

CHART INDUSTRIES INC  
Form 10-K  
February 26, 2016

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934  
For the fiscal year ended December 31, 2015

OR  
 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT  
OF 1934  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_  
Commission File No. 1-11442

CHART INDUSTRIES, INC.  
(Exact Name of Registrant as Specified in its Charter)  
Delaware 34-1712937  
(State or Other Jurisdiction of (IRS Employer  
Incorporation or Organization) Identification No.)  
One Infinity Corporate Centre Drive, 44125-5370  
Suite 300, Garfield Heights, Ohio (Zip Code)  
(Address of Principal Executive Offices)  
Registrant's telephone number, including area code:  
(440) 753-1490

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value \$0.01	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act:  
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes  No

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

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Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company) Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No

The aggregate market value of the voting common equity held by non-affiliates computed by reference to the price of \$35.75 per share at which the common equity was last sold, as of the last business day of the registrant's most recently completed second fiscal quarter, was \$1,077,214,388.

As of February 18, 2016, there were 30,587,837 outstanding shares of the Company's common stock, par value \$0.01 per share.

Documents Incorporated by Reference

Portions of the following document are incorporated by reference into Part III of this Annual Report on Form 10-K: the definitive Proxy Statement to be used in connection with the Registrant's Annual Meeting of Stockholders to be held on May 26, 2016 (the "2016 Proxy Statement").

Except as otherwise stated, the information contained in this Annual Report on Form 10-K is as of December 31, 2015.

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## PART I

### Item 1. Business

#### THE COMPANY

##### Overview

Chart Industries, Inc., a Delaware corporation incorporated in 1992 (the “Company,” “Chart” or “we” as used herein refers to Chart Industries, Inc. and our consolidated subsidiaries, unless the context indicates otherwise), is a leading diversified global manufacturer of highly engineered equipment for the industrial gas, energy, and biomedical industries. The largest portion of end-use applications for our products is energy-related, accounting for approximately 42% of sales and 34% of orders in 2015, and 58% of backlog at December 31, 2015. Our equipment and engineered systems are primarily used for low-temperature and cryogenic applications utilizing our expertise in cryogenic systems and equipment, which operate at low temperatures sometimes approaching absolute zero (0 kelvin; -273° Centigrade; -459° Fahrenheit). Our products include vacuum insulated containment vessels, heat exchangers, cold boxes, other cryogenic components and equipment for respiratory therapy.

Our primary customers are large, multinational producers and distributors of hydrocarbon and industrial gases and their end-users. We sell our products and services to more than 2,000 customers worldwide. We have developed long-standing relationships with leading companies in the gas production, gas distribution, gas processing, liquefied natural gas or LNG, chemical and industrial gas industries, including Air Products, Praxair, Airgas, Air Liquide, The Linde Group or Linde, Bechtel Corporation, ExxonMobil, British Petroleum or BP, ConocoPhillips, PetroChina, The Shaw Group, Toyo, JGC, Samsung, UOP, and Shell, some of whom have been purchasing our products for over 20 years.

We have attained this position by capitalizing on our technical expertise and know-how, broad product offering, reputation for quality, low-cost global manufacturing footprint, and by focusing on attractive, growing markets. We have an established sales and customer support presence across the globe and low cost manufacturing operations in the United States, Central Europe and China. For the years ended December 31, 2015, 2014 and 2013, we generated sales of \$1,040.2 million, \$1,193.0 million, and \$1,177.4 million, respectively.

##### Segments, Applications and Products

We operate in three business segments: (i) Energy & Chemicals or E&C, (ii) Distribution & Storage or D&S, and (iii) BioMedical. While each segment manufactures and markets different cryogenic and gas processing equipment and systems to distinct end-users, they all share a reliance on our heat transfer, vacuum insulation, low temperature storage and gas processing know-how and expertise. The E&C and D&S segments manufacture products used primarily in energy-related and industrial applications, such as the separation, liquefaction, distribution and storage of hydrocarbon and industrial gases. Through our BioMedical segment, we supply cryogenic and other equipment used in respiratory healthcare and life sciences including biological research and animal breeding. Further information about these segments is located in Note 19 of the notes to the Company’s consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

The following charts show the proportion of our revenues generated by each business segment, as well as our estimate of the proportion of revenue generated by end-user application for the year ended December 31, 2015:

#### Energy & Chemicals Segment

E&C (32% of sales for the year ended December 31, 2015) facilitates major natural gas, petrochemical processing and industrial gas companies in the production of their products. E&C supplies mission critical engineered equipment and systems used in the separation, liquefaction, and purification of hydrocarbon and industrial gases that span gas-to-liquid applications including natural gas processing, LNG, and industrial gas applications. Our principal products include brazed aluminum heat exchangers, Core-in-Kettle<sup>®</sup> heat exchangers, air cooled heat exchangers, cold boxes, and process systems. Brazed aluminum heat exchangers accounted for 11.9%, 14.9% and 14.4% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. Process systems accounted for 14.0%, 12.3% and 13.5% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively.

#### Natural Gas Processing (including Petrochemical) applications

We provide natural gas processing solutions that facilitate the progressive cooling and liquefaction of hydrocarbon mixtures for the subsequent recovery or purification of component gases, which accounted for 17.4%, 17.5% and 14.9% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. Our brazed aluminum heat exchangers allow producers to obtain purified hydrocarbon by-products, such as methane, ethane, propane and ethylene, which are commercially marketable for various industrial or residential uses. Our cold boxes are highly engineered systems that incorporate brazed aluminum heat exchangers, pressure vessels and interconnecting piping used to significantly reduce the temperature of gas mixtures to liquefy component gases so that they can be separated and purified for further use in multiple energy, industrial, scientific and commercial applications. Our air cooled heat exchangers are used to cool or condense fluids to allow for further processing and for cooling gas compression equipment. Customers for our natural gas processing applications include large companies in the hydrocarbon processing industry, as well as engineering, procurement and construction (“EPC”) contractors. Demand for these applications is primarily driven by the growth in the natural gas liquids (or NGLs) separation and other natural gas segments of the hydrocarbon processing industries, including LNG. In the future, management believes that continuing efforts by petroleum producing countries to better utilize stranded natural gas and previously flared gases present a promising source of demand. We have a number of competitors for our heat exchangers and cold boxes, including a number of leading companies in the industrial gas and hydrocarbon processing industries and many smaller fabrication-only facilities

around the world. Competition with respect to our more specialized brazed aluminum heat exchangers includes a small number of global (European and Asian) manufacturers.

#### LNG applications

We provide mission critical equipment for the liquefaction of LNG including small to mid-scale facilities, floating LNG applications, and large base-load export facilities, which accounted for 13.1%, 12.1% and 9.7% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. We are a leading supplier to EPC firms where we provide equipment or design the process and provide equipment, providing an integrated approach to the project. These “Concept-to-Reality” process systems incorporate many of Chart’s core products, including brazed aluminum heat exchangers, Core-in-Kettle® heat exchangers, cold boxes, pressure vessels, pipe work and air cooled heat exchangers. These systems are used for global LNG projects, including projects in China and North America for local LNG production and LNG export terminals. We have developed our proprietary IPSMR® (Integrated Pre-cooled Single Mixed Refrigerant) liquefaction process, which offers lower capital expenditure rates than competing processes per ton of LNG produced and offers very competitive operating costs.

Demand for LNG applications is primarily driven by increased use and global trade in natural gas (transported as LNG) since natural gas offers significant cost and environmental advantages over other fossil fuels. Demand for LNG applications is also driven by diesel displacement and continuing efforts by petroleum producing countries to better utilize stranded natural gas and previously flared gases. We have a number of competitors for these applications, including leading industrial gas companies, other brazed aluminum heat exchanger manufacturers, and other equipment fabricators to whom we also act as a supplier of equipment including heat exchangers and cold boxes.

#### Industrial Gas applications

For industrial gas applications, our brazed aluminum heat exchangers and cold boxes are used to produce high purity atmospheric gases, such as oxygen, nitrogen and argon, which have diverse industrial applications. Cold boxes are used to separate air into its major atmospheric components, including oxygen, nitrogen, and argon, where the gases are used in a diverse range of applications such as metal production and heat treating, enhanced oil and gas production, coal gasification, chemical and oil refining, electronics, medical, the quick-freezing of food, wastewater treatment, and industrial welding. Our brazed aluminum heat exchangers and cold boxes are also used in the purification of helium and hydrogen.

Demand for industrial gas applications is driven by growth in manufacturing and industrial gas use. Other key global drivers involve developing Gas to Liquids, or GTL, clean coal processes including Coal to Liquids, or CTL, and Integrated Gasification Combined Cycle, or IGCC, power projects. In addition, demand for our products in developed countries is expected to continue as customers upgrade their facilities for greater efficiency and regulatory compliance. We have a number of competitors for these applications including leading industrial gas companies and EPC firms to whom we also act as a supplier of equipment including heat exchangers and cold boxes.

#### Distribution & Storage Segment

D&S (47% of sales for the year ended December 31, 2015) designs, manufactures, and services cryogenic solutions for the storage and delivery of cryogenic liquids used in industrial gas and LNG applications. Using sophisticated vacuum insulation technology, our cryogenic storage systems are able to store and transport liquefied industrial gases and hydrocarbon gases at temperatures from 0° Fahrenheit to temperatures nearing absolute zero. End-use customers for our cryogenic storage equipment include industrial gas producers and distributors, chemical producers, manufacturers of electrical components, health care organizations, food processors, and businesses in the oil and natural gas industries. Cryogenic bulk storage systems accounted for 15.0%, 12.7% and 14.9% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. Cryogenic packaged gas systems accounted for 15.3%, 13.4% and 13.0% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively.

