



Meet the Quality Leadership 100

Learn more about quality practices at these top companies.

BY MICHELLE BANGERT

There is no one right way to achieve high quality. In fact, there could be 100 different ways to achieve it. To that end, our Quality Leadership 100 survey recognizes dozens of top-performing plants for their dedication to quality.

When I talked to the top five companies, it was clear that certifications and standards were important to them. In fact, several of them were preparing for audits scheduled for later in the week. This year's top company was TRW Automotive, followed by Gooch and Housego Ohio, Cartel Industries, LDB Plastics, and Tecnova Electronics.

Four of the top five were in the Midwest—in Illinois, Michigan and Ohio—and another in California. But no matter the location, the companies' products traveled the world, and so did their staff. One TRW executive had visited more than 100 of the company's plants worldwide.

Our analysis varies slightly from year to year, and this year companies were evaluated on criteria such as continuous improvement and internal quality programs; contribution of quality to profitability and shareholder value; average number of hours of quality training;

scrap and rework as a percentage of sales; warranty costs; and registration to standards such as ISO 9001.

The BNP Media Market Research Department conducted this year's Quality Leadership 100 Study from September 11 to October 9, 2013. 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 2012 Quality Leadership 100 with a valid address were sent paper versions of the survey. At the close of the study, a total of 373 responses were received and analyzed. Here's a look at this year's top companies.

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

1 TRW AUTOMOTIVE

Livonia, MI
www.trw.com

If you've driven safely on a snowy road lately, you might have TRW to thank. TRW supplies automotive safety systems for braking; steering and suspension; and occupant safety, including airbags, seat belts and steering wheels. And as you might expect from a safety-based company, TRW focuses on quality. And they do so in a very visual way. I had chance to tour their Fowlerville, MI, facility several times over the past few years to see the plant in action. Since my last visit a few years ago, they had made some changes in terms of quality, such as adopting an 11-color system on the shop floor. (Yellow stands for mistake-proofing, for example.) This allows TRW staff to walk a shop floor in Michigan or Malaysia and understand the process.

Continuous improvement is also visible in the production control room, which features boards tracking safety, quality and order status for many different projects. It showed both red and



green signs for projects that needed work and those that were on track. This Christmas-looking display showed that the company was always tracking ways to improve.

"The whole system depends on people bringing up problems," says Bryce Currie, global vice president of quality, business excellence and pro-

gram management. If a board was all green, it might raise some questions, he said. The plants also share information and if one plant does something worth adopting, the other plants consider implementing these changes as well. And there are plenty of places to learn: TRW has more than 65,000 employees in more than 185 locations worldwide.

2 GOOCH AND HOUSEGO OHIO

Highland Heights, OH
www.goochandhousego.com



Gooch & Housego manufactures precision photonic components and sub-systems. Formed from leading established companies in these complementary technologies, Gooch & Housego

supplies critical components to optical and laser system manufacturers. The company works with companies in the aerospace and defense industries, life sciences and biomedical, as well as industrial research. The company was founded in 1948 by Archie Gooch and Leslie Housego. Today there are eight manufacturing sites, two in the United Kingdom and six in the United States.

It seems that this growth can be partly attributed to the attention to quality. CEO Gareth Jones explains the policy in the quality manual, explaining that it should be the top priority. "The high standing of Gooch & Housego amongst customers and competitors is largely derived from the quality of our products," Jones states. "We become complacent about quality at our peril."

"I expect everyone to contribute to maintaining and improving quality—our success depends on it."

3 CARTEL INDUSTRIES LLC

Irvine, CA
www.cartelind.com



Cartel Industries has been manufacturing precision sheet metal products since 1971. When I spoke with Kirby D. Unfried, quality manager/planner at Cartel Industries LLC, at the

end of last year, he said that things have been going well for the company. "We've had a really good year this year," Unfried says. "Sales have been up 50%."

In addition to this jump in sales, this past year was notable in terms of new technology. The company upgraded to new equipment, and implemented new business process software. Cartel Industries offers precision sheet metal fabrication, laser cutting, and robotic welding, and works with industries from aerospace and automotive to medical and military. But no matter what the industry, the staff focuses on sending out quality work.

"We do quality work for a decent price," says Unfried. "We pride ourselves on our quality, and the product that the customer is going to get. We make sure that we do good work, make sure quality is designed and built in—not inspected in."

4 LDB PLASTICS INC.

Shelby Twp, MI
www.ldbplastics.com



When I spoke with LDB Plastics, they were in the process of becoming certified to TS16949. The company manufactures plastic injection molded products for both automotive and non-automotive customers.

Being small hasn't stopped them from competing in a global economy. Though the company has less than a dozen employees, LDB Plastics has an international reach. Lately they have been shipping more to Mexico, but they also ship to Brazil, Thailand, Germany and the United States.

