to put almost all the effort in the development of automotive products, Boltun, with the guidance of Taiwan's Industrial Development Bureau in the project for the integration of metallic materials and applications industries, entered the field of aerospace fastener development, built up the manufacturing technology of super-alloy fasteners, and gained the certification of NADCAP. In addition, supported by the project for promoting the recyclable energy industry of Taiwan's Industrial Development Bureau, Boltun won another opportunity to supply fasteners installed on large win power generators and has been planning to enter the market of small wind power generators for grasping more green energy businesses.

Boltun has also become a production, sales, and logistics company, with B2B e-commerce service. Through the expansion of product categories and integration

with other industry sectors, it hopes that it can become an OEM VMI provider in Asia Pacific Region. It expects to include Remote VMI into the basic service items to improve service quality, establish partnership with customers, introduce design service, and create the biggest value for customers.

As the existing factories of Boltun are located in too many areas, Boltun has bought a land of about 16 hectares and will spend over NTD2 billion on building its new headquarters and manufacturing base, which the design & production of molds, forming, threading, heat treatment, surface treatment, automated inspection, packaging, and shipment will be settled in at the same location, in order to improve the efficiency of shipment and process the growing orders. The construction of the new headquarters is set to be finished in 2017 and by then the company may become a leading factory with the largest production, most complete production lines, and one stop shopping service.

## Booming Aerospace Industry Benefits NAFCO



NAFCO is laser-focused on producing aerospace-grade fasteners. Its technique is the result of collaborative R&D with American aerospace fastener maker AVIBANK. Its products are used in avionics and engine structures and are accredited by GE (U.S. flight engine maker) and Snecma (French flight and rocket engine maker). It has become the only accredited aerospace engine fastener maker in Asia. Its aerospace fasteners and machined parts (mostly nickel alloy steel fasteners) account for 80% of total revenue. Its comprehensive purchase orders cover new flight and maintenance markets.

## China Airline Sees Positive Prospect for Passenger Rate & Freight Rate This Year ; Planning to Establish a Flight Maintenance Company

China Airline is looking forward to the market potential of flight maintenance industry and has announced to 100% invest and set up a flight maintenance company in Taiwan where China Airline's senior vice general manager will be the first president. China Airline says it will build a maintenance shed able to contain 2 wide flights and 2 thin flights on the east side of China Airline's maintenance zone in Taoyuan Airport. In the first stage it will focus maintenance on Boeing 777, 737, and Airbus 350, 320. It expects to recruit talents starting Q2 of 2016 and officially launch the maintenance company in June 2017.





## KLX Inc. Reports First Fiscal Quarter Financial Results



KLX Inc., the world's leading distributor and value added service provider of aerospace fasteners and consumables, and a provider of services and products to the oil and gas industry, announced its first fiscal quarter 2015 financial results.

Adjusted operating earnings, excluding costs as defined, were \$55.9 million, and adjusted operating margin was 13.0 percent. On a GAAP basis, including costs as defined, operating earnings were \$47.5 million. Adjusted EBITDA,

excluding costs as defined and non-cash compensation expense, declined by 3.1 percent from \$83.3 million to \$80.7 million.

Commenting on the Company's recent performance, Amin J. Khoury, Chairman and Chief Executive Officer of KLX said, "I am pleased to report that we completed our first full fiscal quarter as an independent public company since separating from our former parent, B/E Aerospace, Inc. The Company's results reflect solid performance by our Aerospace Solutions Group segment ("ASG"), which recorded year-over-year and sequential quarterly revenue growth."

## Century Fasteners Honored with Quality Award from Parker Accumulator



Century Fasteners Corp. has received a highly coveted Quality Award from Parker Accumulator, a division of Parker Hannifin Hydraulics. Parker Accumulator and Cooler Division is the leading manufacturer of hydropneumatic accumulators and coolers for industrial and mobile applications in North America. Ramon Torres (Parker Accumulator Division Supply Chain Manager) stated that the award was presented for "partnership efforts regarding on-time delivery, quality assurance and dedicated customer service." Torres said, "With Century Fasteners Corp., we have a partner that is a true game changer across our supply chain with fasteners and many more product lines. We are excited to be in the relationship and look forward to continued success."



## TriMas Announces John Aleva as President of Cequent Americas

TriMas Corporation, a diversified global manufacturer of engineered and applied products, announced the transition of leadership within its Cequent business segment. Tom Benson, president of Cequent Performance Products, has retired at the end of April. John Aleva, currently president of Cequent Consumer Products, has succeeded Benson and been promoted to the new position of president, Cequent Americas, since April 28, 2015. In this new role, Aleva will lead the Cequent Americas segment, consisting of Cequent Consumer Products and Cequent Performance Products, which, over time, will be integrated. Aleva will report to Mark Zeffiro, group president of Cequent.