We service industrial gas and LNG applications as follows:

#### Industrial Gas applications

We design, manufacture, install, service, and maintain bulk and packaged gas cryogenic solutions for the storage, distribution, vaporization, and application of industrial gases, which accounted for 35.7%, 30.9% and 33.9% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. Industrial gas applications include any end-use of the major elements of air (nitrogen, oxygen, and argon), including manufacturing, welding,

electronics, medical, nitrogen dosing, food processing, and beverage carbonation. Carbon dioxide, nitrous oxide, hydrogen and helium applications also utilize our equipment. Our products span the entire spectrum of industrial gas demand from small customers requiring cryogenic packaged gases to large users requiring custom engineered cryogenic storage systems in both mobile and stationary applications. We also offer cryogenic components, including vacuum insulated pipe (“VIP”), engineered bulk gas installations, specialty liquid nitrogen, or LN2, end-use equipment and cryogenic flow meters. We operate service locations in the United



States, China and Europe that provide installation, service, repair and maintenance of cryogenic products. Principal customers for industrial applications are global industrial gas producers and distributors.

Demand for industrial gas applications is driven primarily by the significant installed base of users of cryogenic liquids as well as new applications and distribution technologies for cryogenic liquids. Our competitors tend to be regionally focused while we are able to supply a broad range of systems on a worldwide basis. We also compete with several suppliers owned by the global industrial gas producers. From a technology perspective, we tend to compete with compressed gas alternatives or on-site generated gas supply.

#### LNG Applications

We supply cryogenic solutions for the storage, distribution, regasification, and use of LNG, which accounted for 11.1%, 17.6% and 16.4% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. LNG may be utilized as an alternative to other fossil fuels such as diesel, propane or fuel oil in transportation or off pipeline applications. Examples include heavy duty truck and transit bus transportation, locomotive propulsion, marine, and power generation in remote areas that often occurs in oil and gas drilling. We refer to our LNG distribution products as a "Virtual Pipeline," as the traditional natural gas pipeline is replaced with cryogenic distribution to deliver the gas to the end-user. We supply cryogenic trailers, ISO containers, railcars, bulk storage tanks, fuel stations, loading facilities, and regasification equipment specially configured for delivering LNG into Virtual Pipeline applications. LNG may also be used as a fuel for a variety of off-road vehicles and applications. Our LNG vehicle fueling applications primarily consist of LNG and liquefied/compressed natural gas refueling systems for heavy-duty truck and bus fleets. We sell LNG applications around the world from various D&S facilities to numerous end-users, energy companies, and gas distributors. Additionally, we supply large vacuum insulated storage tanks as optional equipment for purchasers of standard liquefaction plants sold by our E&C business.

Demand for LNG applications is driven by the spread in price between oil and gas, diesel displacement initiatives, environmental and energy security initiatives, and the associated cost of equipment. Our competitors tend to be regionally focused or product-specific, while we are able to supply a broad range of solutions required by LNG applications. We compete with compressed natural gas (or CNG) or field gas in several of these applications and LNG is most highly valued where its energy density and purity are beneficial to the end-user.

#### BioMedical Segment

BioMedical (21% of sales for the year ended December 31, 2015) consists of various product lines built around our core competencies in cryogenics, vacuum insulation, low temperature storage, and pressure swing adsorption, but with a focus on the respiratory and biological users of the liquids and gases instead of the large producers and distributors of cryogenic liquids. Applications in the BioMedical segment include the following:

##### Respiratory Therapy

Respiratory therapy products accounted for 12.7%, 11.8% and 14.9% of consolidated sales for the years ended December 31, 2015, 2014 and 2013, respectively. Our respiratory oxygen product line is comprised of a range of medical respiratory products, including liquid oxygen systems and stationary, transportable, and portable oxygen concentrators, all of which are used primarily for in-home supplemental oxygen treatment of patients with chronic obstructive pulmonary diseases, such as bronchitis, emphysema and asthma.

We believe that competition for our respiratory products is based primarily upon product quality, performance, reliability, ease-of-use and price, and we focus our marketing strategies on these considerations. Furthermore, competition also includes the impact of other modalities in the broader respiratory industry.

##### Life Sciences

Our life science products include vacuum insulated containment vessels for the storage of biological materials. The primary applications for this product line include medical laboratories, biotech/pharmaceutical, research facilities, blood and tissue banks, veterinary laboratories, large-scale repositories and artificial insemination, particularly in the beef and dairy industry.

The significant competitors for life science products include a number of companies worldwide. These products are sold through multiple channels of distribution specifically applicable to each industry sector. The distribution channels range from highly specialized cryogenic storage systems providers to general supply and catalogue distribution operations and breeding service providers. Competition in this field is focused on design, reliability and price.

Alternatives to vacuum insulated containment vessels include electrically powered mechanical refrigeration.

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### Commercial Oxygen Generation

Our commercial oxygen generation products include self-contained generators, standard generators, and packaged systems for industrial and medical oxygen generating systems. These generators produce oxygen from compressed air and provide an efficient and cost-effective alternative to the procurement of oxygen from third party cylinder or liquid suppliers. Applications include mining operations, industrial plants, ozone generation, hospital medical oxygen, and wastewater treatment, among other commercial applications. Management expects demand for this product line to increase over the long-term with competition focused on design, reliability and price.

### Domestic and Foreign Operations

Financial and other information regarding domestic and foreign operations is located in Note 19 of the notes to the Company's consolidated financial statements included in Item 8 of this Annual Report on Form 10-K. Additional information regarding risks attendant to foreign operations is set forth in Item 7A of this Annual Report on Form 10-K under the caption "Quantitative and Qualitative Disclosures About Market Risk" and Item 7 under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operations."

### Engineering and Product Development

Our engineering and product development activities are focused primarily on developing new and improved solutions and equipment for the users of cryogenic liquids and hydrocarbon and industrial gases across all industries served. Our engineering, technical and marketing employees actively assist customers in specifying their needs and in determining appropriate products to meet those needs. Portions of our engineering expenditures typically are charged to customers, either as separate items or as components of product cost.

### Competition

We believe we can compete effectively around the world and that we are a leading competitor in the industries we serve. Competition is based primarily on performance and the ability to provide the design, engineering and manufacturing capabilities required in a timely and cost-efficient manner. Contracts are usually awarded on a competitive bid basis. Quality, technical expertise and timeliness of delivery are the principal competitive factors within the industries we serve. Price and terms of sale are also important competitive factors. Because independent third-party prepared market share data is not available, it is difficult to know for certain our exact position in our markets, although we believe we rank among the leaders in each of the markets we serve. We base our statements about industry and market positions on our reviews of annual reports and published investor presentations of our competitors and augment this data with information received by marketing consultants conducting competition interviews and our sales force and field contacts. For information concerning competition within a specific segment of the Company's business, see the descriptions provided under segment captions in this Annual Report on Form 10-K.

### Marketing

We market our products and services in each of our segments throughout the world primarily through direct sales personnel and independent sales representatives and distributors. The technical and custom design nature of our products requires a professional, highly trained sales force. We use independent sales representatives and distributors to market our products and services in certain foreign countries and in certain North American regions. These independent sales representatives supplement our direct sales force in dealing with language and cultural matters. Our domestic and foreign independent sales representatives earn commissions on sales, which vary by product type.

### Backlog

The dollar amount of our backlog as of December 31, 2015, 2014 and 2013 was \$374.6 million, \$640.1 million and \$728.8 million, respectively. Approximately 22.4% of the December 31, 2015 backlog is expected to be filled beyond 2016. Backlog is comprised of the portion of firm signed purchase orders or other written contractual commitments received from customers that we have not recognized as revenue under the percentage of completion method or based upon shipment. Backlog can be significantly affected by the timing of orders for large products, particularly in the E&C segment, and the amount of backlog at December 31, 2015 described above is not necessarily indicative of future backlog levels or the rate at which backlog will be recognized as sales. Orders included in our backlog may include customary cancellation provisions under which the customer could cancel all or part of the order, potentially subject to the payment of certain costs and/or penalties. For further information about our backlog, including backlog by business segment, see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of

Operations.”

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### Customers

We sell our products primarily to gas producers, distributors and end-users across energy, industry, life sciences and respiratory healthcare applications in countries throughout the world. Sales to our top ten customers accounted for 36%, 34% and 37% of consolidated sales in 2015, 2014 and 2013, respectively. No single customer exceeded 10% of consolidated sales in 2015. Our sales to particular customers fluctuate from period to period, but the global producers and distributors of hydrocarbon and industrial gases and their suppliers tend to be a consistently large source of revenue for us. Our supply contracts are generally contracts for “requirements” only. While our customers may be obligated to purchase a certain percentage of their supplies from us, there are generally no minimum requirements. Also, many of our contracts may be canceled at any time, subject to possible cancellation charges. To minimize credit risk from trade receivables, we review the financial condition of potential customers in relation to established credit requirements before sales credit is extended, and we monitor the financial condition of customers to help ensure timely collections and to minimize losses. In addition, for certain domestic and foreign customers, particularly in the D&S and E&C segments, we require advance payments, letters of credit, bankers’ acceptances and other such guarantees of payment. Certain customers also require us to issue letters of credit or performance bonds, particularly in instances where advance payments are involved, as a condition to placing the order. We believe our relationships with our customers are generally good.

