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Easytork

**2017 North American Pneumatic Actuators
New Product Innovation Award**

FROST & SULLIVAN

BEST
2017 **PRACTICES**
AWARD

**NORTH AMERICAN PNEUMATIC ACTUATORS
NEW PRODUCT INNOVATION AWARD**

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Background and Company Performance

Industry Challenges

Fail-safe actuators play an important role in bringing the valve to a pre-fixed position in the case of a power failure, to ensure plant process safety parameters have no deviations that might cause loss of life and/or property. With a spring return pneumatic actuator, the fail-safe condition is achieved with the help of a mechanical spring. The drawback of a spring return actuator is it needs to be sized in such a way that the actuation force must overcome the spring resistance. Additionally, spring actuators face risks caused by spring fatigue, which develops over time.

The atmospheric quality in the installation field impacts the actuator's quality. Single acting spring-type actuators draw in atmospheric air during operation, and atmospheric impurities cause corrosion and alleviate the actuator's quality, leading to increased maintenance frequency. Therefore, end users need to maintain higher levels of spares inventory, which adds to their asset management costs. The challenge lies in designing a fail-safe actuator so that its performance is not affected by atmospheric impurities.

The most common types of rotary pneumatic actuators are vane and rack and pinion. Unlike rack and pinion actuators, vane actuators have only one moving part, and actuation takes place as a result of rotary-to-rotary motion. Hence, the construction of a vane actuator is more rigid and simpler than a rack and pinion actuator, which enhances the reliability and longevity of the actuator. However, with single acting actuation, end users prefer the rack and pinion design over vane because a spring-type vane actuator costs about 3 to 4 times more than a rack and pinion actuator.

The key to unlocking value lies in innovating an economical, reliable, efficient, and safe pneumatic actuator that addresses the challenges posed by the conventional spring-type pneumatic actuator design.

New Product Attributes and Customer Impact

Price/Performance Value

Easytork Automation Corporation's patented quarter turn vane-type pneumatic actuator design eliminates the need for a spring to achieve fail-safe operation by replacing the spring with an air reservoir that is integral to the actuator housing. By removing the spring from the actuator design, the vane actuator is not required to be oversized to overcome the spring resistance.

The EVA design is lighter and smaller than a competitor's rack and pinion or vane actuator design for a similar configuration. A 50 to 60% reduction in weight decreases the complexities in providing the necessary supporting structures and reduces labor and design costs. The additional real estate created by the EVA design as a result of a

reduction in size by 30 to 40% provides relief to end users, such as skid manufacturers, where space availability is crucial. The EVA's operational versatility, flexibility, and efficiency set it apart from other pneumatic actuators available in the market.

Positioning

Valves and actuators have become more of a commodity product, i.e., the market does not have much product differentiation among competitors. The main challenge to the adoption of spring-type vane actuators is the high cost. Easytork's springless design brings vane actuator technology to a price point that is comparable to a single acting rack and pinion actuator. With this, vane actuators can capture the market share of rack and pinion actuators manufactured by the company's competitors, making vane actuators more prevalent in the industry. Easytork's commitment to innovation has enabled it to provide a unique value proposition to its end users by combining the advantages of the vane and rack and pinion actuators in a single EVA design.

With this breakthrough technology, Easytork is uniquely positioned to offer a vane actuator at a cost comparable to that of a rack and pinion actuator, which poses a serious challenge to both the rack and pinion and vane fail-safe actuator segments. Rack and pinion actuator vendors cannot match the performance of Easytork's EVA, while vane actuator vendors will find it difficult to match its price.

Match to Needs

The quality of air required to perform the actuation function plays a crucial role in determining the actuator maintenance costs. High levels of moisture in the air can cause the actuator components to rust. Actuators installed in unclean environments in process plants or mines are at high risk. With EVAs, the air path is internal, eliminating the demand for infrastructure such as dryers and filters required to maintain the air quality. With this, the life of the actuator increases, when compared to traditional spring-type pneumatic actuators, and downtime and operational costs are reduced by minimizing the frequency of spare parts or actuator replacement. The cost benefits offered by Easytork's EVA results in a win-win for all stakeholders involved in the project.

Customer Purchase Experience

The primary challenge faced by any new product released in the market is the end user's apprehension to change the status quo, irrespective of product quality, which is true for Easytork's EVA as well. The company's strategy to focus its sales through the distributor channel to overcome this challenge helps it showcase the end results to end users in terms of reducing the cost and improving flexibility and reliability, when compared to conventional spring return actuators.

