

Making Our World A Better Place

2018 Corporate Social Responsibility Report



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Barnes Group Overview

Who We Are

Barnes Group Inc. (BGI or the Company) is a global provider of highly engineered products, differentiated industrial technologies, and innovative solutions, serving a wide range of end markets and customers. Headquartered in Bristol, CT and founded in 1857, Barnes Group's specialized products and services are used in far-reaching applications including aerospace, transportation, manufacturing, automation, healthcare, and packaging. The Company's skilled and dedicated employees around the globe are committed to the highest performance standards and achieving consistent, sustainable profitable growth.

Segment Overview

We operate under two global business segments: Industrial and Aerospace.

Industrial

The Industrial segment is a global provider of highly-engineered, high-quality precision components, products and systems for critical applications serving a diverse customer base in end-markets such as transportation, industrial equipment, automation, personal care, packaging, electronics, and medical devices. Focused on innovative custom solutions, Industrial participates in the design phase of components and assemblies whereby customers receive the benefits of application and systems engineering, new product development, testing and evaluation, and the manufacturing of final products. Products are sold primarily through its direct sales force and global distribution channels. Industrial's Molding Solutions business designs and manufactures customized hot runner systems, advanced mold cavity sensors and process control systems, and precision high cavitation mold assemblies - collectively, the enabling technologies for many complex plastic injection molding applications. Industrial's Force & Motion Control business provides innovative cost effective engineered solutions for a wide range of metal forming and other industrial markets. The Automation business designs and develops robotic grippers, advanced end-of-arm tooling systems, sensors and other automation components for intelligent robotic handling solutions and industrial automation applications. Industrial's Engineered Components business manufactures and supplies precision mechanical products used in transportation and industrial applications, including mechanical springs, high-precision punched and fine-blanked components and retention rings.

Aerospace

Aerospace is a global manufacturer of complex fabricated and precision-machined components and assemblies for original equipment manufacturers (OEM) of turbine engines, airframes and industrial gas turbines, and the military. The Aerospace aftermarket business provides aircraft engine component maintenance, repair and overhaul (MRO) services, including services performed under our Component Repair Programs (CRPs), for many of the world's major turbine engine manufacturers, commercial airlines and the military. Aftermarket activities also include the manufacture and delivery of critical jet engine spare parts under our revenue sharing programs (RSPs).



Corporate Social Responsibility at Barnes Group

Barnes Group is committed to corporate responsibility and furthering environmental, social and governance (ESG) principles. We believe this allows us to create value for our stakeholders and is key to our success as a responsible and environmentally friendly organization. Since the launch of Barnes Group's formal company-wide Corporate Social Responsibility (CSR - our term for ESG) initiative in 2014, we continue to identify and implement ways we can benefit the environment and society while we execute our vision and strategy within our businesses. This initiative is led by our Director of Health, Safety & Environmental Affairs (HSE), with the full support of our company's Senior Leadership and the Board of Directors.

This report provides an update on our 2018 CSR performance and the goals we have set as we drive improvements in environmental sustainability, diversity and inclusion, and social and charitable impact in the communities where we operate.

Ethics, Culture and Values

"It's not just what we do, it's how we do it." At the heart of this statement, often cited by Barnes leaders and employees, are the Barnes Corporate Values which are the cornerstone of the Company and the bedrock upon which Barnes has been built and sustained for over 160 years.

Consistent with these Corporate Values, we strive to conduct business with the highest ethical standards, always mindful that our values define who we are and what we stand for, both as employees and as a company. At Barnes Group, we believe in:

Integrity – We maintain the highest ethical standards, honoring our commitments and being open and honest in all that we do.

Empowerment – We recognize that our people are the source of our success. We enable everyone to make a positive personal impact while being accountable for their behaviors and the results they deliver to our communities, customers, and stockholders.

Emotional Intelligence – We identify with our own emotions and styles of learning along with those of others. We motivate others and ourselves to achieve results while also managing our relationships with understanding and reason.

Collaboration – We build diverse and inclusive teams that leverage our collective experience and expertise to find differentiated solutions for our customers.

Competitiveness – We drive relentlessly to compete on the merits of our products and services, offering highly engineered products, differentiated industrial technologies and innovative solutions.

Continuous Improvement – We create a culture that embraces change and innovation, improves processes, eliminates waste and builds on an unwavering commitment to quality.

Workplace Fairness – We provide opportunity in a culture that promotes dignity and respect for our employees in a safe and mutually rewarding environment.

Globalization – We embrace the expansion of our business around the world as an opportunity, and value diversity and inclusion as we work seamlessly across borders. We partner with employees, vendors and customers of different cultures while respecting and contributing to the communities where we work and live.



Compliance and Accountability

Consistent with the Barnes Corporate Values, the Barnes Group Code of Business Ethics and Conduct (“Code of Conduct”) lays out the principles that guide the behavior of our employees, officers and directors as we do business around the world. Our Code of Conduct, which is available in multiple languages for our global constituencies, provides guidelines, practical direction and helpful resources to promote ethical conduct and support compliance with applicable laws and regulations.