### Intellectual Property

Although we have a number of patents, trademarks and licenses related to our business, no one of them or related group of them is considered by us to be of such importance that its expiration or termination would have a material adverse effect on our business. In general, we depend upon technological capabilities, manufacturing quality control and application of know-how, rather than patents or other proprietary rights, in the conduct of our business.

### Raw Materials and Suppliers

We manufacture most of the products we sell. The raw materials used in manufacturing include aluminum products (including sheets, bars, plate and piping), stainless steel products (including sheets, plates, heads and piping), palladium oxide, carbon steel products (including sheets, plates and heads), valves and gauges and fabricated metal components. Most raw materials are available from multiple sources of supply. We believe our relationships with our raw material suppliers and other vendors are generally good. Raw material prices were fairly stable during 2015, and we expect them to remain stable during 2016. Subject to certain risks related to our suppliers as discussed under Item 1A. “Risk Factors,” we foresee no acute shortages of any raw materials that would have a material adverse effect on our operations.

### Employees

As of January 31, 2016, we had 4,266 employees, including 2,128 domestic employees and 2,138 international employees.

We are a party to one collective bargaining agreement with the International Association of Machinists and Aerospace Workers (“IAM”) covering 194 employees at our La Crosse, Wisconsin heat exchanger facility. Effective February 3, 2013, we entered into a five-year agreement with the IAM which expires on February 3, 2018.

### Environmental Matters

Our operations have historically included and currently include the handling and use of hazardous and other regulated substances, such as various cleaning fluids used to remove grease from metal, that are subject to federal, state, local and foreign environmental laws and regulations. These regulations impose limitations on the discharge of pollutants into the soil, air and water, and establish standards for their handling, management, use, storage and disposal. We monitor and review our procedures and policies for compliance with environmental laws and regulations. Our management is familiar with these regulations and supports an ongoing program to maintain our adherence to required standards.

We are involved with environmental compliance, investigation, monitoring and remediation activities at certain of our owned or formerly owned manufacturing facilities and at one owned facility that is leased to a third party. We believe that we are currently in substantial compliance with all known environmental regulations. We accrue for certain environmental remediation-related activities for which commitments or remediation plans have been developed or for which costs can be reasonably estimated. These estimates are determined based upon currently available facts

regarding each facility. Actual costs incurred may vary from these estimates due to the inherent uncertainties involved. Future expenditures relating to these environmental remediation efforts are expected to be made over the next 13 years as ongoing costs of remediation programs. We do not believe that these regulatory requirements have had a material effect upon our capital expenditures, earnings or competitive position. We are not anticipating any material capital expenditures in 2016 that are directly related to regulatory compliance matters. Although we believe we have adequately provided for the cost of all known environmental conditions,

additional contamination, the outcome of disputed matters or changes in regulatory posture could result in more costly remediation measures than budgeted, or those we believe are adequate or required by existing law. We believe that any additional liability in excess of amounts accrued which may result from the resolution of such matters will not have a material adverse effect on our financial position, liquidity, cash flows or results of operations.

#### Available Information

Additional information about the Company is available at [www.chartindustries.com](http://www.chartindustries.com). On the Investor Relations page of the website, the public may obtain free copies of the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable following the time that they are filed with, or furnished to, the Securities and Exchange Commission ("SEC"). Additionally, the Company has posted its Code of Ethical Business Conduct and Officer Code of Ethics on its website, which are also available free of charge to any shareholder interested in obtaining a copy. This Form 10-K and reports filed with the SEC are also accessible through the SEC's website at [www.sec.gov](http://www.sec.gov). References to our website or the SEC's website do not constitute incorporation by reference of the information contained on such websites, and such information is not part of this Form 10-K.

#### Item 1A. Risk Factors

Investing in our common stock involves risk. You should carefully consider the risks described below as well as the other information contained in this Annual Report on Form 10-K in evaluating your investment in us. If any of the following risks actually occur, our business, financial condition, operating results or cash flows could be harmed materially. Additional risks, uncertainties and other factors that are not currently known to us or that we believe are not currently material may also adversely affect our business, financial condition, operating results or cash flows. In any of these cases, you may lose all or part of your investment in us.

##### Risks Related to Our Business

The markets we serve are subject to cyclical demand and vulnerable to economic downturn, which could harm our business and make it difficult to project long-term performance.

Demand for our products depends in large part upon the level of capital and maintenance expenditures by many of our customers and end-users, in particular those customers in the global hydrocarbon and industrial gas markets. These customers' expenditures historically have been cyclical in nature and vulnerable to economic downturns. Decreased capital and maintenance spending by these customers could have a material adverse effect on the demand for our products and our business, financial condition and results of operations. In addition, this historically cyclical demand limits our ability to make accurate long-term predictions about the performance of our company. Even if demand improves, it is difficult to predict whether any improvement represents a long-term improving trend or the extent or timing of improvement. There can be no assurance that historically improving cycles are representative of actual future demand.

While we experienced growth in demand from 2003 until mid-2008 in the global hydrocarbon and industrial gas markets, we experienced a significant decline in orders from mid-2008 until mid-2009. Although there was improvement in orders for our businesses, particularly in 2011 through 2013, we have experienced a substantial decline since 2014 in hydrocarbon demand with the decline in energy prices. We cannot predict whether business performance may be better or worse in the future.

The loss of, or significant reduction or delay in, purchases by our largest customers could reduce our sales and profitability.

A small number of customers has accounted for a substantial portion of our historical net sales. For example, sales to our top ten customers accounted for 36%, 34% and 37% of consolidated sales in 2015, 2014 and 2013, respectively. We expect that a limited number of customers will continue to represent a substantial portion of our sales for the foreseeable future. While our sales to particular customers fluctuate from period to period, the global producers and distributors of hydrocarbon and industrial gases and their suppliers tend to be a consistently large source of our sales. The loss of any of our major customers or a decrease or delay in orders or anticipated spending by such customers could materially reduce our sales and profitability. We did experience several delays in customer orders during 2015 as energy prices fell and our customers adjusted project timing. Continued delays in the anticipated timing of LNG

infrastructure build out or respiratory therapy demand recovery could materially reduce the demand for our products. Our largest customers could also engage in business combinations, which could increase their size, reduce their demand for our products as they recognize synergies or rationalize assets and increase or decrease the portion of our total sales concentration to any single customer. For example, two of our largest customers, Airgas and Air Liquide, have plans to combine during 2016.



Decreases in energy prices, or a decrease in the cost of oil relative to natural gas, may decrease demand for some of our products and cause downward pressure on the prices we charge, which could harm our business, financial condition and results of operations.

A significant amount of our sales are to customers in the energy production and supply industry. We estimate that 42% of our sales for the year ended December 31, 2015 were generated by end-users in the energy industry, with many of our products sold for natural gas-related applications. Accordingly, demand for a significant portion of our products depends upon the level of capital expenditures by companies in the oil and gas industry, which depends, in part, on energy prices as well as the price of oil relative to natural gas for some applications. Some applications for our products could see greater demand when prices for natural gas are relatively low compared to oil prices, but a sustained decline in energy prices generally and a resultant downturn in energy production activities could negatively affect the capital expenditures of our customers. For example, the sharp decline in oil prices since the fourth quarter of 2014 has had a negative impact on demand for some of our products. Any significant decline in the capital expenditures of our customers, whether due to a decrease in the market price of energy or otherwise, may decrease demand for our products and cause downward pressure on the prices we charge. Accordingly, if there is a continued or further downturn in the energy production and supply industry, including a decline in the cost of oil relative to natural gas, our business, financial condition and results of operations could be adversely affected.

If we are unable to successfully control our costs and efficiently manage our operations, it may place a significant strain on our management and administrative resources and lead to increased costs and reduced profitability.

We have implemented cost savings initiatives to align our business with current economic conditions. Our ability to operate our business successfully and implement our strategies depends, in part, on our ability to allocate our resources optimally in each of our facilities in order to maintain efficient operations. Ineffective management could cause manufacturing inefficiencies, increase our operating costs, place significant strain on our management and administrative resources and prevent us from being able to take advantage of opportunities as economic conditions improve. If we are unable to align our cost structure in response to prevailing economic conditions on a timely basis, or if implementation or failure to implement any cost structure adjustments has an adverse impact on our business or prospects, then our financial condition, results of operations and cash flows may be negatively affected.

Similarly, it is critical that we appropriately manage our planned capital expenditures in this challenging economic environment. For example, we have invested or plan to invest approximately \$20 to \$25 million in new capital expenditures in 2016 related to the expected growth of selective parts of each of the E&C, D&S and BioMedical segments. If we fail to implement these projects in a timely and effective manner, we may lose the opportunity to obtain some new customer orders. Even if we effectively implement these projects, the orders needed to support the capital expenditure may not be obtained, may be delayed, or may be less than expected, which may result in sales or profitability at lower levels than anticipated. For example, while we invested in the expansion of our D&S segment in China in recent years, we have experienced delay in some of the orders anticipated to support that expansion, which has resulted in the underutilization of our capacity.

Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing and the potential for related regulatory action or litigation could result in increased costs and additional operating restrictions or delays for our customers, which could negatively impact our business, financial condition and results of operations.

We supply equipment to companies that process, transport and utilize natural gas, many of which benefit from increased natural gas production resulting from hydraulic fracturing in the oil and natural gas industry. As a result, increased regulation of hydraulic fracturing may adversely impact our business, financial condition and results of operations. If additional levels of regulation are implemented with respect to hydraulic fracturing, it may make it more difficult to complete natural gas wells in shale formations and discourage exploration of new wells. This could increase our customers' costs of compliance and doing business or otherwise adversely affect the hydraulic fracturing services they perform, which may negatively impact natural gas production and demand for our equipment used in the natural gas industry.

