100 WAYS OF LOOKING AT QUALITY

The companies in our Quality Leadership 100 demonstrate continuous improvement and a commitment to quality.

1903 was a big year. The Wright Brothers took to the skies, the Ford Motor Company got on the road, and a young William Boeing left Yale and headed to the West Coast. The effects of 1903 can still be seen today in the automotive and aerospace industries, as well as in the results of this year's *Quality* Leadership 100 survey.

This year, Ford reached the top spot in our rankings, followed by DME Company, Lee's Grindings, Boeing, and Pratt & Whitney Rocketdyne.

The companies in this year's top five range from 32 at Lee's Grindings to around 170,000 at Boeing and Ford. Though the size of the company varies, these top companies all echo the same theme: Quality is everyone's job.

The analysis varies slightly from year to year. This year companies were evaluated on several criteria, including continuous improvement and internal quality programs in place; contribution of quality to profitability and shareholder value; average number of hours monthly that employees receive quality training; scrap and rework as a percentage of sales; warranty costs as a percentage of sales; and registration to various standards such as ISO 9001.

The BNP Media Market Research Department conducted this year's Quality Leadership 100 Study from September 9 to October 10, 2012. All domestic, qualified *Quality* subscribers were invited to complete a digital version of the survey. In addition, up to three employees at companies listed in the 2011 *Quality* Leadership 100 with valid address were sent paper versions of the survey. At the close of the study, a total of 319 responses were received and analyzed.

Michelle Bangert is the managing editor of Quality. To see past Quality 100 rankings, visit www.qualitymag.com.

Source: Ford

1 FORD

(Dearborn, MI)
www.ford.com

Last August, Ford celebrated the making of its 350 millionth vehicle. As the company pointed out, producing 350,000,000 vehicles in 109 years comes out to one vehicle every ten seconds.

But the automotive giant—with 172,000 employees and 65 plants worldwide—is not just about volume. Quality and productivity are highly valued. As Bennie Fowler, group vice president of global quality and new model launch, says, "It's baked into our overall DNA." Quality and productivity are "as natural to us as breathing."

The One Manufacturing system at Ford is a production system aimed to improve flexibility, process and quality, investment efficiency and capacity utilization.

But having quality initiatives in place can only take a company so far. The people must embrace the system as well, Fowler says. "I would say that just about everybody at Ford is involved in the quality process. Our philosophy is that all of our major functions and our business units have a quality and productivity plan. We understand what our customers want and value."

And they've made progress. The number of manufacturing build issues with a newly produced vehicle is down 90% since 2006. Virtual tools and standard processes have helped improve quality and reduce accidents.

The company's 2011-2012 Sustainability report notes good news in terms of warranty spending, noting "Over the last three years, Ford has reduced its warranty repair rate by 40 percent in each region around the world." Quality is a guiding principle at the company, which considers three different types: basic, performance and excitement. The Sustainability report explains that these cover a range of quality indicators, from vehicle reliability to fuel economy to simply features that delight customers.

2 DME CO.

(Madison Heights, MI)
www.dme.net

Source: DME Co.

Detroit Mold Engineering, later changed to DME, was founded in 1942 by I.T. Quarnstrom. The company manufactures and sells tooling for the die casting industry, and celebrated its 70th anniversary last year. And Quality Manager Tim Pylak has been with the company for half of that time.

"It's been a rewarding career for me," Pylak says. "I loved it from the day I started. Thirty-five years later, I still have that same passion for the company and the people. It's a great place to work."

Everyone takes quality seriously at DME. Pylak always tries to focus on customers who aren't happy by asking, "What can I do to eliminate that barrier?"

In addition, the company uses formal quality programs and has been ISO certified for fifteen years. Though the initial certification requires more work, eventually it can streamline business processes. And because audits can seem frightening, Pylak tries to involve many different people to help calm their fears and clarify the process.

Audits haven't been the only thing to worry about at the company. DME also went through a bankruptcy, but managed to recover and have a record year this year, Pylak says. While economic challenges are one thing, Pylak has also seen quality challenges.

The tightening of tolerances has been one of the most challenging changes in his career, Pylak says, as he's seen the industry go from not very close tolerance parts to the tight tolerances required today. But even as he's had to adapt to new industry requirements, the global economy, and international suppliers, Pylak says some things haven't changed.

"Our original owner of the company and former president always pushed for quality, delivery and service," Pylak says. "And quality was always number one, and to this day, I believe it still is."

3 LEE'S GRINDING INC.

(Strongsville, OH) www.leesgrinding.com

Source: Lee's Grinding Inc.

Lee's Grindings Inc. offers contract manufacturing in addition to its grinding service. Working with high-precision products for aerospace, medical and automotive customers has tightened their focus on quality. Though customer requirements keep getting tighter—especially in the aerospace industry—the company says advancements in metrology equipment have helped meet this challenge. In addition, the fifty-year-old company has been registered to AS9100 since 2003, and the standard has helped their business processes.

President Nick Papanikolaou says that communicating with employees and providing training can help an organization succeed with standards. "I think AS9100 has made us a much better company in terms of quality and service and the way we do things," Papanikolaou says. "Back 20 years ago it was just tribal knowledge. But now there are procedures and processes in place that everyone can focus on in the same way."