Additionally, Easytork ensures end users have sufficient local support from distributors in case of any difficulties with the product. For this reason, Easytork selects distributors only after they perform due diligence and consideration on multiple levels within their organizations. Easytork maintains a strong distributor network that supports end users in installation and in after-sales support activities, which instills confidence in end users to overcome their apprehension to try the new product.

Design

Easytork's patented actuator design employs high-pressure air on both sides of the actuator vane, which helps in precise throttling control. Because the EVA consumes less air, compared to competitors' actuators, it has faster stroking speeds and helps attain the desired position of the valve faster than conventional spring-type rack and pinion or vane-type actuator designs.

Stem leakage is a major concern for end users as it results in loss of process fluids and causes emissions into the atmosphere. Easytork's economical EVA design facilitates 100% concentric stem engagement, along with direct mounting, without the need for brackets and couplers. This design minimizes the loading on the stem and minimizes the possibility of stem leakage. Additionally, the integral vane-shaft construction is free from hysteresis, which is not possible to achieve with actuators offered by competitors.

Customer Ownership Experience

Easytork's vane actuator (EVA) is smaller and lighter than competing actuators for the same torque levels. Compared to spring return actuators supplied by its competitors, the EVA consumes 30% less air for the actuation requirements. Reduction in air consumption simplifies the air supply infrastructure and the additional maintenance costs associated with it; therefore, EVAs reduce the initial capital investment and minimize the total cost of ownership.

The EVA can be easily configured to convert from fail safe to double acting and vice versa by adjusting the solenoid valves. With competing spring return actuators, different packages are required to carry out the double-acting and fail-safe functions.

With the current low investment climate, the primary concern of end users lies in reducing operating costs and increasing asset availability, flexibility, and reliability. Hence, end users will gravitate toward the EVA because of the product's flexibility and reliability to keep the plant running cost effectively.

Conclusion

In the valves and actuators industry, where products have increasingly become commoditized, Easytork's commitment to innovation has enabled it to distinguish itself from the competition. The EVA is a breakthrough product in the pneumatic actuators market as it provides increasing flexibility and reliability and reduces the total cost of ownership by reducing product cost and operational expenses. The EVA combines the benefits of the rack and pinion and vane actuators and stands ahead of other pneumatic actuators available in the market. Easytork's focus on developing a strong distributor network helps it penetrate the market and increase product adoption. The EVA's unique value proposition is set to disrupt the pneumatic fail-safe actuators market and yield higher gross margins for Easytork.

With its strong overall performance, Easytork Automation Corporation has earned Frost & Sullivan's 2017 New Product Innovation Award.

Significance of New Product Innovation

Ultimately, growth in any organization depends upon continually introducing new products to the market and successfully commercializing those products. For these dual goals to occur, a company must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding New Product Innovation

Innovation is about finding a productive outlet for creativity—for consistently translating ideas into high-quality products that have a profound impact on the customer.

Key Benchmarking Criteria

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated two key factors—New Product Attributes and Customer Impact—according to the criteria identified below.

New Product Attributes

- Criterion 1: Match to Needs
- Criterion 2: Reliability
- Criterion 3: Quality
- Criterion 4: Positioning
- Criterion 5: Design

Customer Impact

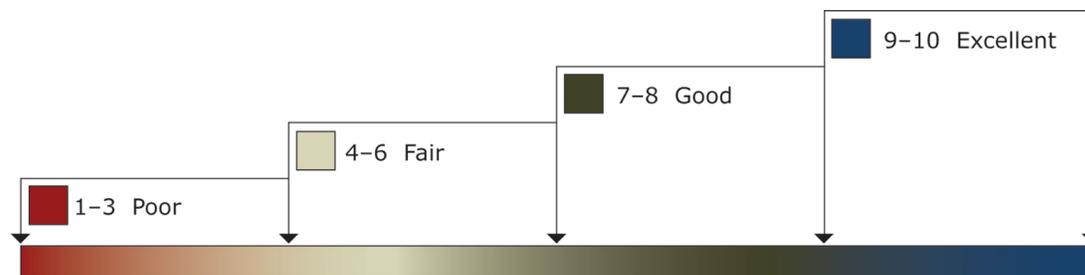
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for Easytork Automation Corporation

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by New Product Attributes and Customer Impact (i.e., These are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard.). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key participants as Competitor 2 and Competitor 3.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
New Product Innovation	New Product Attributes	Customer Impact	Average Rating
Easytork Automation Corporation	9	9	9
Competitor 2	8	7.5	8
Competitor 3	7.5	7	7.25

New Product Attributes

Criterion 1: Match to Needs

Requirement: Customer needs directly influence and inspire the product's design and positioning.