In addition, heightened political, regulatory and public scrutiny of hydraulic fracturing practices could potentially expose our customers to increased legal and regulatory proceedings, which could negatively impact natural gas production and demand for our equipment used in the natural gas industry. Any such developments could have a material adverse effect on our business, financial condition and results of operations, whether directly or indirectly. We may be unable to compete successfully in the highly competitive markets in which we operate.

Although many of our products serve niche industry areas, a number of our direct and indirect competitors in these areas are major corporations, some of which have substantially greater technical, financial and marketing resources than Chart, and other competitors enter these areas from time to time. Any increase in competition may cause us to lose market share or compel us to reduce prices to remain competitive, which could result in reduced sales and earnings. We compete with several suppliers

owned by global industrial gas producers or large industrial companies and many smaller fabrication-only facilities around the world. Increased competition with these companies could prevent the institution of price increases or could require price reductions or increased spending on research and development, and marketing and sales, any of which could materially reduce our sales, profitability or both. Moreover, during an industry downturn, competition in some of the product lines we serve increases as a result of over-capacity, which may result in downward pricing pressure. Further, customers who typically outsource their need for cryogenic systems to us may use their excess capacity to produce such systems themselves. We also compete in the sale of a limited number of products with certain of our major customers. If we are unable to compete successfully, our results of operations, cash flows and financial condition could be negatively affected.

We carry goodwill and indefinite-lived intangible assets on our balance sheet, which are subject to impairment testing and could subject us to significant non-cash charges to earnings in the future if impairment occurs.

As of December 31, 2015, we had goodwill and indefinite-lived intangible assets of \$254.1 million, which represented approximately 21.1% of our total assets. Goodwill and indefinite-lived intangible assets are not amortized, but are tested for impairment annually in the fourth quarter or more often if events or changes in circumstances indicate a potential impairment may exist. Factors that could indicate that our goodwill or indefinite-lived intangible assets are impaired include a decline in stock price and market capitalization, lower than projected operating results and cash flows, and slower growth rates in our industry. Our stock price historically has shown volatility and often fluctuates significantly in response to market and other factors. For example, it declined significantly from mid-2008 to early 2009 and then increased sharply beginning in late 2010 through late 2013, when it again declined significantly in connection with energy price declines in 2014 and 2015. Declines in our stock price, lower operating results and any decline in industry conditions in the future could increase the risk of impairment. Impairment testing incorporates our estimates of future operating results and cash flows, estimates of allocations of certain assets and cash flows among reporting segments, estimates of future growth rates and our judgment regarding the applicable discount rates used on estimated operating results and cash flows. As a result of the above analyses, we recorded an impairment charge related to goodwill and indefinite-lived intangible assets of \$207.7 million during the fourth quarter of 2015. If we determine that further impairment exists, it may result in a significant non-cash charge to earnings and lower stockholders' equity.

Governmental energy policies could change, or expected changes could fail to materialize, which could adversely affect our business or prospects.

Energy policy can develop rapidly in the markets we serve, including the United States, Europe and China. Within the last few years, significant developments have taken place, primarily in international markets that we serve with respect to energy policy and related regulations. We anticipate that energy policy will continue to be an important regulatory priority globally as well as on a national, state and local level. As energy policy continues to evolve, the existing rules and incentives that impact the energy-related segments of our business may change. It is difficult, if not impossible, to predict whether changes in energy policy might occur in the future and the timing of potential changes and their impact on our business. The elimination or reduction of favorable policies for our energy-related business, or the failure to adopt expected policies that would benefit our business, could negatively impact our sales and profitability.

Our backlog is subject to modification, termination or reduction of orders, which could negatively impact our sales. Our backlog is comprised of the portion of firm signed purchase orders or other written contractual commitments received from customers that we have not recognized as sales. The dollar amount of backlog as of December 31, 2015 was \$374.6 million. Our backlog can be significantly affected by the timing of orders for large projects, particularly in our E&C segment, and the amount of our backlog at December 31, 2015 is not necessarily indicative of future backlog levels or the rate at which backlog will be recognized as sales. Although modifications and terminations of our orders may be partially offset by cancellation fees, customers can, and sometimes do, terminate or modify these orders. We cannot predict whether cancellations will accelerate or diminish in the future. Cancellations of purchase orders, indications that the customers will not perform or reductions of product quantities in existing contracts could substantially and materially reduce our backlog and, consequently, our future sales. For example, D&S segment orders during 2015 were reduced by approximately \$150.0 million when current circumstances suggested that our customers

were not likely to take delivery in the future. Our failure to replace canceled orders could negatively impact our sales and results of operations.

We may fail to successfully acquire or integrate companies that provide complementary products or technologies. A component of our business strategy is the acquisition of businesses that complement our existing products and services. Such a strategy involves the potential risks inherent in assessing the value, strengths, weaknesses, contingent or other liabilities and potential profitability of acquisition candidates and in integrating the operations of acquired companies. In addition, any

acquisitions of businesses with foreign operations or sales may increase our exposure to risks inherent in doing business outside the United States.

From time to time, we may have acquisition discussions with potential target companies both domestically and internationally. If a large acquisition opportunity arises and we proceed, a substantial portion of our cash and surplus borrowing capacity could be used for the acquisition or we may seek additional debt or equity financing.

Potential acquisition opportunities become available to us from time to time, and we engage periodically in discussions or negotiations relating to potential acquisitions, including acquisitions that may be material in size or scope to our business. Any acquisition may or may not occur and, if an acquisition does occur, it may not be successful in enhancing our business for one or more of the following reasons:

- Any business acquired may not be integrated successfully and may not prove profitable;
- The price we pay for any business acquired may overstate the value of that business or otherwise be too high;
- Liabilities we take on through the acquisition may prove to be higher than we expected;
- We may fail to achieve acquisition synergies; or
- The focus on the integration of operations of acquired entities may divert management's attention from the day-to-day operation of our businesses.

Inherent in any future acquisition is the risk of transitioning company cultures and facilities. The failure to efficiently and effectively achieve such transitions could increase our costs and decrease our profitability.

Downturns in economic and financial conditions have had and may have in the future a negative effect on our business, financial condition and results of operations.

Demand for our products depends in large part upon the level of capital and maintenance expenditures by many of our customers and end-users. A downturn in economic conditions in industries in which we operate may reduce the willingness or ability of our customers and prospective customers to commit funds to purchase our products and services, and may reduce their ability to pay for our products and services after purchase. Economic conditions that could impact our business include, but are not limited to, decreased energy prices, recessionary conditions, slow or negative economic growth rates, the impact of state and sovereign debt defaults or the impact of governmental budgetary pressures. Similarly, our suppliers may not be able to supply us with needed raw materials or components on a timely basis, may increase prices or go out of business, which could result in our inability to meet customer demand, fulfill our contractual obligations or could affect our gross margins. See "We depend on the availability of certain key suppliers; if we experience difficulty with a supplier, we may have difficulty finding alternative sources of supply" below. We cannot predict the timing or duration of negative market conditions. If the economy or industries in which we operate deteriorate or financial markets weaken, our business, financial condition and results of operations could be adversely impacted.

Our exposure to fixed-price contracts, including exposure to fixed pricing on long-term customer contracts and performance guarantees, could negatively impact our financial results.

A substantial portion of our sales has historically been derived from fixed-price contracts for large system projects, which may involve long-term fixed price commitments to customers or guarantees of equipment or process performance and which are sometimes difficult to execute. To the extent that any of our fixed-price contracts are delayed, we fail to satisfy a performance guarantee, our subcontractors fail to perform, contract counterparties successfully assert claims against us, the original cost estimates in these or other contracts prove to be inaccurate or the contracts do not permit us to pass increased costs on to our customers, profitability from a particular contract may decrease or project losses may be incurred, which, in turn, could decrease our sales and overall profitability. The uncertainties associated with our fixed-price contracts make it more difficult to predict our future results and exacerbate the risk that our results will not match expectations, which has happened in the past.

We depend on the availability of certain key suppliers; if we experience difficulty with a supplier, we may have difficulty finding alternative sources of supply.

The cost, quality and availability of raw materials, certain specialty metals and specialized components used to manufacture our products are critical to our success. The materials and components we use to manufacture our products are sometimes custom made and may be available only from a few suppliers, and the lead times required to obtain these materials and components can often be significant. We rely on sole suppliers or a limited number of

suppliers for some of these materials, including special grades of aluminum used in our brazed aluminum heat exchangers and compressors included in some of our product offerings. While we have not historically encountered problems with availability, this does not mean that we will

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continue to have timely access to adequate supplies of essential materials and components in the future or that supplies of these materials and components will be available on satisfactory terms when needed. If our vendors for these materials and components are unable to meet our requirements, fail to make shipments in a timely manner or ship defective materials or components, we could experience a shortage or delay in supply or fail to meet our contractual requirements, which would adversely affect our results of operations and negatively impact our cash flow and profitability.

Health care reform or other changes in government and other third-party payor reimbursement levels and practices could negatively impact our sales and profitability.

Many of our BioMedical segment's customers are reimbursed for products and services by third-party payors, such as government programs, including Medicare and Medicaid, private insurance plans and managed care programs in the U.S., and by similar programs and entities in the other countries in which we operate or sell our equipment.