All employees are expected to complete annual Code of Conduct training, at which time they re-affirm adherence to the Code of Conduct. All newly-acquired companies are integrated into our compliance and training program as well. Our businesses complete an annual certification process that enables us to monitor compliance with anti-corruption policies. Certain employees are assigned, based on factors such as role and geographic location, more targeted ethics and compliance training on topics such as anti-corruption and trade compliance. Barnes Group continues to enhance its employee training program based on role and risk exposure.

Barnes Group encourages employees to raise questions and concerns. We offer multiple channels for doing so, accessible at local work sites and the corporate office. Anonymous reporting tools, both online and via telephone, are available. We periodically survey our officers and business leaders on key compliance areas and provide opportunities for them to notify us of concerns or conflicts of interest.

Barnes Group takes every question and concern seriously and will not tolerate any form of retaliation against any person for raising a question or concern in good faith. Employee concerns are addressed through fair examination, objective determination of the facts, and appropriate corrective action measures, if necessary. We also expect all of our business partners, suppliers and agents to hold themselves to equally high standards.

In 2018, further building upon its Corporate Values, Barnes launched a Code of Business Ethics and Conduct for Suppliers (“Supplier Code”). The Supplier Code, published on the Barnes corporate website, communicates the expectations we have for our suppliers and partners, setting forth the “how we do it and what we expect” when it comes to selecting the supplier partnerships we build around the world. The Supplier Code makes it clear that all suppliers and partners must adhere to the Barnes Code of Conduct, and that Barnes’ suppliers and partners must ensure the safety, security and fundamental human rights of their employees while taking steps to safeguard the environment, all of which are consistent with our core Corporate Values.

Governance

Barnes Group is a publicly held company that trades on the New York Stock Exchange under the ticker symbol “B”. The Board of Directors is our highest governing body, and is actively engaged in risk management oversight, succession planning, and corporate governance matters. We have a standing Audit Committee, Compensation and Management Development Committee, and Corporate Governance Committee. Our Board is comprised of twelve directors, ten of whom are independent.

Barnes Group maintains a comprehensive set of policies and procedures to enable effective corporate governance. The following documents are available in the Investor Relations section of our corporate website at www.BGInc.com:

- Audit Committee Charter
- California Transparency in Supply Chains Act Disclosure
- Code of Business Ethics and Conduct
- Code of Business Ethics and Conduct for Suppliers
- Compensation and Management Development Committee Charter
- Conflict Minerals Policy
- Corporate Governance Committee Charter
- Corporate Governance Guidelines
- Policy Regarding Reporting of Complaints and Concerns
- UK Tax Disclosure



Health, Safety, and Environmental Affairs (HSE)

Barnes Group strives to ensure that all aspects of our operations are conducted in conformance with applicable laws and regulations, as well as with all of our corporate policies pertaining to workplace safety and protection of the environment.

In certain cases, the Company or its strategic business units (SBUs) may establish more stringent requirements as policies, procedures or directives. At the corporate level, these requirements are documented as BGI HSE Standards.

The BGI HSE Standards are consistent with our commitment to worker health and safety and to environmental protection, as well as prevailing regulatory frameworks in place around the globe. All locations are required to meet local laws and regulations, or the BGI HSE Standards, whichever are more stringent. Furthermore, our internal corporate audit program measures and monitors progress using standard protocols, ensuring that actions are tracked to closure, and results are reported to Senior Leadership.

Our past and present business operations require the use and handling of chemicals and hazardous products that are subject to extensive environmental laws and regulations pertaining to the discharge of materials into the environment, the disposal of wastes, and the use, shipping, labeling, and storage of chemicals and hazardous materials. We closely monitor hazardous waste management and applicable environmental permitting and reporting requirements to ensure compliance with applicable laws while striving to minimize the environmental impact of our operations through our management systems approach to HSE.

Compliance

We focus our time and resources on identifying and controlling hazards in the workplace to ensure compliance and our employees' safe return to their homes and families at the end of their work day. Across the globe in 2018, Barnes Group had four HSE non-conformances for which penalties were paid. These deficiencies were related to inadequate guarding of a fourslide machine which resulted in injury, an inoperable pH data logger required by an air emissions permit, improper waste characterization and the presence of mosquito breeding. Two of the deficiencies had been self-identified through our internal processes, and all were corrected in a timely fashion to the satisfaction of the governing agencies. The lessons learned were shared across the organization as appropriate. Our goal continues to be to eliminate HSE non-compliance.

Safety

Barnes Group is committed to promoting and maintaining a safe workplace for our employees. Through initiatives such as the Critical Risk Mitigation Program, behavior-based safety, and other injury prevention activities, Barnes Group aims to continue eliminating or reducing hazards in the work place and preventing injuries. Since 2014, our operations have steadily reduced recordable and lost time injuries. In 2018, our President and CEO as well as our Segment Presidents continued to emphasize a "Safety First" tone from the top and we achieved a 35% reduction in lost time injuries and a 16% reduction in recordable injuries versus the prior year. We remain committed to the execution and implementation of our BGI HSE standards and critical risk mitigation program. We are confident in our HSE Management systems strategy, and continue to empower and encourage employees to proactively identify and mitigate potential safety issues through Safety Committees, HSE Audits and Inspections, Gemba Walks and our Near Miss program.



Reducing Injuries

In 2018, more than half of our manufacturing facilities worked the entire year without a lost time injury.