John Aleva was appointed president of Cequent Consumer Products in October 2005. He joined the company as director of integration in 2003, prior to which he worked in the Detroit office of Deloitte Consulting LLP and also held positions at an automotive OEM manufacturer and a Tier 1 supplier. John holds a Master of Business Administration and a Master of Science in Electrical Engineering, both degrees from the University of Michigan, and a Bachelor of Science in Electrical Engineering from Michigan Technological University.

## Precision Castparts Corp. Board Approves Expanded Share Repurchase Program



The Board of Directors of Precision Castparts Corp. has approved a \$2 billion expansion to the Company's existing share repurchase program, effective immediately and continuing through June 30, 2017. The Company plans to repurchase up to \$2 billion of its common stock over the next 12 to 18 months as part of its comprehensive cash deployment strategy. The Company has a consistent track record of successfully redeploying its cash flow from operations through internal business investments, adding market-leading positions through acquisitions, as well as returning cash to shareholders by means of share repurchases.

The Company intends to repurchase outstanding shares from time to time in the open market. As of May 13, 2015, the Company had used \$2.3 billion of the \$2.5 billion previously authorized.



## SFS Shareholders Approve All Proposals at AGM



Shareholders at the 22nd Annual General Meeting of SFS Group AG held on 7 May 2015 in Widnau approved all proposals put forward by the Board of Directors with a large majority. Board Chairman Heinrich Spoerry welcomed 907 shareholders representing 29'121'699 shares or 77.7% of total share capital at the Aegeten sports and recreation center in Widnau SG (Switzerland). In his prepared remarks, Heinrich Spoerry drew attention to the successful course of business in 2014 and the resulting solid sales and profit growth. Turning to the outlook for the 2015 financial year, he outlined the consequences of the Swiss franc's appreciation and the countermeasures that have been taken. He also reaffirmed the previous organic sales growth guidance of 5–7% in local currency for 2015. Sales in Swiss francs are expected to be 2–4% lower y-o-y and the EBITA margin is expected to decline to 12.9–13.5%.

## LISI Aerospace Canada Announces to Strengthen the Competitiveness of Greater Montréal's Aerospace Industry

Mr. Jean-Louis Colders, CEO of LISI Aerospace invited media representatives to a press conference on Monday, June 1, for an important announcement about strengthening the competitiveness of LISI Aerospace Canada and Greater Montréal's aerospace industry.

On hand for the announcement were Mr.

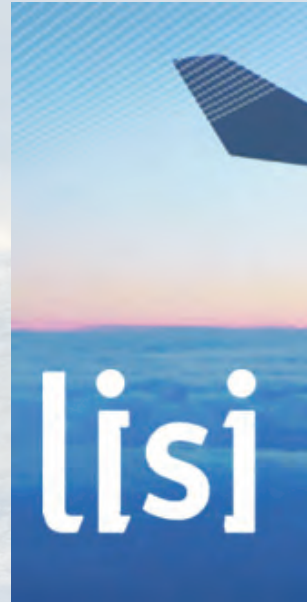
Jacques Daoust, Minister of the Economy, Innovation and Exports, and Mr. Jean Laurin, Vice-President of the Board of Directors of Montréal International and President and CEO of NKF Devencore.

LISI Aerospace Canada is the Canadian subsidiary of French group LISI Aerospace, which ranks third in the world of aeronautical fasteners and assembly components.

## LISI Aerospace Dorval, 10 Years Anniversary

In 2005, LISI AEROSPACE started a greenfield project, opening a plant employing around 70 people. In 2015, the plant counts more than 300 employees in Dorval, Québec, Canada.

On June 1st, Jean-Louis Colders, CEO of LISI Aerospace, and Farrell Campbell, General Manager of Dorval's Plant, were in Montreal, along with the Executive Committee of LISI Aerospace to celebrate the 10th birthday of the plant.



## LISI Aerospace, KUKA Aerospace Develop Single-Robot, Automated System for One-Sided Aircraft Assembly

KUKA Aerospace and LISI Aerospace have joined forces to develop a new fully automated system for one-sided assembly of aircraft structures, whether made of metal or composites. The centerpieces of this automated technology are a single KUKA six-axis robot co-engineered with a newly developed LISI Aerospace structural blind fastener. This highly advanced system, can perform all assembly functions from hole drilling to assembly control, including installation and removal of LISI Aerospace temporary fasteners and the installation of LISI Aerospace blind fasteners.