In March 2010, the Affordable Care Act was adopted in the U.S. The law includes provisions that, among other things, reduce and/or limit Medicare reimbursement, require all individuals to have health insurance (with limited exceptions) and impose new and/or increased taxes. In addition, the Affordable Care Act requires the Centers for Medicare & Medicaid Services ("CMS"), the agency responsible for administering the Medicare program, to nationalize a competitive bidding process or adjust the prices in non-competitive bidding areas to match competitive bidding prices.

CMS has since implemented a number of payment rules that reduced Medicare payments for oxygen and oxygen equipment. Under the competitive bidding program, CMS selected contract suppliers that agreed to receive as payment the "single payment amount" calculated by CMS in certain geographic regions. In January 2011, round one of competitive bidding significantly reduced the number of homecare oxygen suppliers able to participate in the Medicare program in 91 U.S. Metropolitan Statistical Areas ("MSA"). Round two of competitive bidding was implemented in July 2013 in 91 U.S. MSAs, further decreasing the number of oxygen suppliers. In October 2014, CMA set rules to adjust the fee schedule amounts for the remaining un-bid areas to match bid areas based on regional averages, which will begin to be applied partially from January 1, 2016 to June 30, 2016 and fully implemented by July 1, 2016.

There remains a significant amount of uncertainty regarding healthcare reform and the effect of competitive bidding on the durable medical equipment industry. The potential impact of new and changing policies on the demand for our products or the prices at which we sell our products could have a material adverse effect on our business, results of operations and/or financial condition.

Due to the nature of our business and products, we may be liable for damages based on product liability and warranty claims.

Due to the high pressures and low temperatures at which many of our products are used, the inherent risks associated with concentrated industrial and hydrocarbon gases, and the fact that some of our products are relied upon by our customers or end users in their facilities or operations, or are manufactured for relatively broad industrial, medical, transportation or consumer use, we face an inherent risk of exposure to claims in the event that the failure, use or misuse of our products results, or is alleged to result, in death, bodily injury, property damage or economic loss. We believe that we meet or exceed existing professional specification standards recognized or required in the industries in which we operate. We are subject to claims from time to time, some of which are substantial, including a claim involving property damage and economic loss in the past where the amount claimed exceeded \$100 million, and we may be subject to claims in the future. Although we currently maintain product liability coverage, which we believe is adequate, it includes customary exclusions and conditions, it may not cover certain specialized applications such as aerospace-related applications, and it generally does not cover warranty claims. Additionally, such insurance may become difficult to obtain or be unobtainable in the future on terms acceptable to us. A successful product liability claim or series of claims against us, including one or more consumer claims purporting to constitute class actions or claims resulting from extraordinary loss events, in excess of or outside our insurance coverage, or a significant warranty claim or series of claims against us, could materially decrease our liquidity, impair our financial condition and adversely affect our results of operations.

Fluctuations in exchange and interest rates may affect our operating results and impact our financial condition.

Fluctuations in the value of the U.S. dollar may increase or decrease our sales or earnings. Because our consolidated financial results are reported in U.S. dollars, if we generate sales or earnings in other currencies, the translation of those results into U.S. dollars can result in a significant increase or decrease in the amount of those sales or earnings. We also bid for certain foreign projects in U.S. dollars or euros. If the U.S. dollar or euro strengthens relative to the value of the local currency, we may be less competitive on those projects. In addition, our debt service requirements are primarily in U.S. dollars and a portion



of our cash flow is generated in euros or other foreign currencies. Significant changes in the value of the foreign currencies relative to the U.S. dollar could impair our cash flow and financial condition.

In addition, fluctuations in currencies relative to the U.S. dollar may make it more difficult to perform period-to-period comparisons of our reported results of operations. For purposes of accounting, the assets and liabilities of our foreign operations, where the local currency is the functional currency, are translated using period-end exchange rates, and the revenues and expenses of our foreign operations are translated using average exchange rates during each period. For example, we have material euro-denominated net monetary assets and liabilities. If economic circumstances result in a significant devaluation of the euro, the value of our euro-denominated net monetary assets and liabilities would be correspondingly reduced when translated into U.S. dollars for inclusion in our financial statements. Similarly, the re-introduction of certain individual country currencies or the complete dissolution of the euro, could adversely affect the value of our euro-denominated net monetary assets and liabilities. In either case, our business, results of operations, financial condition and liquidity could be materially adversely affected. In addition to currency translation risks, we incur currency transaction risk whenever we or one of our subsidiaries enters into either a purchase or a sales transaction using a currency other than the functional currency of the transacting entity. Given the volatility of exchange rates, we may not be able to effectively manage our currency and/or translation risks. Volatility in currency exchange rates may decrease our sales and profitability and impair our financial condition. We have purchased and may continue to purchase foreign currency forward buy and sell contracts to manage the risk of adverse currency fluctuations and if the contracts are inconsistent with currency trends we could experience exposure related to foreign currency fluctuations.

We are also exposed to general interest rate risk. If interest rates increase, our interest expense could increase significantly, affecting earnings and reducing cash flow available for working capital, capital expenditures, acquisitions, and other purposes. In addition, changes by any rating agency to our outlook or credit ratings could increase our cost of borrowing.

As a global business, we are exposed to economic, political and other risks in different countries which could materially reduce our sales, profitability or cash flows, or materially increase our liabilities.

Since we manufacture and sell our products worldwide, our business is subject to risks associated with doing business internationally. In 2015, 2014 and 2013, 51%, 53% and 59%, respectively, of our sales were made in international markets. Our future results could be harmed by a variety of factors, including:

- changes in foreign currency exchange rates;
- exchange controls and currency restrictions;
- changes in a specific country's or region's political, social or economic conditions, particularly in emerging markets;
- civil unrest, turmoil or outbreak of disease in any of the countries in which we operate or sell our products;
- tariffs, other trade protection measures and import or export licensing requirements;
- potentially negative consequences from changes in U.S. and international tax laws;
- difficulty in staffing and managing geographically widespread operations;
- differing labor regulations;
- requirements relating to withholding taxes on remittances and other payments by subsidiaries;
- different regulatory regimes controlling the protection of our intellectual property;
- restrictions on our ability to own or operate subsidiaries, make investments or acquire new businesses in these jurisdictions;
- restrictions on our ability to repatriate dividends from our foreign subsidiaries;
- difficulty in collecting international accounts receivable;
- difficulty in enforcement of contractual obligations under non-U.S. law;
- transportation delays or interruptions;
- changes in regulatory requirements; and
- the burden of complying with multiple and potentially conflicting laws.

Our international operations and sales also expose us to different local political and business risks and challenges. For example, we are faced with potential difficulties in staffing and managing local operations and we have to design local solutions to manage credit and legal risks of local customers and distributors, which may not be effective. In addition, because some of our international sales are to suppliers that perform work for foreign governments, we are subject to the political risks

associated with foreign government projects. For example, certain foreign governments may require suppliers for a project to obtain products solely from local manufacturers or may prohibit the use of products manufactured in certain countries.

Our operations in markets such as China, Central and Eastern Europe, India, the Middle East and Latin America, may cause us difficulty due to greater regulatory barriers than in the United States, the necessity of adapting to new regulatory systems, problems related to entering new markets with different economic, social and political systems and conditions, and significant competition from the primary participants in these markets, some of which may have substantially greater resources than us. In addition, unstable political conditions or civil unrest, including political instability in Eastern Europe, the Middle East or elsewhere, could negatively impact our order levels and sales in a region or our ability to collect receivables from customers or operate or execute projects in a region.

Our international operations and transactions also depend upon favorable trade relations between the United States and those foreign countries in which our customers and suppliers have operations. A protectionist trade environment in either the United States or those foreign countries in which we do business or sell products, such as a change in the current tariff structures, export compliance, government subsidies or other trade policies, may adversely affect our ability to sell our products or do business in foreign markets. Our overall success as a global business depends, in part, upon our ability to succeed in differing economic, social and political conditions. We may not succeed in developing and implementing policies and strategies to counter the foregoing factors effectively in each location where we do business and the foregoing factors may cause a reduction in our sales, profitability or cash flows, or cause an increase in our liabilities.

If we lose our senior management or other key employees, our business may be adversely affected.

Our ability to successfully operate and grow our business and implement our strategies is largely dependent on the efforts, abilities and services of our senior management and other key employees. Our future success will also depend on, among other factors, our ability to attract and retain qualified personnel, such as engineers and other skilled labor, either through direct hiring or the acquisition of other businesses employing such professionals. Our products, many of which are highly engineered, represent specialized applications of cryogenic, low temperature or gas processing technologies and know-how, and many of the markets we serve represent niche markets for these specialized applications. Accordingly, we rely heavily on engineers, salespersons, business unit leaders, senior management and other key employees who have experience in these specialized applications and are knowledgeable about these niche markets, our products, and our company. Additionally, we may modify our management structure from time to time or substantially reduce our overall workforce as we have done during the recent downturn in our business, which may create marketing, operational and other business risks. The loss of the services of these senior managers or other key employees or the failure to attract or retain other qualified personnel could reduce the competitiveness of our business or otherwise impair our business prospects.

Our warranty reserves may not adequately cover our warranty obligations and increased or unexpected product warranty claims could adversely impact our financial condition and results of operations.

We provide product warranties with varying terms and durations for the majority of our products and we establish reserves for the estimated liability associated with our product warranties. Our warranty reserves are based on historical trends as well as our understanding of specifically identified warranty issues. The amounts estimated could differ materially from actual warranty costs that may ultimately be realized. An increase in the rate of warranty claims or the occurrence of unexpected warranty claims could have a material adverse effect on our financial condition or results of operations.

Increased IT security threats and more sophisticated and targeted computer crime could pose a risk to our systems, networks, products, solutions and services.