Waste

At Barnes, our operations track and report waste generation data using a common online system according to the framework established in our corporate environmental standards. Centralized reporting of both non-recycled and recycled industrial process wastes began in 2014 and enables us to identify pollution prevention and waste minimization opportunities, as well as to drive towards recycling a greater percentage of our industrial waste streams. Using this system, we've been able to track progress across the Company. For example, our Barnes Industrial FOBOHA division in Suzhou, China is in the fourth year of its recycling program for plastic components collected at a particular stage in the validation process. The plastic collected through this process is sold to a waste material reclamation company to be shattered into particles and used in the production of other goods. In many cases, the plastic pellets created through the reclamation process may be used as feed stock for plastics manufacturers. In 2018, the FOBOHA Suzhou division recycled 5,731 kg of plastic through this program.

The Barnes Aerospace, East Granby, Connecticut division drove waste reduction during the repair of its 6,300 square feet parking lot in 2018. The existing asphalt was ground down and taken to an asphalt plant to be introduced as filler for a “new” mixture composed of 30-60% recycled materials. This allowed more than 50 tons of asphalt to be reclaimed, reducing our generation of waste and the use of new petroleum resources.

Barnes Industrial FOBOHA in Suzhou, China introduced Minimum Quantity Lubrication (MQL) technology in August 2018. Unlike conventional cutting fluid, the MQL technology uses only the smallest amount of lubricant in production. The change has allowed the Suzhou plant to eliminate 40 liters of waste cutting fluid each month.



ISO 14001

Consistent with our efforts to minimize the environmental impacts of our operations, 12 of our Company's facilities' environmental management systems have been registered under ISO 14001.

Reducing Waste from Single-Use Items

The Barnes Aerospace, West Chester, Ohio division recently installed four drinking fountains with water bottle fillers to encourage the use of refillable bottles. To date, these systems have eliminated thousands of disposable bottles from consumption.

Barnes Industrial Männer Group in Bahlingen, Germany is also reducing single-use waste. This year, the division provided a free, reusable cup to all employees, which will help to eliminate thousands of paper cups each year.



Recycling

Recycling continues to be an important component of our strategy to reduce our environmental footprint through reclamation of materials.

The Barnes Aerospace, West Chester, Ohio division has continued its recycling program. The division recycles all aluminum and plastic cans and bottles, scrap metal, and cardboard. Approximately 260 cubic-yard bales of cardboard are recycled annually, preserving roughly 225 trees. All wooden pallets are also recycled and turned into mulch.

The Associated Spring Raymond Maumee, Ohio division introduced a cardboard compactor in 2016 that eliminates the need to send cardboard to a landfill. The cardboard is recycled and the division receives rebates for the amount of cardboard recycled. In 2017-8, the division successfully recycled 33 tons of cardboard which would have otherwise been destined for a landfill.

Molding Solutions' Synventive facility in Peabody, MA implemented a recycling program in March 2016 to sort recyclables such as paper, glass, plastic, and cardboard. With the program in effect for more than two years now, the team reduced the amount of non-recycled waste destined for landfill by more than 18 tons.

Water

Barnes Group operations have been tracking water usage data for five years now, and we are pleased to report that our divisions successfully implemented or expanded their water conservation projects in 2018 to reduce water consumption. Some of the water conservation initiatives implemented include:

The Barnes Aerospace Ogden, Utah division implemented several upgrades to its hot form press area. The upgrades improved the operational efficiency of the equipment, resulting in a 70% reduction in oily wastes generated from the process and a projected water savings of approximately 14,000 gallons per year. The upgrades have also resulted in an annual cost savings of over \$25,000.

Our Engineered Components' Associated Spring Asia facility in Singapore replaced 48 conventional water taps with new low-flow, high-pressure taps certified as water efficient by the Singapore government. These new taps have a flow rate of just 8 liters per minute, compared to 14 liters per minute for the old ones. The switch is estimated to save up to 78,000 liters of water each year.

Our Associated Spring Mexico City division started collecting and using rain water for service activities such as cleaning the factory and floors in 2016. This effort expanded in 2017 with additional treatments and uses, and the program continued through 2018. Since launching the program, the savings versus traditional use of municipal water at the facility has totaled over 1,970,000 liters.

Our Engineered Components' Associated Spring facility in Corry, Pennsylvania installed new air compressors for the main plant air supply. Unlike the old compressors, these new units do not require contact cooling water. Once fully implemented, the new compressors are expected to produce consistent water use reductions of up to 2,600 gallons per month.

Zero Process Water Discharge at Strömsholmen

For a number of years, our Force & Motion Control division at Strömsholmen, Sweden has been improving its filtering equipment to remove heavy metals from process waste water, investing in a series of systems improvements and equipment over time, including a new evaporator in 2017. This has enabled the division to heat process waste water and separate it into purified distilled water and a concentrated waste fluid. The purified water is recycled back into the production process reducing the need for new incoming water, while the concentrated waste fluid is collected and processed at a local waste recycling plant. Strömsholmen now emits zero process water to the municipality's waste water system.