Criterion 2: Reliability

Requirement: The product consistently meets or exceeds customer expectations for consistent performance during its entire life cycle.

Criterion 3: Quality

Requirement: Product offers best-in-class quality, with a full complement of features and functionalities.

Criterion 4: Positioning

Requirement: The product serves a unique, unmet need that competitors cannot easily replicate.

Criterion 5: Design

Requirement: The product features an innovative design, enhancing both visual appeal and ease of use.

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

Criterion 2: Customer Purchase Experience

Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints.

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company's product or service and have a positive experience throughout the life of the product or service.

Criterion 4: Customer Service Experience

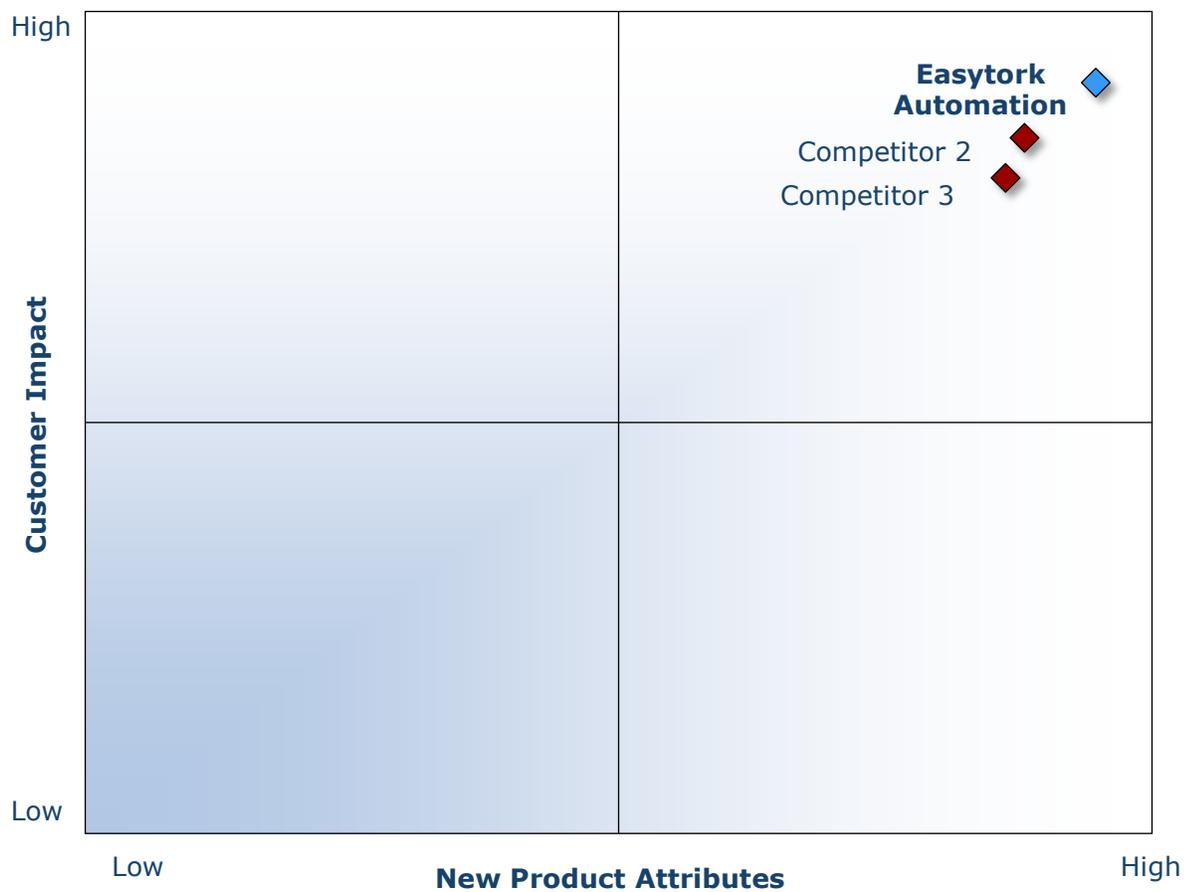
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning of all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized Award candidates
6 Conduct global industry review	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible Award candidates, representing success stories worldwide
7 Perform quality check	Develop official Award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best-practice Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select recipient 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • Present Award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of Award and plan for how recipient can use the Award to enhance the brand
10 Take strategic action	Upon licensing, company is able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning 	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.