



WHITE PAPERS

Spectrum Company Profile Pages

Updated: June 2007



Spectrum Associates, Inc. is a leader in quality manufactured fluid control instrumentation serving the defense, aerospace and commercial industries.

FOUNDED:

Established in 1957 as a new product design and development company, Spectrum has made notable advances in diversified technologies, positioning the company to its current status as a prominent CAD/CAM engineering-oriented quality manufacturer.

SALES:

Spectrum has demonstrated steady growth with expanded products and sales – and with the continuous profitable operations.

PRODUCTS:

Capitalizing on dedicated research and development of aerospace instruments, Spectrum has a continuous record of successfully producing state-of-the-art crash-resistant breakaway valves, pressure switches, indicators and hydraulic subassemblies. Spectrum has earned 30 U.S. and foreign patents protecting its broad product line.

CUSTOMERS:

Dept. of Defense, NASA, Sikorsky Aircraft, Aerospace, Boeing, Northrop Grumman, Lockheed Martin, Bell Helicopter, Honeywell, HR Textron, General Electric, CASA, Westland Aerospace, Hamilton Sundstrand, Parker, numerous additional prominent firms worldwide, and foreign military organizations.

MANUFACTURING:

Spectrum manufactures its products in Milford, CT. Modern CNC milling and turning centers supplement the engineering laboratories and prototype development.

AWARDS:

Spectrum is a small business with a total commitment to producing quality instrumentation on schedule with outstanding performance. This commitment has resulted in the following achievements: U.S. Small Business Administration "Award for Excellence" 1985, U.S. Small Business Administration "Supplier of the Year" 1996, Northrop Grumman Corp. "Supplier of the Year" 1996, U.S. Small Business Administration "Subcontractor of the Year" Region I winner 1997, and Defense Contract Management Command Honor Roll Member, D.S.C.R. Gold Medalist 2001.

CORPORATE MEMBERSHIPS:

American Defense Preparedness Association (ADPA)
American Helicopter Society (AHS)
Instrument Society of America (ISA)
National Defense Industrial Association (NDIA)
Society of Automotive Engineers (SAE)

TRADEMARKS:

<i>BALVAC®</i>	<i>BLADEALERT®</i>	<i>CENTRIP®</i>
<i>DELTALERT®</i>	<i>FRANGINSERT®</i>	<i>SPECTRUM®</i>



OFFLOAD CAPABILITY:

Award-winning, woman-owned small business with more than 46 years in the aerospace industry.

30,000 sq. Ft. facility fully-equipped with modern equipment

Approved by more than 27 major O.E.M.s

Thoroughly familiar with aerospace quality requirements

Flight Safety part approval, ISO/AS certifications

Engineering Department

Highly experienced in-house aerospace engineers with advanced degrees to provide custom design capability or enhance existing component build-to-print requirements for reduced cost and increased reliability.

Contract Administration

Full time administration to ensure on time delivery of quality hardware with no "paperwork" delays

Assembly

20 full time trained certified technicians to provide electromechanical assembly and all aspects of aerospace component testing - soldering / calibration / welding / ATP of complex hydraulic sub-assemblies

Lab Environment

Clean / controlled - quality testing capability.

Pressure Capability

Shop air, Skydrol, MIL-H-5606, MIL-C-83282, jet fuel media test; Vacuum to 8,000 p.s.i. for static applications.



OFFLOAD CAPABILITY, CONT.

Flow Capability

Skydrol or MIL-C-83282 up to 6 GPM at 4000 p.s.i.

Systems Integration Capability

Add/test servovalves, check valves, pressure switches, solenoids to manifold assemblies.

Typical Applications

Actuators, manifolds, indicators, breakaway valves.

PRODUCT LINE:

Pressure Switches

Spectrum's PRESSURE SWITCHES deliver performance, meeting virtually all switching requirements from 2" H2O through 18,000 p.s.i. pressure ranges. A wide variety of configurations are available as well as selection of threaded ports and electrical connectors.

- Gauge
- Absolute
- Differential
- Barometric
- Vacuum

Switch Series

Series	Sensor Type	Pressure Range
2300	Piston	400-500 psig
2335	Diaphragm	4-400 psig
2360	Piston	600-5000 psig
2370	Diaphragm	5-400 psig
3200	Capsule	2"-60" H2O
4300	Diaphragm	4-250 psia
5000	Diaphragm	2" H2O-100 psid
7000	Diaphragm	2-30" Hg



PRODUCT LINE, CONT.

Indicators

Spectrum's INDICATORS deliver reliability in the field, with pressure ranges from 2 through 10,000 p.s.i. Standard envelopes available as well as custom designs for specific requirements. Pressure port connections for MS, NPT or weld joints.

- Hydraulic
- Pneumatic
- E.C.S.
- Fuel Applications

Series 9000

Type	Description
9018	Hydraulic Indicator
9026	Linear Indicator
9048	Position Indicator
9049	Indicator/Switch
9050	Engine Cowling Switch

Crash-Resistant Breakaway Valves

Spectrum's CRASH-RESISTANT BREAKAWAY VALVES deliver state-of-the-art capability.