Since the evaporator was installed in March of 2018, it has produced about 72,800 liters of distilled water each month to be reused in production. This represents a reclamation of 95.4% of the volume of process waste water generated. By recycling this water, Strömsholmen has been able to reduce its overall water usage by roughly 20%.

Energy

At Barnes Group, we began requiring our operations to track and report energy usage five years ago, and we are pleased to report that our divisions continued to successfully implement additional energy conservation projects in 2018 to reduce consumption. Several facilities implemented or expanded their use of energy-efficient LED lighting and motion-sensors, while other divisions completed facility-specific energy conservation projects.

Some highlights are as follows:

As part of our energy conservation efforts, many of our facilities partner with local utilities or contractors to perform energy audits or inspections. These assessments are designed to identify energy conservation opportunities and frequently target compressed air systems in manufacturing facilities. The Barnes Aerospace Phoenix, Arizona and West Chester, Ohio divisions were no exception. In 2018, the Phoenix division upgraded its compressed air lines, which reduced energy consumption by an estimated 35,000 kWh in the first 8 months following the project. Cost savings for the project are projected at \$3,000. The West Chester division also targeted compressed air system upgrades in 2018, with the improvements reducing their energy consumption by an estimated 4,000 kWh per month. The West Chester division also coated the plant's roof with an insulating and reflective solar coating. The coating gives the roof a Solar Reflectance Index of 107, which decreases the temperature in the plant during summer months and the corresponding need for cooling. The division received a \$23,000 rebate from the State of Ohio for applying the coating.

Barnes Industrial Männer Group in Bahlingen, Germany replaced one of the division's chillers with a condenser. While the chillers use water and refrigerant for cooling, the condenser uses the outside air temperature. The division has implemented a process whereby they alternate using the remaining two chillers and the one condenser once the temperature falls below ten degrees Celsius. This practice results in energy savings of approximately 35,240 kWh each year.

Engineered Components' Associated Spring Bristol division replaced its cooling tower in 2018 with a unit equipped with upgraded, modern control technology. The new system communicates with the overall building energy management system, which allows the 120 horse power motor driving the chiller to remain off when the outside temperature remains below 55 degrees F. The division thus realizes a reduction in energy consumption due to the motor not needing to run during colder months, whereas the old motor ran throughout the year whenever the system demanded it. In addition, the advanced communication between the cooling tower and building energy management system enables the division to see actual performance and trends via computer readout. The new cooling tower is reducing energy consumption and the division's annual energy costs.

Insufficient ventilation in the compressor room at Barnes Aerospace, Ogden, Utah was causing the compressor to overheat, reducing its efficiency and reliability. Until recently, the division compensated by placing floor fans in the compressor room and leaving the door to the room open, which significantly raised noise levels on the adjacent manufacturing floor. To solve this problem, the Ogden team rotated the compressor 180 degrees and vented its exhaust outside. This change lowered the temperature in the room, resulting in greater compressor efficiency and reliability, and eliminated the need for additional cooling measures. Overall, the modification allowed the Ogden division to reduce energy use. As an added bonus, the noise level on the manufacturing floor also fell by approximately 10 dB with the closing of the compressor room door.

Energy and Hazard Reduction at Seeger-Orbis

For the past three years, the Engineered Components' Seeger-Orbis division in Königstein, Germany has been working to reduce its on-site salt storage with the goal of being removed from the special hazards monitoring program by 2020. As a part of this project, the division shut down one of its furnaces and pumped out its salt bath. In addition to reducing on-site environmental hazards, the changes lowered the division's energy usage. From 2016 to 2017, total energy used by the furnaces decreased by 193,362 kWh. Reductions have continued into 2018, with total energy consumption for the first ten months of the year down 262,289 kWh from 2017. These combined energy savings have had a cost benefit of more than \$75,000.

Energy Conservation through LEDs

Our Engineered Components' Associated Spring Asia division in Singapore replaced its old high bay lights, which ran at 1,000 watts, with LEDs, which run at just 240 watts. The change is estimated to create a 7,008 kWh energy reduction per light bulb per year and cut the utility bill by 75%, all while maintaining 500 lux on the shop floor. Our Barnes Aerospace, West Chester, Ohio division replaced lights in the front offices and shop floor with LEDs. These replacements reduce annual energy consumption by 336,636 kW. Barnes Industrial's FOBOHA division in Haslach, Germany also replaced some of its lighting with LEDs, reducing energy use by 32,331 kWh and electricity spending by more than \$2,500 each year. The decreased energy usage will reduce the carbon footprint for all three divisions.

Energy Conservation through IT

As Barnes Group updates computer hardware, we are replacing our desktops with mini PCs. These smaller computers offer greater portability and use less power. To maximize our energy reductions from this change, we are selecting models that use power-optimized T Processors in place of their more energy-intensive counterparts. At the same time, our facilities are implementing site-specific solutions to reduce energy usage from computing. For example, Molding Solutions' Synventive North American headquarters in Peabody, Massachusetts has introduced timed computer power ups and shut downs to eliminate night-time energy usage from idle PCs.