## Novaria Group Acquires Sky Manufacturing From MacLean-Fogg



Fort Worth-based Novaria Group announces the acquisition of substantially all the assets of Sky Manufacturing (formerly MacLean Sky), an industry-leading manufacturer of aircraft structural fasteners, from MacLean-Fogg Component Solutions. Novaria will continue the growth and expansion of Sky's products by delivering enduring value to customers and employees. Novaria plans for the operation to continue doing business as Sky Manufacturing.

"Sky's capabilities further enhance and diversify our position in the aerospace fastener market," said Bryan Perkins, co-CEO and president of Novaria Group. Sky has been a dependable source for high-strength, close tolerance, fatigue-rated fasteners and has successfully served the global commercial aerospace and military markets.





## Great Milestone for Nedschroef Aviation Fasteners GmbH

The safety and quality is one of the most crucial factor in the aviation & aerospace industry. In order to become a supplier of fasteners to aviation industry, it's highly important to have EN 9100 certification.

Recently, 6 plants of Nedschroef Aviation Fasteners GmbH passed the audit and received certification for EN 9100: 2008:

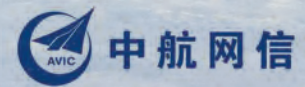
- ##Nedschroef Aviation Fasteners GmbH
- ##Nedschroef Plettenberg GmbH
- ##Nedschroef Fraulautern GmbH
- ##Nedschroef Altena GmbH
- ##Nedschroef Fraulautern GmbH - Berlin
- ##Nedschroef Langeskov ApS
- ##Nedschroef Fasteners (Kunshan) Co., Ltd.

EN 9100 certification provides the framework for a comprehensive quality management system for suppliers of the aviation industry and the aerospace industry on the basis of the general quality management standards according to EN ISO 9001. This certification means all this plants are now certified to produce aviation & aerospace parts and supply to our aviation & aerospace customers. Receiving the certification at first go, once again shows that Nedschroef doesn't compromise when it comes to quality.

## AVIC International Expands Commercial Aerospace Services Portfolio with the Acquisition of Align Aerospace

Align Aerospace Holding, Inc. ("Align" or the "Company"), Greenbriar Equity Group LLC ("Greenbriar") and AVIC International Holding Corporation ("AVIC International") announced that the transaction to sell Align to AVIC International Holding (Zhuhai) Company Limited, a wholly-owned subsidiary of AVIC International, has closed after receiving all necessary government approvals to proceed.

Headquartered in Chatsworth, CA, Align provides supply chain services for the aerospace industry and is a leading global



distributor of fasteners and other hardware, primarily to aerospace original equipment manufacturers (OEMs) and OEM suppliers. The Company sells more than 100,000 SKUs through its distribution centers in California and France, and forward stocking locations throughout North America, Europe and Asia.

AVIC International is a diversified global company with activities in aerospace, trade and logistics, retail, electronics and real estate investment. Within the aerospace sector AVIC International has a strong emphasis on supply chain integration and management and is the primary channel for the import and export of commercial aerospace products in China.

"Align brings valuable experience in aerospace supply chain management to AVIC International," said Mr. Wu Guangquan, Chairman of AVIC International. "With AVIC International's investment, resources and relationships we plan to grow Align's relevance with its current customers in parallel with expanding the business globally, especially in the China market."

## Oriental Bluesky Titanium Technology's High-end Fasteners Help Chinese-made Aircrafts Fly High

Oriental Bluesky Titanium Technology Co., Ltd. is the first Chinese fastener supply company that has been approved to supply fasteners used on C919 (a new aircraft developed by a Chinese company). Oriental Bluesky has been registered into the supplier list for commercial flight and can thus provide products and service to various large sized aircrafts.

C919 is the first large sized aircraft that is 100% designed and produced in China for commercial flight. It is expected that the flight test will soon be implemented this year and the first-batch aircrafts will be delivered to the customer in 2018. The assembly of a C919 will need over 1.8 million pieces of fasteners including over 0.2 million pieces of Ti-alloy fasteners. When the capacity of Oriental Bluesky

for manufacturing Ti-alloy fasteners is fully utilized, about 4 million pieces of high-end fasteners will be produced every year, which can thus satisfy roughly 30% of the total demand of the Chinese market for aviation and aerospace fasteners.