Frangible fittings to separate and seal fuel or other flammable fluids within hoses, tanks or other containers to prevent hazardous fluid flow due to crash, hard landings or inadvertent separation.

Series 14000

Series	Description	Separation Loads
14160	Single Closure Cell Mounted	300-1000 lbs.
14162	Double Closure 90° Elbow	300-1000 lbs.
14165	Double Closure Line Mounted	300-1000 lbs.
14169	Vent Line Reduced Size	300-1000 lbs.
14948	Quick Disconnect Frangible	300-1000 lbs.



PRODUCT LINE, CONT.

Actuators, Manifolds & Subassemblies

Spectrum's ACTUATORS and MANIFOLDS reflect our commitment to design-build.

- Aircraft
- Medical
- Automotive
- Petroleum

Custom Instrumentation

Type	Description	Application
2212	High/Low Pressure Switch	Dual Set-Points
2335	Switch/Check Valve Assembly	Fuel System Pressurization
22000	Hydraulic Manifold Assemblies	Custom

Custom Products

Request drawings on the following Spectrum custom products:

High/Low Pressure Switches - 2212 Series

Blade Pressure Transducers - 6000 Series

Temperature-Compensated Pressure Switch - 6100 Series

Extremely High Pressure Switches - 8000 Series

Indicators - 9000 Series

Self-Sealing Breakaway Valves - 14000 Series

Hydraulic Manifolds - 22000 Series



PLANT TOUR:

Consulting Department

In addition to our full time staff of engineers, Spectrum maintains a consulting dept. comprised of acknowledged systems engineering experts.

These are generally recent retirees from major aerospace companies who possess a wealth of knowledge and experience with aircraft system design.

This complements our capability in a unique manner, allowing Spectrum to not only design the component but assist the customer with expert advice on the system requirements relative to components, as well.

Our current consulting staff represents over 150 years of aircraft design experience and is a ready, reliable resource for our customer.

Engineering & Design

With a proven history in aircraft/industrial system component design, Spectrum maintains a highly competent staff of mechanical and electrical engineers with advanced degrees.

Our current engineering group is comprised of 6 full time engineers, who are well versed in applicable specifications as well as component design. This allows Spectrum to provide quick, accurate technical responses to challenging system requirements or component capabilities. With more than twenty trained and certified technicians, Spectrum can provide reliable assembly of precision aerospace components. All technicians receive training prior to authorization for assembly or are tested on an individual basis.

All technicians are trained and certified for the various aspects of component or sub-assembly processing -- soldering, welding, pressure calibration, etc. and every aspect of the process is supervised and monitored by Spectrum Quality Assurance. Spectrum can adapt the assembly process to accept virtually any component for pressure testing or calibration. Technicians for "flight safety" or other complex assemblies receive additional training and are certified prior to authorization for these activities.



PLANT TOUR, CONT.

Build & Test

With more than twenty trained and certified technicians, Spectrum can provide reliable assembly of precision aerospace components. All technicians receive training prior to authorization for assembly or are tested on an individual basis.

All technicians are trained and certified for the various aspects of component or sub-assembly processing -- soldering, welding, pressure calibration, etc. and every aspect of the process is supervised and monitored by Spectrum Quality Assurance.

Spectrum can adapt the assembly process to accept virtually any component for pressure testing or calibration. Technicians for "flight safety" or other complex assemblies receive additional training and are certified prior to authorization for these activities.

Spectrum U.S. Letters Patents

Starfinder

Adjustable Pressure Switch

Vibration Isolation Mount

Self-Closing Breakaway Valve

Temp Comp Pressure Diff Setting

Fluid Reservoir Level Ind. Pre Relief

Omnidirectional Inertia Switch

Temp Comp Pressure Diff Setting

Spool Deflection Indicator

Frangible Connectors

Pressure Sensor/Level Indicator

Fluid Reservoir Level Ind. Pre Relief

Temperature Comp Pressure Switch

PLANT TOUR, CONT.

Quality System Approvals

As Spectrum's primary market is aerospace, our quality system is continually upgraded to conform to the most stringent specifications - ISO and AS as well as individual customer requirements. With more than 46 years of experience in providing precision flight safety components, the quality of the product is verified from the outset.

Spectrum Associates, Inc. maintains a quality system in compliance with ANSI/ASQC 9001, ISO 10011-1 and applicable portions of FAR 21 and FAR 45. Prime customer approvals are listed below.