Harnessing Solar Energy at Thermoplay

Molding Solutions' Thermoplay division in Point Saint Martin, Italy installed a roof top solar panel system and three inverters in 2011. Under ideal conditions, the 860 solar panels are capable of generating 198 kWp. Since the installation, the average energy produced by the system per year has exceeded 185 kilowatt-hours (kWh), reducing the company's environmental footprint by avoiding carbon dioxide emissions associated with other power generation methods. In addition, the energy produced by the system is used fully by the production operations, saving the business approximately 67.000 € per year. The system has a projected life span of at least 20 years, so the division will continue to reap these environmental and financial benefits through 2031.





Employee Development and Engagement

At Barnes Group, we believe it is never too late to improve your lifestyle and to make the most of your health and well-being. Our wellness programs have been designed with this goal in mind – to provide tools, resources, and support for employees and their family members to adopt healthier lifestyles and create meaningful and lasting change towards their personal well-being. In addition, this helps ensure a stable workforce for the Company. We also support well-being by offering a diverse set of professional training and development programs.

Diversity and Inclusion

At Barnes Group, success begins with having a passionate and energized workforce. Barnes Group employs approximately 5,800 employees around the globe.

U.S. Representation of Ethnic Diversity*	2018
American Indian / Alaskan Native	Less than 1%
Asian	6%
Black / Not Hispanic Origin	7.1%
Hispanic	6.2%
Native Hawaiian or Other Pacific Islander	Less than 1%
Two or More Races	1%
White / Not Hispanic Origin	79.6%

To help us maintain this energized and engaged workforce, Barnes Group strives for diversity across all levels of the organization. Additionally, we look to increase women in hourly, management, and salaried leadership positions. The recruitment process is an important element in achieving a more diverse population throughout our businesses.

U.S. Representation of Women by Classification*	2018
Hourly	14%
Non-Exempt	64%
Professional	31%
Management	21%
Leadership	23%

*Excludes our latest acquisition, IGS.

Manufacturing Day

At Barnes Group, we believe it is important to invest in, foster, and develop the skills and education of our local community workforces. Each October, we participate in Manufacturing Day, an annual event when North American manufacturers open their doors to showcase the potential of modern manufacturing and foster interest in manufacturing careers. This year, attendees received a first-hand look at how products are conceptualized and manufactured via tours that covered engineering, design, quality, and all parts of the manufacturing floors.

Nearly 425 students from surrounding schools joined ten U.S. Barnes Group facilities in early October for the sixth annual Manufacturing Day. Manufacturing Day is an opportunity for manufacturers to show their communities what they do, highlight the economic importance of manufacturing, and draw attention to rewarding manufacturing careers. This year we followed up the day with a communication to 134 schools as outreach for additional opportunities for students to learn about manufacturing as a career as part of our "Manufacturing Your Dreams Campaign."

Apprenticeship Program

In 2018, the company continued its focus on recruiting efforts in support of Global Apprenticeship Programs – attracting, hiring and training apprentices in various technical areas to help build our talent pipeline for the future. Through the development of our Manufacturing Your Dream Campaign, we are promoting our Global Apprenticeship Programs to area schools, universities, colleges, and to the broader generation of future workers. Outreach to local high schools, vocational-technical schools, and colleges provides information on our businesses and manufacturing as a career. Our Apprenticeship programs will help us bolster our manufacturing skills and provide professional development and growth as well as rewarding career opportunities to technically skilled workers.

Barnes' Apprenticeship Program combines on-the-job training, technical education and related classroom or online instruction that increases an apprentice's skill level and earning potential. In the United States, this registered program provides an opportunity for the apprentice to earn a "Completion of Registered Apprenticeship" certificate, which is a nationally recognized credential that validates proficiency in an occupation that values or requires an apprenticeship. Barnes Group's respected and successful Apprenticeship Program provides opportunities for individuals to earn while they learn, and develop in-demand technical knowledge and skills for today's dynamic manufacturing industry.



Wellness

Barnes Group is committed to improving the health and well-being of our employees and their families around the globe. Our innovative health programs support a holistic approach to well-being by providing access to comprehensive tools, information, and guidance designed to improve employee health, productivity, and engagement, making our Company a stronger and healthier place to work.

Highlight | Wellness Notable Achievements

Barnes' wellness program provides a number of ways for employees to assess their current health and wellness, and offers options for employees looking to improve, including: self-directed workshops, health assessments, and team-based wellness challenges. Financial incentives are provided for participation and achieving health outcomes.

2018 demonstrated strong employee engagement and produced positive results in the United States:

- 83% of our facilities hosted an on-site biometric screening event, with 43% of all eligible employees participating, up from 38% in 2017.
- Approximately 14% of our employees completed a health risk assessment to identify potential wellness gaps in their daily lifestyle. In addition, new wellness challenges were rolled out each quarter spanning various wellness topics such as physical activity, mental well-being, sleep health, water consumption, and nutrition!



Biometrics Screening

Beginning January 1, 2018, we made it even easier for employees to participate in biometric screenings by offering the ability to have this screening done at a local lab or at their physician's office, in addition to the on-site events.



Community

At Barnes Group, we believe that being a good corporate citizen begins with being a great community leader, which is why we encourage philanthropy, compassion, and change through our Barnes Group Foundation. Founded in 1945 and funded by Barnes Group, the Barnes Group Foundation is committed to the support of education, the arts, civic and youth activities, and health-related charities in the communities in which the Company operates. Since 2000, the Foundation has supported more than 400 schools, cultural centers and health-related charities, helping to ensure a legacy of community involvement for the future.