Increased global IT security threats and more sophisticated and targeted computer crime pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data. While we attempt to mitigate these risks by employing a number of measures, including employee training, comprehensive monitoring of our networks and systems, and maintenance of backup and protective systems, our systems, networks, products, solutions and services remain potentially vulnerable to advanced persistent threats. Depending on their nature and scope, such

threats could potentially lead to the compromising of confidential information, improper use of our systems and networks, manipulation and destruction of data, defective products, production downtimes and operational disruptions, which in turn could adversely affect our reputation, competitiveness and results of operations.

We are subject to potential insolvency or financial distress of third parties.

We are exposed to the risk that third parties to various arrangements who owe us money or goods and services, or who purchase goods and services from us, will not be able to perform their obligations or continue to place orders due to insolvency or financial distress. If third parties fail to perform their obligations under arrangements with us, we may be forced to replace

the underlying commitment at current or above market prices or on other terms that are less favorable to us or we may have to write off receivables in the case of customer failures to pay. If this happens, whether as a result of the insolvency or financial distress of a third party or otherwise, we may incur losses, or our results of operations, financial position or liquidity could otherwise be adversely affected.

Failure to protect our intellectual property and know-how could reduce or eliminate any competitive advantage and reduce our sales and profitability, and the cost of protecting our intellectual property may be significant.

We rely on a combination of internal procedures, nondisclosure agreements, intellectual property rights assignment agreements, as well as licenses, patents, trademarks and copyright law to protect our intellectual property and know-how. Our intellectual property rights may not be successfully asserted in the future or may be invalidated, circumvented or challenged. For example, we frequently explore and evaluate potential relationships and projects with other parties, which often require that we provide the potential partner with confidential technical information. While confidentiality agreements are typically put in place, there is a risk the potential partner could violate the confidentiality agreement and use our technical information for its own benefit or the benefit of others or compromise the confidentiality. In addition, the laws of certain foreign countries in which our products may be sold or manufactured do not protect our intellectual property rights to the same extent as the laws of the United States. In addition, certain provisions of the Leahy-Smith America Invents Act went into effect on March 16, 2013. The Leahy-Smith America Invents Act transitioned the United States from a “first-to-invent” to a “first-to-file” patent system. This change means that between two identical, pending patent applications, the first inventor no longer receives priority on the patent to the invention. As a result, the Leahy-Smith America Invents Act may require us to incur significant additional expense and effort to protect our intellectual property. Failure or inability to protect our proprietary information could result in a decrease in our sales or profitability.

We have obtained and applied for some U.S. and foreign trademark and patent registrations and will continue to evaluate the registration of additional trademarks and patents, as appropriate. We cannot guarantee that any of our pending applications will be approved. Moreover, even if the applications are approved, third parties may seek to oppose or otherwise challenge them. A failure to obtain registrations in the United States or elsewhere could limit our ability to protect our trademarks and technologies and could impede our business. Further, the protection of our intellectual property may require expensive investment in protracted litigation and the investment of substantial management time and there is no assurance we ultimately would prevail or that a successful outcome would lead to an economic benefit that is greater than the investment in the litigation. The patents in our patent portfolio are scheduled to expire between 2016 and 2036.

In addition, we may be unable to prevent third parties from using our intellectual property rights and know-how without our authorization or from independently developing intellectual property that is the same as or similar to ours, particularly in those countries where the laws do not protect our intellectual property rights as fully as in the United States. We compete in a number of industries (for example, heat exchangers and cryogenic storage) that are small or specialized, which makes it easier for a competitor to monitor our activities and increases the risk that ideas will be stolen. The unauthorized use of our know-how by third parties could reduce or eliminate any competitive advantage we have developed, cause us to lose sales or otherwise harm our business or increase our expenses as we attempt to enforce our rights.

Some of our products are subject to regulation by the U.S. Food and Drug Administration and other governmental authorities.

Some of our products are subject to regulation by the U.S. Food and Drug Administration and other national, supranational, federal and state governmental authorities. It can be costly and time consuming to obtain regulatory approvals to market a medical device, such as those sold by our BioMedical segment. Approvals might not be granted for new devices on a timely basis, if at all. Regulations are subject to change as a result of legislative, administrative or judicial action, which may further increase our costs or reduce sales. Our failure to maintain approvals or obtain approval for new products could adversely affect our business, results of operations, financial condition and cash flows.

In addition, we are subject to regulations covering manufacturing practices, product labeling, advertising and adverse-event reporting that apply after we have obtained approval to sell a product. Many of our facilities' procedures

and those of our suppliers are subject to ongoing oversight, including periodic inspection by governmental authorities. Compliance with production, safety, quality control and quality assurance regulations is costly and time-consuming, and while we seek to be in full compliance, noncompliance could arise from time to time. If we fail to comply, our operations, financial condition and cash flows could be adversely affected, including through the imposition of fines, costly remediation or plant shutdowns, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval as a result of noncompliance.

Fluctuations in the prices and availability of raw materials could negatively impact our financial results.

The pricing and availability of raw materials for use in our businesses can be volatile due to numerous factors beyond our control, including general, domestic and international economic conditions, labor costs, production levels, competition, consumer demand, import duties and tariffs and currency exchange rates. This volatility can significantly affect the availability and cost of raw materials for us, and may, therefore, increase the short-term or long-term costs of raw materials.

The commodity metals we use, including aluminum and stainless steel, have experienced significant fluctuations in price in recent years. On average, over half of our cost of sales for many of our product lines has historically been represented by the cost of commodities metals. We have generally been able to recover the cost increases through price increases to our customers; however, during periods of rising prices of raw materials, we may not always be able to pass increases on to our customers. Conversely, when raw material prices decline, customer demands for lower prices could result in lower sale prices and, to the extent we have existing inventory, lower margins. As a result, fluctuations in raw material prices could result in lower sales and profitability.

We may be required to make material expenditures in order to comply with environmental, health and safety laws and climate change regulations, or incur additional liabilities under these laws and regulations.

We are subject to numerous environmental, health and safety laws and regulations that impose various environmental controls on us or otherwise relate to environmental protection and various health and safety matters, including the discharge of pollutants in the air and water, the handling, use, treatment, storage and clean-up of solid and hazardous materials and wastes, the investigation and remediation of soil and groundwater affected by hazardous substances and the requirement to obtain and maintain permits and licenses. These laws and regulations often impose strict, retroactive and joint and several liability for the costs and damages resulting from cleaning up our or our predecessors' facilities and third party disposal sites. Compliance with these laws generally increases the costs of transportation and storage of raw materials and finished products, as well as the costs of storing and disposing waste, and could decrease our liquidity and profitability and increase our liabilities. Health and safety and other laws in the jurisdictions in which we operate impose various requirements on us including state licensing requirements that may benefit our customers. If we are found to have violated any of these laws, we may become subject to corrective action orders and fines or penalties, and incur substantial costs, including substantial remediation costs and commercial liability to our customers. Further, we also could be subject to future liability resulting from conditions that are currently unknown to us that could be discovered in the future.

We are currently remediating or developing work plans for remediation of environmental conditions involving certain current or former facilities. For example, the discovery of contamination arising from historical industrial operations at our Clarksville, Arkansas property, which is currently being leased to a third party business, has exposed us, and in the future may continue to expose us, to remediation obligations. We have also been subject to environmental liabilities for other sites where we formerly operated or at locations where we or our predecessors did or are alleged to have operated. To date, our environmental remediation expenditures and costs for otherwise complying with environmental laws and regulations have not been material, but the uncertainties associated with the investigation and remediation of contamination and the fact that such laws or regulations change frequently makes predicting the cost or impact of such laws and regulations on our future operations uncertain. Stricter environmental, safety and health laws, regulations or enforcement policies could result in substantial costs and liabilities to us and could subject us to more rigorous scrutiny. Consequently, compliance with these laws could result in significant expenditures as well as other costs and liabilities that could decrease our liquidity and profitability and increase our liabilities.

There is a growing political and scientific belief that emissions of greenhouse gases alter the composition of the global atmosphere in ways that are affecting the global climate. Various stakeholders, including legislators and regulators, stockholders and non-governmental organizations, as well as companies in many business sectors, are considering ways to reduce greenhouse gas emissions. New regulations could result in product standard requirements for the Company's global businesses but because any impact is dependent on the design of the mandate or standard, the Company is unable to predict its significance at this time. Furthermore, the potential physical impacts of theorized climate change on the Company's customers, and therefore on the Company's operations, are speculative and highly uncertain, and would be particular to the circumstances developing in various geographical regions. These may

include changes in weather patterns (including drought and rainfall levels), water availability, storm patterns and intensities, and temperature levels. These potential physical effects may adversely impact the cost, production, sales and financial performance of the Company's operations.



We may be subject to claims that our products or processes infringe the intellectual property rights of others, which may cause us to pay unexpected litigation costs or damages, modify our products or processes or prevent us from selling our products.

Although it is our intention to avoid infringing or otherwise violating the intellectual property rights of others, third parties may nevertheless claim (and in the past have claimed) that our processes and products infringe their intellectual property and other rights. For example, our BioMedical business manufactures products for relatively broad consumer use, is actively marketing these products in multiple jurisdictions internationally and risks infringing upon technologies that may be protected in one or more of these international jurisdictions as the scope of our international marketing efforts expands. Our strategies of capitalizing on growing international demand as well as developing new innovative products across multiple business lines present similar infringement claim risks both internationally and in the United States as we expand the scope of our product offerings and markets. We compete with other companies for contracts in some small or specialized industries, which increases the risk that the other companies will develop overlapping technologies leading to an increased possibility that infringement claims will arise. Whether or not these claims have merit, we may be subject to costly and time-consuming legal proceedings, and this could divert our management's attention from operating our businesses. In order to resolve such proceedings, we may need to obtain licenses from these third parties or substantially re-engineer or rename our products in order to avoid infringement. In addition, we might not be able to obtain the necessary licenses on acceptable terms, or at all, or be able to re-engineer or rename our products successfully.