<u>Customer</u>	<u>Quality System Approval</u>
Boeing Military Transport	ISO 9001
BW/IP (E-Systems)	MIL-I-45208
Crane Hydro-Aire Division	QAE-P-1081
DCMC - Hartford, CT	ISO 9001
Datascope	Certified Supplier
Erickson Air Crane Co.	PQR 300
F.A.A.	FAR 21 & 45
Flight Refueling Limited	FRL/QAM/5
General Electric Aircraft Engines	S-1000C, Cat. 1#
GKN Westland Aerospace	WOS-799-015
Goodrich Aerospace	MIL-I-45208
Hamilton Sundstrand	PQA-002
Honeywell Engines	QPS-002
HL Textron	MIL-I-45208
Kaiser Electroprecision	PQR P111047
Kaman Aerospace	MIL-I-45208
McDonnell Douglas (Boeing)	MIL-I-45208
Nordam Group	QAP-9143-3
Northrop Grumman Group	QA500, Level 3*
Ozone Industries	MIL-I-45208
Parker Hannifin Airborne	ISO 9001
Parker Hannifin Air/Fuel Div.	D112 (ISO 9001)
Raytheon E-Systems	MIL-Q-45208
Sikorsky Aircraft	MIL-I-45208
Stewart Warner Group	MIL-Q-45208
Turbomeca Engine Group	TEC 3.10

DSQR * Key Supplier



PLANT TOUR, CONT.

Order & Fulfillment

While Spectrum is a small business, our order system is fully automated. From the time your order is received, its status is continually reviewed and updated.

Our certified contract review process makes certain that every aspect of the contractual requirements are met or addressed prior to shipment.

With continual visibility, our schedule remains flexible to accommodate "AOG" or other short lead time requirements. Changes in schedule are immediately communicated to the customer. We strive to meet 100 percent of our scheduled shipment requirements, as evidenced by numerous contracting awards from our customers.

Customer Service

At Spectrum, customer service is our trademark, from your initial inquiry through completion of your order.

Our approach to every requirement remains constant:

1. understand the application and its parameters
2. verify that the component will meet the requirement
3. recommend the suitable component or an economical alternative
4. provide a realistic and reliable lead time
5. communicate with the customer regarding all aspects of the order
6. track the order on a continual basis through completion
7. follow up to make certain of customer satisfaction
8. key personnel can be reached on a 24-hour basis
9. inventory is readily available for schedule fluidity on long-term agreements

If Spectrum can't meet your requirements, we'll direct you to a company that can!

U.S. SALES REPRESENTATIVES:

Northeast

CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, WV, & CANADA

Engineered Components, Inc.

Wayne DeWalt

PO Box 133, Palmerton, PA 18071-0133

Tel: 610-826-3550

Fax: 610-826-6352

Cell: 610-349-0509

eci1@ptd.net

D.C. Area

District of Columbia

The Fielding Company

Fred Fielding

613 Keith Lane, Owings, MD 20736

Tel: 301-855-2000

Fax: 410-286-9024

Cell: 703-628-4024

FMFielding@erols.com

Southeast

AL, FL, GA, NC, SC, TN

JEL Technologies

1889 Medinah Lane, Green Cove Springs, FL 32043

Tel: 904-237-1163

Fax: 904-529-2442



Spectrum
ASSOCIATES, INC.

Spectrum Associates, Inc. Company Profile

U.S. SALES REPRESENTATIVES, CONT.

Southwest

AZ, CA, UT

Whitman Technology

507 North Howard Avenue, Covina, CA 91723

Darin Whitman

Sales

Tel: 626-334-5232

Fax: 626-334-5242

Darin@whit-tech.com

Great Lakes Area

IL, IN, MI

J.B. Harry & Associates

Ross Commons, Suite 14, 4466 Darrow Road, Stow, OH 44224

Tel: 330-686-9038

DMHarry@aol.com

WORLDWIDE SALES REPRESENTATIVES:

Brazil

Nelson Rodrigues

Rua Sao Joao 27/108 - CEP

20950-130

Rio De Janeiro - RJ

Brazil

Tel: 011-55-21-2501-2647

Fax: 011-55-21-2241-3802

Cell: 011-55-21-8112-4627



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ASSOCIATES, INC.

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WORLDWIDE SALES REPRESENTATIVES, CONT.

Japan

Avex Aerospace

Hiro Shimizu

Michiko Shukumine

383 Van Ness Avenue, Torrance, CA 90501

Tel: 310 320-9783

Fax: 310-320-9647

Israel

Kidum Representatives

Arnon Keret

61, Beer Ganim Street

PO Box 320

Even-Yehuda 4050

Israel

Tel: 011-972-9899-7942

Fax: 011-972-5421-0718

Europe

Avio-Diepen B.V.

P.O. Box 566

2400 AN Alphen a/d Rijn

The Netherlands

Tel: 011-31-172-449-777

Fax: 011-31-172-449-449

avandongen@avio-diepen.com

www.avio-diepen.com

DIRECTIONS TO SPECTRUM :

Traveling SOUTH

Take I-95 SOUTH to Exit 36 (Plains Road exit). Take a right at the end of the ramp, at light, and take an immediate right into Executive Park. Follow the drive until you come to the first building on your right.

Traveling NORTH

Take I-95 SOUTH to Exit 36 (Plains Road). Take a left at the end of the ramp, at light. Go over thruway, through the first light, then take an immediate right into Executive Park. Follow the drive until you come to the first building on your right.

For more information:

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Milford, Connecticut 06461 USA

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