"At the inception of the company, Oriental Bluesky focused on the development of products used for C919. Now it has been able to produce 70% of all the fasteners used on C919," said Xin Wang., "Such a result is not only favorable to the acceleration of the development program of big planes 100% made in China but also help promote Chinese brands through providing service to the development of satellites and rockets as well as project cooperation with domestic Chinese leading universities.



## Alabama Aims To Expand Role In Aerospace Supply Chain

Companies that produce carbon fiber and specialty alloys for aircraft manufacturers have invested more than \$1.7 billion in their Alabama facilities, making the state a growing player in the aerospace supply chain.

In nearby towns, Carpenter Technology Corp. operates a new \$518 million facility capable of producing 27,000 tons of premium metal products annually for aircraft manufacturers and other customers. The company's advanced alloys, powders and titanium products are found in jet engines, structural fasteners, landing gear components, exhaust casings and more.

The Carpenter Alabama operation is so massive that it required 2,750 truckloads of concrete to form the building and its foundation. Carpenter also is building a \$20 million facility on its Limestone County campus that will produce super-alloy powders for jet-engine maker Pratt & Whitney. Super-alloy powders are used in additive manufacturing processes – often called 3-D printing – that are revolutionizing aircraft manufacturing.

The company's connection to aviation goes back to the early 20th Century, when its specialty steels were used by the Wright Brothers in their airplanes.

With aviation analysts predicting a sharp increase in aircraft manufacturing in coming years, Alabama's aerospace-focused economic development efforts are targeting producers of raw materials and other companies throughout the supply chain.

"Alabama has developed a substantial foundation in the aviation and aerospace sector over many decades, and we want to build on that base to penetrate all levels of the industry supply chain," said Greg Canfield, secretary of the Alabama Department of Commerce. "Alabama stands in the center of the emerging Southeastern aerospace cluster, and the presence of companies such as Toray, Hexcel and Carpenter show that we are prepared for an expanding role in the supply chain."

With Airbus set to produce the first A320 Family aircraft at its new \$600 million assembly line in Mobile this year, analysts say Alabama is well positioned to capitalize on industry growth. Global aircraft production, totaling 4,731 planes in 2013, is projected to rise to 6,000 planes by 2023, according to aviation consulting firm ICF SH&E.

Demand for aerospace raw materials – a market now worth \$11 billion – will surge as well, with demand for composites in particular growing significantly in coming years, the firm says. Boeing and Airbus represent nearly 70 percent of the aircraft demand for these composite materials.



## Avdel Aerospace Now Representing Shimco in India

Shimco, a worldwide leader in the manufacture of precision parts, announced the appointment of Avdel Aerospace as the exclusive representative in India for all Shimco parts and services. The agreement was signed at the 2015 Paris Air Show. Avdel Aerospace is a division of Avdel (India) Pvt. Ltd. which was founded in 1961 and supplies fasteners, raw material and other hardware to aerospace and industrial customers. With warehouses and sales office locations around India including Mumbai, Bangalore, Chennai Thiruvananthapuram and Kanpur, Avdel Aerospace has a strategic advantage of effectively covering the geography of the major aerospace pockets around India. Avdel's aerospace division is the largest Indian hardware supplier/distributor to the aviation sector.

Nandish Jingade of Avdel Aerospace comments: "We were actively searching to represent a supplier of high-quality precision parts, and Shimco was at the top of the list. Shimco has built a successful business of metallic and non-metallic precision parts, with a specialty in gap management solutions for sub and final assemblies, and partners directly and indirectly with many of the world's largest Tier 1 and OEM aerospace companies including Airbus, Asco, Boeing, Bombardier Aerospace, Bell Helicopter, Embraer, UTAS, RTI Claro, Sonaca, SPP, MHI and Wesco Aerospace. Avdel Aerospace is honored to be their exclusive representative in India and we look forward to building their future success in the Indian market."

"I met with other potential distributors and representatives in India, but found Avdel Aerospace to have the greatest breadth in terms of customer base, knowledge and experience," comments Peter Voss of Shimco. Avdel Aerospace represents several well-known leading international hardware and raw material manufacturers and is equipped with a solid team of sales engineers and supporting staff. With Avdel Aerospace on board, Shimco is set for considerable growth in India."