Additional liabilities related to taxes could adversely impact our financial results, financial condition and cash flow. We are subject to tax and related obligations in the jurisdictions in which we operate or do business, including state, local, federal and foreign taxes. The taxing rules of the various jurisdictions in which we operate or do business often are complex and subject to varying interpretations. Tax authorities may challenge tax positions that we take or historically have taken, and may assess taxes where we have not made tax filings or may audit the tax filings we have made and assess additional taxes, as they have done from time to time in the past. Some of these assessments may be substantial, and also may involve the imposition of substantial penalties and interest. In addition, governments could impose new taxes on us in the future. The payment of substantial additional taxes, penalties or interest resulting from tax assessments, or the imposition of any new taxes, could materially and adversely impact our results of operations, financial condition and cash flow.

If we are unable to continue our technological innovation and successful introduction of new commercial products, our profitability could be adversely affected.

The industries we serve, including the energy, industrial gas, respiratory healthcare and life sciences industries, experience ongoing technological change and product improvement. Manufacturers periodically introduce new generations of products or require new technological capacity to develop customized products or respond to industry developments or needs. Our future growth will depend on our ability to gauge the direction of the commercial and technological progress in our markets, as well as our ability to acquire new product technologies or fund and successfully develop, manufacture and market products in this constantly changing environment. We must continue to identify, develop, manufacture and market innovative products on a timely basis to replace existing products in order to maintain our profit margins and competitive position. We may not be successful in acquiring and developing new products or technologies and any of our new products may not be accepted by our customers. If we fail to keep pace with evolving technological innovations in the markets we serve, our profitability may decrease.

Increases in labor costs, potential labor disputes and work stoppage could materially decrease our sales and profitability.

Our financial performance is affected by the availability of qualified personnel and the cost of labor. As of January 31, 2016, we had 4,266 employees, including 194 bargaining unit hourly employees. Employees represented by a union are subject to one collective bargaining agreement in the United States that expires in February 2018. We have experienced one work stoppage in 2007. Although we entered into a new labor agreement with our unionized employees at this facility effective February 3, 2013, if we are unable to enter into new, satisfactory labor agreements with our unionized employees when necessary in the future or other labor controversies or union organizing efforts arise, we could experience a significant disruption to our operations, lose business or experience an increase in our

operating expenses, which could reduce our profit margins. Furthermore, increased U.S. federal regulation or significant modifications to existing labor regulations, could potentially increase our labor costs. Increased government regulation could adversely affect our financial results, financial condition and cash flow. The Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”) institutes a wide range of reforms, some of which may impact us. Among other things, the Dodd-Frank Act contains significant corporate governance and executive compensation-related provisions that authorize or require the SEC to adopt additional rules and regulations in these

areas. The impact of these provisions on our business is uncertain. For example, the Dodd-Frank Act provides for statutory and regulatory requirements for derivative transactions, including foreign exchange and interest rate hedging transactions. We enter into foreign exchange contracts, interest rate swaps and forward contracts from time to time to manage our foreign currency exchange and interest rate risk, and exposure to commodity price risk. The Dodd-Frank Act includes extensive provisions regulating the derivatives market, and many of the regulations implementing the derivatives provisions have become effective and additional requirements are expected to become effective in the future. As such, we have become and could continue to become subject to additional regulatory costs, both directly and indirectly, through increased costs of doing business with market intermediaries that are now subject to extensive regulation pursuant to the Dodd-Frank Act. As the regulatory regime is still developing and additional regulations have not been finalized or fully implemented, the ultimate costs of Dodd-Frank and similar legislation on our business remain uncertain. However, such costs could be significant and have an adverse effect on our financial results, financial condition and cash flow.

Our pension plan is currently underfunded and we contribute to a multi-employer plan for collective bargaining U.S. employees, which is also underfunded.

Certain U.S. hourly and salaried employees are covered by our defined benefit pension plan. The plan has been frozen since February 2006. As of December 31, 2015, the projected benefit obligation under our pension plan was approximately \$58.3 million and the value of the assets of the plan was approximately \$41.0 million, resulting in our pension plan being underfunded by approximately \$17.3 million. We are also a participant in a multiemployer plan which is underfunded. Among other risks associated with multi-employer plans, contributions and unfunded obligations of the multi-employer plan are shared by the plan participants and we may inherit unfunded obligations if other plan participants withdraw from the plan or cease to participate. Additionally, if we elect to stop participating in the multi-employer plan, we may be required to pay amounts related to withdrawal liabilities associated with the underfunded status of the plan. If the performance of the assets in our pension plan or the multiemployer plan does not meet expectations or if other actuarial assumptions are modified, our required pension contributions for future years could be higher than we expect, which may negatively impact our results of operations, cash flows and financial condition.

We operate in many different jurisdictions and we could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar worldwide anti-corruption laws.

The U.S. Foreign Corrupt Practices Act (“FCPA”) and similar worldwide anti-corruption laws generally prohibit companies and their intermediaries from making improper payments for the purpose of obtaining or retaining business. Our internal policies mandate compliance with these anti-corruption laws. We operate in many parts of the world that have experienced corruption to some degree, and in certain circumstances, strict compliance with anti-corruption laws may conflict with local customs and practices. Despite our training and compliance programs, we cannot assure you that our internal control policies and procedures always will protect us from reckless or criminal acts committed by our employees or agents. Our continued expansion outside the U.S., including in developing countries, could increase the risk of such violations in the future. Violations of these laws, or allegations of such violations, could disrupt our business and result in a material adverse effect on our results of operations or financial condition.

Our operations could be impacted by the effects of severe weather, which could be more severe than the damage and impact that our Louisiana operations encountered from hurricanes in prior years.

Some of our operations, including our operations in New Iberia, Louisiana and Houston, Texas, are located in geographic regions and physical locations that are susceptible to physical damage and longer-term economic disruption from hurricanes or other severe weather. We also could make significant future capital expenditures in hurricane-susceptible or other severe weather locations from time to time. These weather events can disrupt our operations, result in damage to our properties and negatively affect the local economy in which these facilities operate. In September 2008, for example, our New Iberia, Louisiana facility was forced to close as a result of heavy rainfall, evacuations, strong winds and power outages resulting from Hurricane Gustav. Two weeks after Hurricane Gustav, winds and flooding from Hurricane Ike damaged our New Iberia, Louisiana, Houston, Texas and The Woodlands, Texas operations and offices, and those facilities were also closed for a period of time. Future hurricanes or other

severe weather may cause production or delivery delays as a result of the physical damage to the facilities, the unavailability of employees and temporary workers, the shortage of or delay in receiving certain raw materials or manufacturing supplies and the diminished availability or delay of transportation for customer shipments, any of which may have an adverse effect on our sales and profitability. Additionally, the potential physical impact of theorized climate change could include more frequent and intense storms, which would heighten the risk to our operations in areas that are susceptible to hurricanes and other severe weather. Although we maintain insurance subject to certain deductibles, which may cover some of our losses, that insurance may become unavailable or prove to be inadequate.

We are subject to regulations governing the export of our products.

Due to our significant foreign sales, our export activities are subject to regulation, including the U.S. Treasury Department's Office of Foreign Assets Control's regulations. We believe we are in compliance with these regulations and maintain robust programs intended to maintain compliance. However, unintentional lapses in our compliance or uncertainties associated with changing regulatory requirements could result in future violations (or alleged violations) of these regulations. Any violations may subject us to government scrutiny, investigation and civil and criminal penalties and may limit our ability to export our products.

As a provider of products to the U.S. government, we are subject to federal rules, regulations, audits and investigations, the violation or failure of which could adversely affect our business.

We sell certain of our products to the U.S. government and, therefore, we must comply with and are affected by laws and regulations governing purchases by the U.S. government. Government contract laws and regulations affect how we do business with our government customers and, in some instances, impose added costs on our business. For example, a violation of specific laws and regulations could result in the imposition of fines and penalties or the termination of our contracts or debarment from bidding on contracts. In some instances, these laws and regulations impose terms or rights that are more favorable to the government than those typically available to commercial parties in negotiated transactions.

Unanticipated changes in our effective tax rate could adversely affect our future results.

We are subject to income taxes in the United States and various foreign jurisdictions, and our domestic and international tax liabilities are subject to the allocation of expenses in differing jurisdictions. Our effective tax rate could be adversely affected by changes in the mix of earnings and losses in countries with differing statutory tax rates, certain non-deductible expenses arising from share based compensation, the valuation of deferred tax assets and liabilities and changes in federal, state or international tax laws and accounting principles. Increases in our effective tax rate could materially affect our net results. In addition, we are subject to income tax audits by many tax jurisdictions throughout the world. Although we believe our income tax liabilities are reasonably estimated and accounted for in accordance with applicable laws and principles, an adverse resolution of one or more uncertain tax positions in any period could have a material impact on the results of operations for that period.

#### Risks Related to Our Leverage

Our leverage and future debt service obligations could adversely affect our financial condition, limit our ability to raise additional capital to fund our operations, limit our ability to react to changes in the economy or our industry, impact the way we operate our business, expose us to interest rate risk to the extent of our variable rate debt and prevent us from fulfilling our debt service obligations.