Barnes Group Foundation

The Barnes Group Foundation is a private grant-making organization supported by Barnes Group as a vehicle for providing a balanced contribution program to accomplish the Company's objective of good corporate citizenship.

The Foundation's highest priority is organizations and projects in communities where the Company has offices and other facilities. The Foundation also makes a limited number of contributions to organizations with programs that have broad impact on the community and exhibit an innovative and resourceful approach to the solution of difficult local, national, and international problems.

Year	Total
2018	\$1,144,000
2017	\$1,100,000
2016	\$1,100,000
2015	\$1,152,000

Student Scholarship Program

The Barnes Group Foundation has established a scholarship program to assist an employee's child who plans to pursue post-secondary education in college and vocational programs. Renewable scholarships are offered each year for full-time study at any accredited post-secondary institution of the student's choice.

The scholarship is administered by Scholarship Management Service, a department of Citizens' Scholarship Foundation of America, Inc. (CSFA). CSFA is a national nonprofit educational support and student aid service organization that seeks to involve and assist the private sector in expanding educational opportunities and encouraging educational achievement. Awards are granted without regard to race, color, creed, religion, gender, disability, or national origin. We are proud of our programs and from 1976 to 2018, Barnes Group has assisted 940 Students and distributed \$7,904,727.

Year	Total
2018	\$371,500
2017	\$312,350
2016	\$292,800
2015	\$353,600

Matching Gifts Program

Barnes Group provides a 2-to-1 matching gifts program for employee donations made to qualified nonprofit organizations, up to a yearly cumulative maximum of \$4,000 per employee/spouse. Qualifying organizations must be recognized as tax-exempt under Section 501(c)(3) or Section 170(c)(1) of the Internal Revenue Service Code and fit into one or more of the following categories:

- Education
- Cultural and Arts
- Civic and Youth
- Health and Welfare

Year	Total
2018	\$141,700
2017	\$185,362
2016	\$175,769
2015	\$149,915

Volunteer Action Awards

The Foundation believes it is vital to the health of every community that citizens be active in local organizations. Employees who volunteer a minimum of 30 hours to assist a local charitable organization during the year are eligible to apply for a Volunteer Action Award. Volunteer Action Awards are grants of up to \$2,000 presented to the charitable organization at which the employee has donated his/her time.

Year	Total
2018	\$5,000
2017	\$4,000
2016	\$2,000
2015	\$2,500



Charitable Giving Program

Barnes Group also supports charitable giving at our international locations through our 1-to-1 matching program. All locations are eligible for the matching gift given for employee projects that involve the entire location and support a charitable organization or project that has a positive impact on the community.

Business	Total
Associated Spring Mexico	\$3,613
Associated Spring Brazil	\$2,620
Associated Spring Singapore	\$2,114
Barnes Aerospace Singapore	\$15,500

United Way Campaign

Barnes Group has a long and proud tradition of supporting the United Way through local campaigns held annually at each of our United States locations. We have earned our reputation as a great community leader, helping our neighbors in need. Through the Barnes Group Foundation, all donations made to the United Way are matched 1-to-1, increasing our total contribution.

Together, the Company and its employees have contributed over \$4 million to the United Way over the past eight years, assisting the United Way's more than 1,300 member organizations. For the 2017-2018 campaign, employees were encouraged to LIVE UNITED and support their local campaigns. Living United means being a part of the change. It takes everyone in the community working together to create a brighter future.

Year	Total
2018	\$273,474
2017	\$266,243
2016	\$214,122
2015	\$229,531



Barnes Group global employees once again showed their outstanding generosity and commitment to community during the 2017 - 2018 Barnes Group United Way Campaign.

Employees across the U.S. raised \$249,625 for the campaign, for a grand total of nearly \$500,000 with the corporate match! In addition, eligible International businesses also were part of the effort, raising nearly \$24,000 (Singapore, Brazil and Mexico were able to take part).

Additional Local Efforts to Support United Way Supported programs such as Toy Drives

During the 2018 holiday season, Barnes Group-Bristol and Farmington employees participated in United Way's Joy of Sharing Toy Drive. United Way of West Central Connecticut's Annual Joy of Sharing Program has been providing food and toys to needy children, teens, and families in Bristol, Burlington, Plainville, and Plymouth for over seventeen years. This marked the tenth year the Corporate Offices collected new and unwrapped toys to donate to boys and girls ages 3 to 14 years old.

International Charitable Giving Program

Barnes Group also supports charitable giving at our international locations through local efforts. All locations are eligible for the matching gift given for employee projects that involve the entire location and support a charitable organization or project that has a positive impact on the community.

A sampling of some of our international efforts for 2018 included:

Engineered Components' Seeger-Orbis, Germany provided support to a company that planted over 200 fruit trees in Africa since 2017. Additionally, they support the local ["Historical Society Club"](#) with a donation of 500€ yearly as well as supplying local Kindergarten and elementary schools with children's games for Christmas.

Engineered Components' Associated Spring, Singapore supports The Straits Times School Pocket Money Fund by providing monetary funding to children from low-income families to help them through school. The children can use this money for school-related expenses, such as buying a meal during recess, paying for transportation or using it to meet other schooling needs.