# Aerospace Fastener Supplier List

## AS9100 Certified Companies (AS 9100 / EN 9100 : Design, R&D, Production, Installation, Service)

Company Name	Tel	Fax	Email	Web
<b>U.S.</b>				
Aerospace Products S.E. Inc. (APSE)	(+1)210-924-2907	(+1)210-977-8124		<a href="http://www.apseinc.com/">http://www.apseinc.com/</a>
Anillo Industries, Inc.	(+1)714-637-7000	(+1)714-637-3022	info@anilloinc.com	<a href="http://www.anilloinc.com/">http://www.anilloinc.com/</a>
Align Aerospace	(+1)818-727-7800	(+1)818-727-8037		<a href="http://www.alignaero.com/">http://www.alignaero.com/</a>
Arthur Cramer	(+1)630-357-0007	(+1)630-357-0009	Sales@acreps.com	<a href="http://www.acreps.com/">http://www.acreps.com/</a>
Butler Inc.	(+1)310 323-3114	(+1)310 324-0914	john@butlerbolt.com (JOHN HOLLERN)	<a href="http://butlerbolt.com/">http://butlerbolt.com/</a>
Cherry Aerospace	(+1) 714-545-5511		rallebaugh@spstech.com (Robert Allebaugh)	<a href="http://www.cherryaerospace.com/">http://www.cherryaerospace.com/</a>
Diamond Fasteners	(+1)877-729-6283	(+1)631-694-2805	info@diamondfast.com	<a href="http://www.diamondfasteners.com/">http://www.diamondfasteners.com/</a>
ENFASCO	(+1)866-363-2726	(+1) 856-662-6172	sales@enfasco.com	<a href="http://www.enfasco.com/">http://www.enfasco.com/</a>
Federal Manufacturing	(+1)818-341-9825	(+1)818-341-9913	Sales@FederalManufacturing.com	<a href="http://www.federalmanufacturing.com/">http://www.federalmanufacturing.com/</a>
Fastener Dimensions, Inc. (FDI)	(+1)718-925-4064	(+1)718-847-8414		<a href="http://www.fastenerdimensions.com/">http://www.fastenerdimensions.com/</a>
Fastenair	(+1)316-684-2875	(+1)316-683-8437		<a href="http://www.fastenaircorp.com/">http://www.fastenaircorp.com/</a>
Fastener Technology Corporation (FTC)	(+1)818-764-6467	(+1) 818-503-0729	info@ftc-usa.com	<a href="http://www.ftc-usa.com/">http://www.ftc-usa.com/</a>
FTS	(+1)800-662-9232		main@fastenertool.com	<a href="http://www.fastenertool.com/">http://www.fastenertool.com/</a>
Houston Precision Fasteners (HPF)	(+1)713-614-3889	(+1)713-456-2471	mhahn@hpfasteners.com	<a href="http://www.houstonprecisionfasteners.com/">http://www.houstonprecisionfasteners.com/</a>
Jackson Aerospace, Inc.	(+1)310-532-8450	(+1)310-532-3989	sales@jai.aero	<a href="http://jai.aero/">http://jai.aero/</a>
KLX Aerospace Solutions	(+1)305.925.2600	(+1)305.507.7191	Supplier.Questions@KLX.com	<a href="http://www.mmaero.com/">http://www.mmaero.com/</a>
Long-Lok	(+1)513-772-1880	(+1)513-772-1888	custserv@longlok.com	<a href="http://www.longlok.com/">http://www.longlok.com/</a>
MacLean -Fogg-ESNA (Division)	(+1)847-566-0010		info@macleanfoggcs.com	<a href="http://www.macleanfogg.com/">http://www.macleanfogg.com/</a>
Marketing Masters, Inc.	(+1)425-454-5610	(+1)425-454-2932		<a href="http://www.clipnuts.com/">http://www.clipnuts.com/</a>
Rapid Rivet & Fastener Corp.	(+1)800-727-4378	(+1)631-249-0401		<a href="http://www.rapidrivet.com/">http://www.rapidrivet.com/</a>
STANLEY Engineered Fastening	(+1)248-543-7800	(+1)248-543-1403	slinfo@spiralock.com	<a href="http://www.stanleyengineeredfastening.com/">http://www.stanleyengineeredfastening.com/</a>





SPS Technologies	(+1)215-572-3000	(+1)215-572-3790	eeichner@spstech.com (Eric Eichner)	<a href="http://www.spstech.com/">http://www.spstech.com/</a>
TriMas Corporation	(+1)323-722-4760	(+1)323-721-1851		<a href="http://www.trimascorp.com/">http://www.trimascorp.com/</a>
The Young Engineers	(+1) 949-581-9411	(+1)949-583-7662		<a href="http://www.youngengineers.com/">http://www.youngengineers.com/</a>
Twist Tite	(+1)562-407-1733	(+1)562-407-1736	Tinaw@twisttitemfg.com	<a href="http://www.twisttite.com/">http://www.twisttite.com/</a>
The Secure Connection	(+1)717-767-6856	(+1)717-764-2864		<a href="http://www.mcfcorp.com/">http://www.mcfcorp.com/</a>