"In our organization, it's our culture," Papanikolaou continues. "Quality comes first. Quality, delivery and then cost. That's our approach."

This approach, coupled with their dedication to AS9100, has lead to a continuous improvement culture at DME. "You just don't become AS9100 and that's it," says Quality Assurance Manager Bill Gooch. "You've got to work at it. Using those tools and working at it is going to improve the company."

4 BOEING

(Chicago, IL) www.boeing.com

Source: Boeing

You've no doubt been in one of their planes. Boeing is home to the best-selling commercial jetliner of all time. Total orders for the Boeing 737 exceeded 10,100 airplanes in November 2012. And in December, the company broke their record for year-to-date 737 deliveries. The company delivered its 377th 737 on December 3, 2012, breaking the record of 376 deliveries in 2010.

And as demand continues to grow, the company has been able to produce planes faster. The company increased its rate from 2.5 to 3.5 airplanes per month, and projects a rate of 10-per-month by the end of this year.

This increasingly fast production speed is made possible by the more than 170,000 people that work for Boeing. The Chicago-based company has locations across the United States and in 70 countries. No matter where they are located, quality obviously is important to the staff.

The company has a long history. William Edward Boeing incorporated his business on July 15, 1916, as Pacific Aero Products Co., and later changed the name to the Boeing Airplane Co. Boeing was a close business associate of Fred Rentschler, president of Pratt & Whitney, which leads us to our next company.

5 PRATT & WHITNEY ROCKETDYNE

(Canoga Park, CA) www.pw.utc.com

Source: Pratt & Whitney Rocketdyne

Frederick Brant Rentschler founded Pratt & Whitney in 1925. Today, Pratt & Whitney Rocketdyne provides propulsion systems for spacecraft and has fueled missions to almost every planet in the solar system. With such high stakes, there can be no compromises to quality.

In fact, Pratt & Whitney Rocketdyne's Space Shuttle Main Engine (SSME) is the most highly tested large rocket engine ever built, according to the company's website. It operates from -423 F to more than 6,000 F, has the equivalent of 12 million horsepower, and been part of the space shuttle since 1981.

The company is the number-one rocket engine provider in the country. And the company's rocket engines are behind 80% of all American launches into space.

RANK	COMPANY
1	Ford Motor Co.
2	**DME Company**
3	Lee's Grinding
4	Boeing
5	Pratt Whitney Rocketdyne
6	Optical Integrity
7	LDB Plastics
8	Pneumadyne
9	Multax Corp.
10	C&L Supreme
11	Telexca
12	BRP US
13	BH Electronics
14	Piedmont Plastics
15	OMNI Flow Computers
16	L-3 Cincinnati Electronics
17	Thermacor
18	Flight Line Products
19	Morgan Olson
20	HSTCO
21	PTR Tool and Plastics
22	Element
23	Electrolux
24	TRW Automotive
25	LCS Company

RANK	COMPANY
26	Roberts Manufacturing
27	IEC Electronics Corp.-Albuquerque
28	SEI Group
29	Ausenco
30	TKMNA
31	Douglas Manufacturing
32	Titanium Metals Corporation
33	iCONN Systems
34	Green Tokai
35	Bradleys'
36	Littelfuse
37	Cambridge Int'l
38	Chief Industries
39	A&E Custom Mfg.
40	Team Industries
41	APPH Wichita
42	Ethicon Endo-Surgery
43	ZAPP
44	Honeywell
45	Moriroku Technology NA
46	TE Connectivity
47	Transform Automotive
48	PACAL Industries
49	BorgWarner
50	Wabash Technologies

RANK	COMPANY
51	Chrysler
52	INCOE Corp.
53	Inficon Inc.
54	Penn Machine
55	Steel Grip Inc.
56	Inficon EDC Inc.
57	Cessna Aircraft
58	Berenfield Containers LLC
59	Chemtool
60	Harmac Medical Products
61	Manor Tool
62	Alstom
63	Valmont Industries
64	Parker Hannifin
65	Gooch & Housego
66	Jabil Circuit
67	Jorgensen Conveyors
68	Magnetic Analysis Corp.
69	RGB Spectrum
70	TC Industries
71	Diversified Biomedical Technologies
72	Magna Seating
73	Leggett & Platt
74	Technical Services for Electronics
75	Greenfield Industries

RANK	COMPANY
76	Universal Electronics
77	Suncoast Digital Technology, Inc
78	Trucut Incorporated
79	Cummins Inc
80	Adcole Corporation
81	American Roller Bearings
82	Novi Spring
83	Whirlpool
84	Dyna Empire Inc.
85	Precision Castparts
86	Vesta
87	JEM Technical
88	Westinghouse Nuclear
89	Ventana
90	Lam Research
91	Rockwell Collins
92	Chemineer
93	Johnson Truck Bodies
94	Malbert & Mitchell Grinding
95	BMP America
96	National Biological
97	Techmetals Inc.
98	Top Tool
99	Plexus
100	Herman Miller