Quality Manager Cliff Adkins says attention to quality has helped them compete. "From the ownership all the way down to the operators on the floor, quality is number one, and following the procedures is number two. If you see that the process is flawed then it is affecting the quality."

By creating such quality products from the start, the company has done well with its customers; they couldn't recall a customer concern in the past seven years.

The company also has several new programs under development, and has been working on prototyping for the Volt and the Jeep Cherokee. But they also have other plans for the future.

"This year, we're number four," said Bill Duncan, vice president and COO, "but next year we want to be number one."

5 TECNOVA ELECTRONICS (FORMERLY KNOWN AS LOGICAL PRODUCTS INC.)

Waukegan, IL
www.tecnova.com



Tecnova Electronics is growing. The contract manufacturer specializes in PCB, electro-mechanical, mechanical, and control panel assemblies, and business is going well.

As Quality Manager Scott Martin points out, "Six years ago we were one third our size." When he started, the company was only 35 people, while today they have about 100 and expect that this number could jump to 120 within the next few months.

In addition to bringing on new staff, the company has invested in a lot of new equipment in the past 18 months in order to provide staff with new technology.

The emphasis is all part of the company's goal of high quality products. "It never just ships," says Terence Coleman Jr., director of business development. "We're not that company that pushes something out the door."

"You can't inspect quality in," Coleman says. "You can double-check it, but you have to build it right."

And the organization, with more than 20 engineers on staff, is able to promote quality by getting to the root cause of a problem, correcting it, and making sure it doesn't come back.

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RANK	COMPANY	LOCATION	WEBSITE
1	TRW Automotive	Livonia, MI	www.trw.com
2	Gooch and Housego Ohio	Highland Heights, OH	www.goochandhousego.com
3	Cartel Industries LLC	Irvine, CA	www.cartelind.com
4	LDB Plastics Inc.	Shelby Twp, MI	www.ldbplastics.com
5	Tecnova Electronics	Waukegan, IL	www.tecnova.com
6	Chart Industries, Inc.	Canton, GA	www.chartindustries.com
7	Siemens Energy	Houston, TX	www.siemens.com
8	PTR Tool & Plastics, LLC	Meadville, PA	www.ptrtoolandplastics.com
9	Jankel	Duncan, SC	www.jankel.com
10	Kato Cable LLC	Mankato, MN	www.katocable.com
11	Leggett & Platt, Inc.	Carthage, MO	www.leggett.com
12	Lovejoy, Inc	Downers Grove, IL	www.lovejoy-inc.com
13	Bisco Industries		www.biscoind.com
14	Modern Industries, Inc.	Erie, PA	www.modernind.com
15	KSM Electronics, Inc.	Warrenville, IL	www.ksmelectronics.com
16	Delta Airlines	Atlanta, GA	www.delta.com
17	Fitzpatrick Mfg. Co.	Sterling Heights, MI	www.fitzpatrickmfgco.com
18	PATS Aircraft, LLC	Georgetown, DE	www.patsaircraft.com
19	Piper Plastics, Inc.	Libertyville, IL	www.piperplastics.com
20	PVI Industries, LLC	Fort Worth, TX	www.pvi.com
21	Harbor Steel & Supply Corporation	Muskegon, MI	www.harborsteel.com
22	APPH Wichita, Inc.	Wichita, KS	www.apph.com
23	Greenfield Industries, Inc.	Seneca, SC	www.gfii.com
24	Precision Automation Company, Inc.	Cherry Hill, NJ	www.precisionautomationinc.com
25	RGB Spectrum	Alameda, CA	www.rgb.com
26	Specialty Manufacturing	Murfreesboro, TN	www.smiglobal.net
27	Gardner Denver Nash, LLC	Trumbull, CT	www.gadnerdenver.com
28	Lee's Grinding, Inc.	Strongsville, OH	www.leesgrinding.com
29	seepex, Inc.	Dayton, OH	www.seepex.com
30	IEC Electronics Corp-Albuquerque	Albuquerque, NM	www.iec-electronics.com
31	TC Industries, Inc.	Crystal Lake, IL	www.tcindustries.com
32	Eaton	Sumter, SC	www.eaton.com
33	HMAC USA, LLC	Effingham, IL	www.hmacusa.com
34	Leigh Fibers, Inc.	Wellford, SC	www.leighfibers.com
35	Maury Microwave	Ontario, CA	www.maurymw.com
36	Superior Energy Services	Houston, TX	www.superiorenergy.com
37	Transcat	Aurora, IL	www.transcat.com
38	Barnes Aerospace	Windsor, CT	www.barnesaero.com
39	LORD Corp.	Perkasie, PA	www.lord.com
40	Biotlx	San Diego, CA	www.biotlixinc.com
41	Metem Corporation	Parsippany, NJ	www.metem.com