### France

Ateliers de la Haute Garonne	(+33)-0-5-61-83-60-35			<a href="http://www.ahg.fr/">http://www.ahg.fr/</a>
Rabourdin	(+33)0-1-64-76-41-01	(+33)0-1-64-76-41-06	industrie@rabourdin.fr	<a href="http://www.rabourdin.fr/">http://www.rabourdin.fr/</a>
LISI AEROSPACE	(+33)-0-1-40-19-82-00	(+33) -0-1-40-19-82-01		<a href="http://www.lisi-aerospace.com/">http://www.lisi-aerospace.com/</a>

### UK

CNC Leicester Ltd	(+44)-0-116-246-0118	(+44)-0-116-350-0161	info@cncleicester.com	<a href="http://www.cncleicester.com/">http://www.cncleicester.com/</a>
JP Aero	(+44 )-0-208-504-8833	(+44) -0-208-505-0697	sales@jpaerocom.co.uk	<a href="http://jpaerocom.co.uk/">http://jpaerocom.co.uk/</a>
Stone Fasteners	(+44) -0-208-293-5080	(+44) -0-208-293-4935	DaphneL@stonefasteners.com (Daphne Logaras)	<a href="http://www.stonefasteners.com/">http://www.stonefasteners.com/</a>

### Taiwan

SAN SHING FASTECH CORP.	(+886)-6-2306611	(+886)-6-3300281	sanshing@mail.sanshing.com.tw	<a href="http://www.sanshing.com.tw">www.sanshing.com.tw</a>
YING MING INDUSTRY CO., LTD.	(+886)-7-6991231~5	(+886)-7-6991511	yingming@ymhiten.com.tw	<a href="http://www.ymhiten.com.tw">www.ymhiten.com.tw</a>
ANCHOR FASTENERS INDUSTRIAL CO., LTD.	(+886)-7-6227799	(+886)-7-6224676	sales@anchorfast.com.tw	<a href="http://www.anchorfast.com.tw">www.anchorfast.com.tw</a>
CHUN YU WORKS & CO., LTD.	(+886)-7-6224111	(+886)-7-6216697	sales@chunyu.com.tw	<a href="http://www.chunyu.com.tw">www.chunyu.com.tw</a>
JAU YEOU INDUSTRY CO., LTD.	(+886)-07-6211759	(+886)-7-6221859	jau@ms10.hinet.net	<a href="http://www.jauyeou.com">www.jauyeou.com</a>
NATIONAL AEROSPACE FASTENERS CORPORATION	(+886)-3-4508868	(+886)-3-4604183	sales@ms1.nafco.com.tw	<a href="http://www.nafco.com.tw">www.nafco.com.tw</a>
U-CHANCE ENTERPRISES CO., LTD.	(+886)-7-6960134	(+886)-7-6960124	sales@uchance.com.tw	<a href="http://www.uchance.com.tw">www.uchance.com.tw</a>

### India

Lakshmi Precision Screws Ltd.	(+91)-1262 - 248288	(+91)-1262 - 248297	corp_aff@lpsindia.com	<a href="http://www.lpsindia.com/">http://www.lpsindia.com/</a>
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### ISO/EN/AS9120 Certified Companies(AS 9120 / EN 9120 : Distribution & Retail)