Engineered Components' Associated Spring, Brazil has supported many employee drives to support Bento Quirino school and Childcare programs, including supplying the children with food, school supplies, drinking fountains and other items.



Synventive Molding Solutions – Suzhou, China, in 2018, continued to support the "Green Grant Program" organized by WeiYe Community. The division reclaimed all its recyclable scrap paper, which will be reproduced as "Green Pencils" to donate to the Hope Primary Schools in China. Since 2016, Synventive has donated 725.5kg of scrap paper, which produced approximately 210,000 pencils, and those pencils have been delivered to 75 Hope Primary Schools in China.



Molding Solution's FOBOHA, Germany proactively asked their suppliers not to send any gifts to the business for the 2018 Holiday season, and instead to donate to a social project. FOBOHA chose to support the Carl Sandhaas School for children with mental and physical disabilities located in Haslach, Germany. The school furthers educational opportunities for the disabled population and acts as an early intervention and counseling center. Donations helped projects to improve the outdoor recreation area and increase music programming to increase the well-being of students. FOBOHA's suppliers and employees were excited to support this chain of charitable giving and raise money for such a worthy cause.



Disaster Relief

Barnes Group believes we must aid those affected by natural disasters. In 2018, consistent with past relief efforts, the Barnes Group Foundation provided a two-for-one match for contributions to the American Red Cross designated for Indonesia Earthquake Disaster Relief Assistance. Additionally, donations made to this relief effort and submitted to the Matching Gifts Program did not count toward the \$2,000 per employee annual program limit.

Relay for Life

Relay for Life events are overnight community fundraising walks that honor cancer survivors, remember lost loved ones, and support the fight back against one of the globe's biggest health concerns. For 32 years, Relay for Life has provided inspiration and hope for millions of cancer survivors and caregivers. Each year, more than 4 million people in 5,200 communities in the U.S., along with additional communities in 26 other countries, gather to take part in this global movement to raise awareness and funds to fight cancer.

Barnes Group employees from our Bristol and Farmington, CT facilities worked to raise money for the American Cancer Society through the Bristol Relay for Life. The team raised money by organizing fundraisers such as "Happy Hour of Hope," "The Great Chocolate Relay," and "A Night at the Museum" in partnership with local businesses. They also solicited donations and held raffles to raise over \$25,000, earning Barnes Group the Top Fundraising Team honors for the 6th consecutive year!

Connecticut operations are not alone in the endeavor, the Synventive Hotrunners Relay team of Peabody, MA showed their creativity, hosting fundraising lunches with themes such as St. Patrick's Day, Red Sox Opening Day, and Cinco de Mayo. They also organized a Human Foosball Tournament as a fun and competitive fundraiser, crowning one team champion at the end of the day. These events helped the Hotrunners raise over \$6,500 for the Relay for Life of Peabody. In addition, the team constructed a Wall of Support and Memory which displayed stars dedicated to employees' loved ones and friends who have struggled with cancer.

To round out the successful campaigns, the American Cancer Society presented the Barnes Bristol Relay team with the "Strike Out Cancer" Most Valuable Team Award at the June 9th Opening Ceremony. Over the past five years, our Barnes Relay team members and employees in CT and MA have raised over \$101,700 for the Bristol and Peabody Relays and the American Cancer Society!





Products

At Barnes Group, we made considerable progress in 2018 on our transformational journey to position the Company as a leading global provider of engineered products and diversified industrial technologies. Ongoing key strategic investments in the Barnes Enterprise System, Innovation, and Talent Management were instrumental in enabling us to achieve our goals. By continuously leveraging the Barnes Enterprise System to “Power Performance Excellence,” our Company is excelling at selling, delivering, and realizing the value we bring to the marketplace. Part of that value proposition involves our ability to consistently deliver high-quality products to our customers.

In the last year, many of the products we delivered and the processes we used to manufacture these products embodied socially and environmentally responsible concepts and methods.

Barnes Industrial

Molding Solutions:

Our Molding Solutions strategic business unit develops plastic injection molding technology used to produce cutting-edge structural and cosmetic components that reduce vehicle mass, improve aerodynamics, and improve fuel efficiency which directly reduces vehicle emissions.

In the FOBOHA division, we engineer, develop, manufacture and produce high-quality injection molds for the plastics industry, and have garnered international recognition for our proprietary and patented multi-component cube mold technology. With the use of its advanced cube mold technology, FOBOHA products not only enable significant reduction in cycle time, but also streamline the manufacture of mass-produced parts, in some cases reducing customer production cycle time by more than 25%, generating double-digit increases in overall production.

The use of cube-mold technology represents a significant leap forward in injection molding processes which, in turn, yields substantial reductions in our customers energy consumption while directly improving the manufacturability of products made with plastic injection molding in the consumer, healthcare, packaging and automotive industries around the world.

Force & Motion Control:

Our Force & Motion Control strategic business unit develops advanced metal and metal-alloy forming technology that allows vehicle designers and manufacturers to introduce highly complex shapes and structures, ultimately reducing vehicle weight and optimizing the use of materials.

