

Azima posts reliability scores for industrial pump manufacturers.

CIRCOR International scores highest for industrial pump reliability in 2018.

2018 rankings based on millions of field-tests conducted over 20 years on 100,000 pumps.

Boston, MA (USA) – November 16, 2018 - Azima, Inc. has released the 2018 edition of its definitive reliability scores for the industrial pumps most commonly deployed around the world today. Azima has ranked not just the world's leading industrial pump brands, but specific models as well.

Azima's *2018 Reliability Ratings Report (Industrial Pumps)* is the latest installment in an ongoing series of performance ratings published by Azima for various classes of industrial rotating machinery.

Azima is a fast-growing high-tech company that maximizes industrial productivity. Azima provides technology-powered, data-driven Predictive Maintenance services to hundreds of leading companies in twelve different industries, all over the world.

Azima's pump-reliability rankings are based on data derived from millions of monthly machine-tests conducted by Azima experts using Azima tools and technologies over a 20-year period, on 100,000 unique industrial pumps. In the industrial pump category alone, Azima maintains reliability data on more than 150 different manufacturer brands and 7,000 unique models. Azima's data lake holds decades' worth of machine-test data on the full-range of industrial rotating equipment, including motors, pumps, fans, and rollers.

Today's announcement holds special interest for plant managers, reliability engineers and IIoT professionals serving leading global companies in industries like: Aerospace; Automotive; Chemicals; Food & Beverage; Metals & Mining; Oil & Gas; Pharma & Biotech; Pulp & Paper; Power Generation; and Water Treatment.

Free copies of Azima's *2018 Ratings Reliability Report (Industrial Pumps)* can be obtained by emailing: rcellini@azimaglobal.com (Subject Line: Industrial Pumps).

When releasing the report to the general public, Azima CEO Burt Hurlock announced that CIRCOR International, Inc. earned top scores for industrial pump reliability in 2018. CIRCOR headquartered in Burlington, MA, manufactures flow and motion control products for the world's most severe-service and mission-critical applications – from valves to instruments, actuation to pumps, motors to regulators.

Hurlock stated: "Machine reliability is a readily-solved information problem, not an inscrutable black box. Azima uses data and algorithms to predict machine failure months and even years in advance. Our data scientists have proven beyond question that CIRCOR has earned its global reputation for quality, reliability, and operational excellence."

Ashish Dutta, CIRCOR's Vice President for Strategic Marketing and Product Management, said: "We are delighted with the results published in Azima's *2018 Reliability Ratings Report* for industrial pumps." He added: "The CIRCOR family is a collection of reputable brands, delivering highly engineered flow control solutions for critical and severe service applications. Our Imo and Warren pump brands bring over 100 years of quality and innovation in flow excellence. We continue to build on their legacies by innovating every day and serving our customers around the world with reliable fluid handling solutions."

IHS Markit is the world's leading source of information, insight and analytics in critical areas that shape the technology ecosystem (www.ihsmarkit.com). According to Joanne Goh, the lead Research Analyst for Electric Motor Systems & Capital Equipment in IHS's Manufacturing Technology Group:

"The world market for centrifugal pumps is estimated to have been worth \$25.9 billion in 2017 and \$26.8B in 2018, representing a growth rate of 3.6% year-on-year. With a strong focus on energy efficient pumping systems, IHS Markit forecasts a further growth surge of 4.8% from 2018 to 2019, thanks to increased prices and strong demand from water infrastructure projects in emerging economies and in the United States. Perhaps more important in the pump industry is the pressing need for condition monitoring. Pumps account for about 30% of motor applications, more than 12 million units shipped annually, and yet only about 5% of motors have the ability to connect with sensors and relay performance data. Many end users are gaining interest in the ability to store pump performance metrics on the Cloud, but only about 1% of industrial centrifugal pumps are utilized in this manner, which we call Industrial Internet of Things. IHS Markit would like to congratulate Azima for the release of its recent report on pump performance ratings. This type of work should raise awareness of a very important range of data and further the ever growing trend of IIoT in an important industry such as the pump market."

Azima's 2018 industrial pump report covers pumps produced and sold by the following companies under the following brands:

- Ampco Pittsburgh (*Buffalo Pumps*)
- Bosch Co. (*Hagglunds; Rexroth*)
- Carver Pump Co. (*Carver*)
- CIRCOR (*Imo; Warren Pumps*)
- Eaton (*Vickers*)
- Flowserve (*Durco; Ingersoll Dresser; Worthington*)
- Grundfos (*Grundfos*)
- Howden (*Buffalo Forge*)
- IRON Pump (*IRON Pump*)
- ITT Inc. (*Goulds*)
- Leistritz (*Leistritz*)
- Parker Hannifin (*Denison*)
- Pentair (*Aurora*)
- Roper Technologies (*Roper*)

- SunSource (*EMI*)
- Tetra Laval (*DeLaval*)
- Wartsila (*Hamworthy*)

Azima provides the most comprehensive, trustworthy, and up-to-date machine reliability data available in the world today. Leading global companies use Azima reliability data and algorithms to:

- Evaluate and select specific vendors
- Document vendor due diligence
- Quantify Reliability & Maintenance risk at the machine-, plant- and enterprise-levels
- Triage large numbers of machines
- Identify high-risk machines for closer inspection
- Measure, manage & mitigate Reliability & Maintenance risk over the long-term

Additional information about Azima data solutions is available upon request.

About Azima, Inc.

Azima maximizes industrial productivity on a global scale. When our clients have capacity, they can sell it. They're serious about uptime, and rely on Azima to maximize it.

Azima delivers programs & results, not parts & pieces. We combine the *efficiency* of algorithms, the *accuracy* of data, and the *judgment* of experts. Azima gets results, and we do it at scale.

No one maximizes industrial productivity in more industries and places than Azima. We cover 100,000 assets in dozens of countries, on every inhabited continent. We even handle stuff on the oceans.

Azima is headquartered in Boston, with locations and experts across the Americas, Europe, the Middle East, and Asia. For more information, please visit www.AzimaGlobal.com.

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