Company Name	Tel	Fax	Email	Web
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U.S.				
AAA Aircraft Supply	(+1)860-749-5192		sales@aaa-aircraft.com	<a href="http://www.aaa-aircraft.com/">http://www.aaa-aircraft.com/</a>
ASC	(+1)817-640-1300	(+1)817-649-2685		<a href="http://www.ascintl.com/">http://www.ascintl.com/</a>
AMI	(+1)973-472-2300	(+1)973-472-4120	aerospace@aero-space.us	<a href="http://www.aero-space.us/">http://www.aero-space.us/</a>
Av-Tech Industries	(+1)817-640-4031	(+1)817-649-1355		<a href="http://www.av-techind.com/">http://www.av-techind.com/</a>
Allied Aerospace, Ltd.	(+1)877-284-0297	(+1)817-284-1508	welcome@alliedaero.com	<a href="http://www.alliedaero.com/">http://www.alliedaero.com/</a>
ACA	(+1)978-362-1947	(+1)978-362-2194	acacorp@aol.com	<a href="http://www.acacorporation.com/">http://www.acacorporation.com/</a>
Anatase Products	(+1)661-822-6873	(+1)661-823-7312	sales@anataseproducts.com	<a href="http://www.aircraftbolts.com/">http://www.aircraftbolts.com/</a>
A&W	(+1)951-781-4901	(+1)818-767-0439	chris@longlok.com	<a href="http://www.awscrow.net/">http://www.awscrow.net/</a>
Aero-Missile	(+1)215-245-5700	(+1)215-638-9582		<a href="http://www.aeromissile.com/">http://www.aeromissile.com/</a>
AVK	(+1)661-257-2329	(+1)661-257-8043	JLawrence@AVKFasteners.com	<a href="http://www.avkfasteners.com/">http://www.avkfasteners.com/</a>
ALLMETAL	(+1)631-243-5200	(+1)631-243-5307	info@allmetalcorp.com	<a href="https://allmetalcorp.com/">https://allmetalcorp.com/</a>
Antrin Miniature Specialties	(+1)760-723-7605	(+1)760-723-7624	Anne@AntrinOnline.com	<a href="http://www.antrinonline.com/">http://www.antrinonline.com/</a>
Century Fasteners	(+1)615-414-0901			<a href="http://www.centuryfasteners.com/">http://www.centuryfasteners.com/</a>
EXCEL AEROSPACE	(+1)818-767-6867	(+1)818-504-2979	sales@excelsaero.com	<a href="http://www.excelsaero.com/">http://www.excelsaero.com/</a>
Fred A. Moehring	(+1)800-662-7456	(+1)718-963-2226		<a href="http://www.famsales.com/">http://www.famsales.com/</a>
FIT	(+1)310-538-1111			<a href="http://www.fitfastener.com/">http://www.fitfastener.com/</a>
Flip Perillo Fasteners	(+1)661-406-8325	(+1)661-948-1822	Contact@flipperillofasteners.com	<a href="http://flipperillofasteners.com/">http://flipperillofasteners.com/</a>
General Aircraft	(+1)805-983-8500	(+1)805-983-8550	Will@GeneralAircraft.com	<a href="http://www.generalaircraft.com/index.asp">http://www.generalaircraft.com/index.asp</a>
HMS Fasteners	(+1)520-623-8631	(+1)800-362-4986	sales@hmsfasteners.com	<a href="http://www.hmsfasteners.com/">http://www.hmsfasteners.com/</a>
Hobson Manufacturing	(+1)818-857-5453	(+1)213-401-2428	sales@hobsonmfg.com	<a href="http://www.hobsonmfg.com/">http://www.hobsonmfg.com/</a>
Impex International Inc	(+1)855-785-8563	(+1)260-489-3040	nshah@impexint.com	<a href="http://www.impexint.com/">http://www.impexint.com/</a>
Integrity Fasteners	(+1)714-639-2040	(+1)714-639-2889	sales@nutsbolts.com	<a href="http://www.nutsbolts.com/">http://www.nutsbolts.com/</a>
Lehigh-Armstrong Inc.	(+1)800-225-1396	(+1)-978-663-5125	sales@lehigh-armstrong.com	<a href="http://www.lehigh-armstrong.com/">http://www.lehigh-armstrong.com/</a>
Metropolitan Aircraft	(+1)631-752-2290	(+1)631-752-1764		
Nyltite Corporation of America	(+1)800-635-5238	(+1)908-561-8263	NCorporati@aol.com	<a href="http://www.nyltite.com/">http://www.nyltite.com/</a>
Olander	(+1)800-538-1500	(+1)408-735-6515	customercare@olander.com	<a href="http://www.olander.com/">http://www.olander.com/</a>
Peterson Tool Company	(+1)615-242-7341	(+1)615-242-7362	info@petersontool.com	<a href="http://petersontool.com/">http://petersontool.com/</a>
Rocket Air	(+1)817-640-5340	(+1)817-649-7250	steve.hibbard@rocketairsupply.com	<a href="http://www.rocketairsupply.com/">http://www.rocketairsupply.com/</a>
TEELING & GALLAGHER	(+1)317-251-9571	(+1)317-251-9571	Sales@tgrep.com	<a href="http://www.tgrep.com/">http://www.tgrep.com/</a>
United Drill Bushing Corporation	(+1)800-486-3466	(+1)562-803-6898	united@ucc-udb.com	<a href="http://www.ucc-udb.com/">http://www.ucc-udb.com/</a>
ZAL	(+1)800-327-8289			<a href="http://www.zalfastener.com/">http://www.zalfastener.com/</a>