RANK	COMPANY	LOCATION	WEBSITE
42	Wetsco, Inc.	Tulsa, OK	www.wetsco.com
43	ResMed	San Diego, CA	www.resmed.com
44	Top Tool Company	Blaine, MN	www.toptool.com
45	ABB, Inc.	New Berlin, WI	www.abb.com
46	ITW	Glenview, IL	www.itw.com
47	DME Company, LLC	Madison Heights, MI	www.dme.net
48	Chemring Energetic Devices	Downers Grove, IL	www.chemringenergeticdevices.com
49	GSI Technologies, LLC	Burr Ridge, IL	www.gsitech.com
50	Sauer Danfoss	Ames, IA	powersolutions.danfoss.com
51	North American Stamping Group	Pulaski, TN	www.nasg.net
52	McQuay International	Minneapolis, MN	mcquaybiz.com
53	OHL, Inc.	Brentwood, TN	www.ohl.com
54	Plexus Corporation	Neenah, WI	www.plexus.com
55	Kongsberg Automotive	Grand River, OH	www.kongsbergautomotive.com
56	Waupaca Foundry	Waupaca, WI	www.waupacafoundry.com
57	Dayton Progress Corp.	Dayton, OH	www.daytonprogress.com
58	Measurement Specialties	Hampton, VA	www.meas-spec.com
59	Astronautics Corp. of America	Milwaukee, WI	www.astronautics.com
60	Morrison Products, Inc.	Cleveland, OH	www.morrisonproducts.com
61	Inteva Products	Vandalia, OH	www.intevaproducts.com
62	Cambro Manufacturing Company	City of Industry, CA	www.cambro.com
63	Pentair Water	Brookfield, WI	www.pentairwatertreatment.com
64	Deringer-Ney, Inc.	Marshall, NC	www.deringerney.com
65	Tella Tool & Mfg.	Lombard, IL	www.tellatool.com
66	Linamar	Livonia, MI	www.linamar.com
67	Komar Screw Corp.	Niles, IL	www.komarscrew.com
68	Western Consolidated Technologies	Fremont, IN	www.wctgroup.com
69	Exelis, Inc.	Chesapeake, VA	www.es.exelisinc.com
70	PW Stoelting, LLC	Kiel, WI	stoelting.com
71	Thule Group	Seymour, CT	www.thule.com
72	JEM Technical	Orono, MN	www.jemtechnical.com
73	Northrop Grumman	St. Augustine, FL	www.northropgrumman.com
74	Honeywell International	Minneapolis, MN	www.honeywell.com
75	Baxter Healthcare	Daytona Beach, FL	www.baxter.com
76	Mondi Jackson	Jackson, MO	www.mondigroup.com
77	Westinghouse	Pittsburgh, PA	www.westinghousenuclear.com
78	Markel Corporation	Plymouth Meeting, PA	www.markelcorporation.com
79	Wireless Technology, Inc.	Ventura, CA	www.gotowti.com
80	Universal Electronics, Inc.	Santa Ana, CA	www.uei.com
81	L-3 Communications Security & Detection Systems	Orlando, FL	www.l-3com.com
82	Tecton Products, LLC	Salem, VA	www.tectonproducts.com

RANK	COMPANY	LOCATION	WEBSITE
83	MTS	Eden Prairie, MN	www.mts.com
84	Gabriel Ride Control	Chickasha, OK	www.gabriel.com
85	Myers Spring Co., Inc.	Logansport, IN	www.myersspring.com
86	AAM	Detroit, MI	www.aam.com
87	Energy Hardware	Greer, SC	www.energyhardware.com
88	Standard Iron	Alexandria, MN	std-iron.com
89	Chrysler	Auburn Hills, MI	www.chryslerllc.com
90	Weasler Engineering, Inc.	West Bend, WI	www.weasler.com
91	Cannon Gasket, Inc.	Fontana, CA	www.cannongasket.com
92	Goex Corporation	Janesville, WI	www.goex.com
93	Parker Hannifin ECD	Cleveland, OH	www.parker.com
94	Brazonics BE Aerospace	Hampton, NH	brazonics.bethermalandpower.com
95	Salisbury by Honeywell	North Charleston, SC	www.honeywell.com
96	Kennametal Stellite, LP	Goshen, IN	www.kennametal.com/stellite
97	Bombardier	Tucson, AZ	www.bombardier.com
98	Cygnus, Inc.	Ponderay, ID	www.cygnusaero.com
99	Filmtronics, Inc.	Butler, PA	www.filmtronics.com
100	Techmetals, Inc.	Dayton, OH	www.techmetals.com

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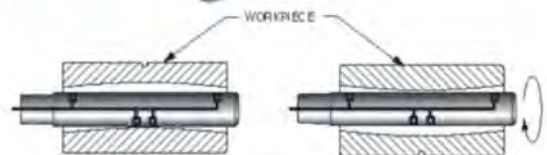


FIGURE 1

STRAIGHTNESS AIR GAGE'S

Western Gage Corporation

E-mail: sales@westerngage.com
Phone: (805) 445-1410 Fax: (805) 445-7530
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