The business recently executed yet another application of its innovative Kaller Flex Cam®, a self-contained gas hydraulic system that allows for flexible transfer of force and motion from one place to another in a stamping die and the 360° positioning of die cutting tools on a production line. This product has greatly enhanced production rates and efficiencies for our customers, including for our OEM customers engaged in the manufacturing of electric vehicles. To keep pace with market demand for electric vehicles, several of our OEM vehicle manufacturing customers are developing and producing electric vehicles and hybrids alongside standard combustion engine vehicle models. The KALLER Flex Cam assists OEM customers with this dual production by allowing them to use a single die to stamp out both traditional fenders and fenders equipped with electric charging ports. This duality assists our customers by reducing die tooling costs, reducing die switchover time, and increasing overall electric vehicle production rates and efficiency. We are proud of the way that KALLER Flex Cam will contribute to the burgeoning electric vehicle market which continues to grow at a rapid rate worldwide.

Engineered Components:

Our Engineered Components strategic business unit offers unconventional vehicle components using advanced alloys and manufacturing principles, delivering leading engine and powertrain components to improve fuel efficiency and lead the way to vehicle electrification.

In the Seeger-Orbis division, we proudly manufacture a wide range of standardized and customized retaining rings and snap rings for a broad set of wind power industry applications. Seeger's cutting-edge design simulation software and manufacturing technology enables us to bring these products to market and builds on over 100 years of industry leading-technology and product development. In particular, Seeger-Orbis' popular Tempest™ Retaining Ring Series, manufactured in Germany, and new 3,000 mm ring deliver the highly-engineered performance and precision required by this green industry. These Seeger products are leading the way in wind power generation and are currently used in a majority of gear boxes and auxiliary power train units of gear-driven and gearless wind power stations, with product offerings used by our customers in their most critical and cost-sensitive areas including main gear boxes, yaw and pitch systems, generators, main shafts, brake systems and main bearing units.

Barnes Aerospace

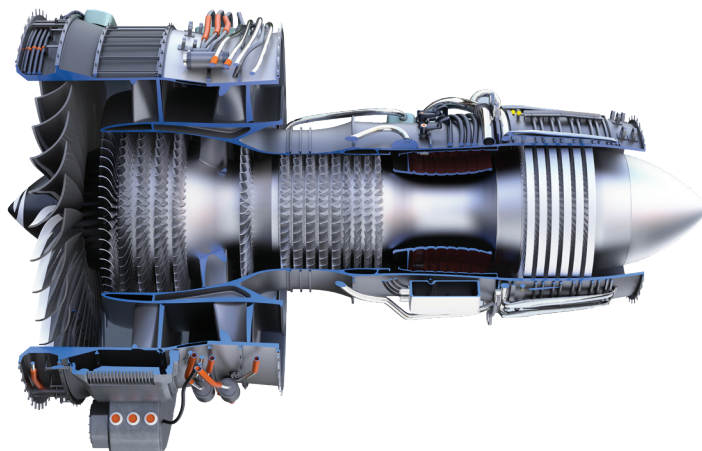
OEM:

In our Barnes Aerospace Lansing, Michigan division, we are commercializing an innovative “hybrid” manufacturing process which combines our traditional fabrication techniques with innovative additive manufacturing technology to provide our customers with products manufactured with lower material waste and lower energy usage. In one example, involving a commercial aerospace engine part, we have enhanced a traditional manufacturing process that would have, in the past, required significant machining of a part from a large forging, which in turn yielded, substantial air particulate and scrap, only some of which was recyclable. Under our new hybrid process, utilizing additive manufacturing, we are seeing highly streamlined results, yielding a reduction in waste by over 1,000 pounds, in turn yielding less scrap and less air particulate. Over the life of this program, we estimate that this “hybrid” manufacturing process will lower waste material by over 19 million pounds compared to the traditional manufacturing process.

In addition, several of our other Barnes Aerospace divisions are actively working concurrently with our aerospace customers to introduce new component designs that will reduce the weight of the aircraft and engine parts. For airlines, reducing the weight of the aircraft or its engines, through lower-weight parts and components drives lower fuel usage and lower carbon emissions. In one example, our Ogden, UT division participated in a collaborative engineering effort to redesign an airframe fairing assembly to reduce the weight of the component without sacrificing strength, durability or safety. The new design will reduce part weight which will, in turn, contribute to a reduction in fuel usage for this type of airplane each year. We are proud that our employees continuously support our customers to reduce aircraft weight, in turn helping the industry lower fuel usage and reduce emissions.

MRO:

Within the Barnes Aerospace Aftermarket business, our divisions are focused on component repair work and collaborate closely with our engine OEM and airline customers to develop new and innovate repair methods for the various engine components that become worn as the airplane is flown. In many cases, our highly-trained MRO repair engineering teams have helped to develop approaches to repair components back to the original new component conditions instead of scrapping the worn part and replacing with a brand new part. In a recent example, our East Granby division developed a new repair for a large commercial jet engine turbine case for one of our engine OEM customers. Without such a repair, our customer would have previously been required to scrap the 500-pound engine case and purchase a new part. Our new repairs reduce the waste and conserve the usage of exotic alloy metals.





Sustainability Contact:

For further questions or concerns
related to Barnes Group's
sustainability work, please contact:

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