<b>UK</b>				
APL	(+44)-1273-492097	(+44)-1273-492903	sales@aplaero.com	<a href="http://www.aplaero.com/">http://www.aplaero.com/</a>
Amfast	(+44)-0-1455-825445	(+44)-0-1455-828521	sales@clarendoneng.co.uk	<a href="http://www.amfast.co.uk/">http://www.amfast.co.uk/</a>
Aerospace Fasteners Limited	(+44)-0-1628-777231	(+44) -0-1628-630169	enquiries@aerofast.co.uk	<a href="http://www.aerofast.co.uk/">http://www.aerofast.co.uk/</a>
CARONA	(+44) -0-2085-922576	(+44) -0-2085-958024	janetm@carona-reuter.com	<a href="http://www.carona-reuter.com/">http://www.carona-reuter.com/</a>
ComAero Fasteners	(+44) -0-1923-274710	(+44) -0-1923-274713	info@comaerofasteners.co.uk	<a href="http://www.comaerofastenersltd.co.uk/">http://www.comaerofastenersltd.co.uk/</a>
Defence Fasteners	(+44)-0-1293-525811		sales@defencefasteners.com	<a href="http://www.defencefasteners.com/">http://www.defencefasteners.com/</a>
Earlston Technology	(+44)-0-24-7671-7023	(+44)-0-24-7671-7062	sales@e-tech.co.uk	<a href="http://www.e-tech.co.uk/">http://www.e-tech.co.uk/</a>
Montrose	(+44)-0-1494-451227	(+44)-0-1494-436270	sales@themontrosegroupp.com	<a href="http://www.themontrosegroupp.com/">http://www.themontrosegroupp.com/</a>
Swift Aerospace	(+44)-0-17-0729-4400	(+44) -0-1707-294409	sales@swiftaero.com	<a href="http://www.swiftaero.com/">http://www.swiftaero.com/</a>
SPECIALTY FASTENERS	(+44)-0-1803-868677	(+44) -0-1803-868678	sales@specialty-fasteners.co.uk	<a href="http://www.specialty-fasteners.co.uk/">http://www.specialty-fasteners.co.uk/</a>
<b>France</b>				
HT FIXATIONS	(+33)-0-1-64-03-78-82	(+33) -0-1-64-20-10-66	contact@htfixations.com	<a href="http://www.htfixations.com/">http://www.htfixations.com/</a>
Sodimatel Fasteners	(+33) -0-1-30-86-96-73	(+33)-0-1-30-86-96-74	compta.e.alves@sodimatel-fasteners.fr	<a href="http://www.sodimatel-fasteners.fr/">http://www.sodimatel-fasteners.fr/</a>
<b>India</b>				
Global Impex	(+91)11-4242-0475	(+91)11-4309-5332	sales@globalimpexindia.com	<a href="http://www.globalimpexindia.com/">http://www.globalimpexindia.com/</a>
Zenith Industrial Products	(+91)022-2847-0705	(+91)022-2847-0705	zenith@zip-india.com	<a href="http://www.zip-india.com/">http://www.zip-india.com/</a>
<b>Israel</b>				
GIN Engineers Ltd	(+972)39502529	(+972)39502602	gin@netvision.net.il	<a href="http://ginengineers.com/">http://ginengineers.com/</a>
<b>Germany</b>				
Protec	(+49)040 - 713-77-40	(+49)040 - 713-87-62		<a href="http://www.the-cap-company.de/">http://www.the-cap-company.de/</a>
<b>Australia</b>				
Infastech® Australia	(+61)3-9765-6400	(+61) 3-9765-6445	Aero@infastech.com.au	<a href="http://www.infastechaustralia.com.au/">http://www.infastechaustralia.com.au/</a>
<b>Canada</b>				
APPLIFAST INC	(+1)204-837-8361	(+1)204-837-3520	info@applifast.com	<a href="http://www.applifast.com/">http://www.applifast.com/</a>
<b>Italy</b>				
Leghe Leggere Lavorate	(+39) 02-45-7121-15	(+39) 02-48-80-012	info@legheleggere.com	<a href="http://www.legheleggere.com/">http://www.legheleggere.com/</a>
<b>Switzerland</b>				
SFS Group	(+41)71-727-62-62	(+41)71-727-51-03	info@sfs.biz	<a href="http://www.sfsintec.biz/">http://www.sfsintec.biz/</a>