We are leveraged and have future debt service obligations. Our financial performance could be affected by our leverage. As of December 31, 2015, our total indebtedness was \$256.2 million. In addition, at that date, under our senior secured revolving credit facility we had \$28.7 million of letters of credit and bank guarantees outstanding and borrowing capacity of approximately \$421.3 million. Through separate facilities, our subsidiaries had \$2.7 million in bank guarantees outstanding at December 31, 2015. While we had \$123.7 million in cash at December 31, 2015, which we believe mitigates the risk related to our leverage, there is no assurance that we will continue to be profitable in the future or that we will not use our available cash in ways other than those that reduce our leverage or mitigate the risk related to our leverage. We may also incur additional indebtedness in the future. Our level of indebtedness could have important negative consequences, including:

- we may have difficulty generating sufficient cash flow to pay interest and satisfy our debt obligations;
- we may have difficulty obtaining financing in the future for working capital, capital expenditures, acquisitions or other purposes;
- we may need to use a substantial portion of our available cash flow to pay interest and principal on our debt, which would reduce the amount of money available to finance our operations and other business activities;
- future borrowings under our senior secured revolving credit facility have variable rates of interest, which could expose us to the risk of increased interest rates;
- our debt level increases our vulnerability to general economic downturns and adverse industry conditions;

our debt level could limit our flexibility in planning for, or reacting to, changes in our business and in our industry in general;

our debt and the amount we must pay to service our debt obligations could place us at a competitive disadvantage compared to our competitors that have less debt;

our customers may react adversely to our debt level and seek or develop alternative suppliers; and

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our failure to comply with the financial and other restrictive covenants in our debt instruments which, among other things, require us to maintain specified financial ratios and limit our ability to incur debt and sell assets, could result in an event of default that, if not cured or waived, could have a material adverse effect on our business or prospects. Our business may not generate sufficient cash flow from operations and future borrowings may not be available to us under our senior secured revolving credit facility or otherwise in an amount sufficient to permit us to pay the principal and interest on our indebtedness or fund our other liquidity needs. In addition, borrowings under our senior secured revolving credit facility bear interest at variable rates. If market interest rates increase, debt service on our variable-rate debt will rise, which would adversely affect our cash flow. We may be unable to refinance any of our debt, including our senior secured revolving credit facility or our 2.00% Convertible Senior Subordinated Notes due 2018, on commercially reasonable terms. See Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources.”

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to sell assets, seek additional capital or seek to restructure or refinance our indebtedness. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. We may be unable to consummate those asset sales to raise capital or sell assets at prices that we believe are fair and proceeds that we do receive may be inadequate to meet any debt service obligations then due.

We may still be able to incur substantially more debt. This could further exacerbate the risks that we face.

We may be able to incur substantial additional indebtedness in the future. The terms of our debt instruments do not fully prohibit us from doing so. Our senior secured revolving credit facility provides commitments of up to \$450.0 million, approximately \$421.3 million of which would have been available for future borrowings (after giving effect to letters of credit and bank guarantees outstanding) as of December 31, 2015. See Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Debt Instruments and Related Covenants.” We may also further increase the size of our senior secured revolving credit facility which includes an expansion option permitting us to add up to an aggregate of \$200.0 million in additional borrowings, subject to certain conditions, or we could refinance with higher borrowing limits. If new debt is added to our current debt levels, the related risks that we now face could intensify.

The senior secured revolving credit facility contains a number of restrictive covenants which limit our ability to finance future operations or capital needs or engage in other business activities that may be in our interest.

The senior secured revolving credit facility imposes, and the terms of any future indebtedness may impose, operating and other restrictions on us and our subsidiaries. Such restrictions affect or will affect, and in various circumstances limit or prohibit, among other things, our ability and the ability of our subsidiaries to:

- incur additional indebtedness;
- create liens;
- pay dividends based on our leverage ratio and make other distributions in respect of our capital stock;
- redeem or buy back our capital stock based on our leverage ratio;
- make certain investments or certain other restricted payments;
- sell or transfer certain kinds of assets;
- enter into certain types of transactions with affiliates; and
- effect mergers or consolidations.

The senior secured revolving credit facility also requires us to achieve certain financial and operating results and maintain compliance with specified financial ratios. Our ability to comply with these ratios may be affected by events beyond our control.

The restrictions contained in the senior secured revolving credit facility could:

- limit our ability to plan for or react to market or economic conditions or meet capital needs or otherwise restrict our activities or business plans; and
- adversely affect our ability to finance our operations, acquisitions, investments or strategic alliances or other capital needs or to engage in other business activities that would be in our interest.

A breach of any of these covenants or our inability to comply with the required financial ratios could result in a default under our senior secured revolving credit facility. If an event of default occurs under our senior secured

revolving credit

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facility, which includes an event of default under the indenture governing our 2.00% Convertible Senior Subordinated Notes due 2018, the lenders could elect to:

• declare all borrowings outstanding, together with accrued and unpaid interest, to be immediately due and payable; or  
• require us to apply all of our available cash to repay the borrowings, either of which could result in an event of default under our convertible notes or prevent us from making payments on the convertible notes when due in 2018. The lenders will also have the right in these circumstances to terminate any commitments they have to provide further financing.

If we were unable to repay or otherwise refinance these borrowings when due, our lenders could sell the collateral securing the senior secured revolving credit facility, which constitutes substantially all of our and our domestic wholly-owned subsidiaries' assets.

Our 2.00% Convertible Senior Subordinated Notes due 2018 have certain fundamental change and conditional conversion features which, if triggered, may adversely affect our financial condition.

If a fundamental change occurs under our 2.00% Convertible Senior Subordinated Notes due 2018, the holders of the convertible notes may require us to purchase for cash any or all of the convertible notes. However, there can be no assurance that we will have sufficient funds at the time of the fundamental change to purchase all of the convertible notes delivered for purchase, and we may not be able to arrange necessary financing on acceptable terms, if at all. Likewise, if one of the conversion contingencies of our convertible notes is triggered, holders of convertible notes will be entitled to convert the convertible notes at any time during specified periods. For example, as a result of attaining specified market price triggers, the notes were convertible during several quarters in 2013, although no notes have been converted to date. If one or more holders elects to convert their convertible notes during such future specified periods, we would be required to settle any converted principal through the payment of cash, which could adversely affect our liquidity.

We are subject to counterparty risk with respect to the convertible note hedge and capped call transactions associated with our 2.00% Convertible Senior Subordinated Notes due 2018.

The option counterparties for our convertible note hedging arrangements are financial institutions, and we will be subject to the risk that any or all of them might default under the convertible note hedge and capped call transactions. Our exposure to the credit risk of the option counterparties is not secured by any collateral. Global economic conditions during the 2008-2009 economic downturn resulted in the actual or perceived failure or financial difficulties of many financial institutions. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under the convertible note hedge and capped call transactions with that option counterparty. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in the market price and in the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

We are a holding company and we may depend upon cash from our subsidiaries to service our debt. If we do not receive cash from our subsidiaries, we may be unable to meet our obligations.

We are a holding company and all of our operations are conducted through our subsidiaries. Accordingly, we may be dependent upon the earnings and cash flows from our subsidiaries to provide the funds necessary to meet our debt service obligations. If we could not have access to the cash flows of our subsidiaries, we may be unable to pay the principal or interest on our debt. In addition, certain of our subsidiaries are holding companies that rely on subsidiaries of their own as a source of funds to meet any obligations that might arise.

Generally, the ability of a subsidiary to make cash available to its parent is affected by its own operating results and is subject to applicable laws and contractual restrictions contained in its debt instruments and other agreements.

Moreover, there may be restrictions on payments by our subsidiaries to us under applicable laws, including laws that require companies to maintain minimum amounts of capital, to make payments to shareholders only from profits and restrictions on our ability to repatriate dividends from our foreign subsidiaries. As a result, although our subsidiaries may have cash, we may be unable to obtain that cash to satisfy our obligations and make payments to our stockholders, if any.



#### Risks Related to the Trading Market for Our Common Stock

Our common stock has experienced, and may continue to experience, price volatility.

Our common stock has at times experienced substantial price volatility as a result of many factors, including the general volatility of stock market prices and volumes, changes in securities analysts' estimates of our financial performance, variations between our actual and anticipated financial results, fluctuations in order or backlog levels, fluctuations in energy prices, or uncertainty about current global economic conditions. For these reasons, among others, the price of our stock may continue to fluctuate.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws and other agreements and in Delaware law may discourage a takeover attempt.

Provisions contained in our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law could make it more difficult for a third party to acquire us. Provisions of our amended and restated certificate of incorporation and amended and restated bylaws and Delaware law impose various procedural and other requirements, which could make it more difficult for stockholders to effect certain corporate actions. For example, our amended and restated certificate of incorporation authorizes our board of directors to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock, without any vote or action by our stockholders. Therefore, our board of directors can authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our common stock. These rights may have the effect of delaying or deterring a change of control of our company. These provisions could limit the price that certain investors might be willing to pay in the future for shares of our common stock.

In addition, the terms of our 2.00% Convertible Senior Subordinated Notes may require us to purchase these convertible notes for cash in the event of a takeover of our Company. The indenture governing the convertible notes also prohibits us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the convertible notes. These and other provisions applicable to the convertible notes may have the effect of increasing the cost of acquiring us or otherwise discourage a third party from acquiring us. The issuance of common stock upon conversion of our 2.00% Convertible Senior Subordinated Notes due 2018 could cause dilution to the interests of our existing stockholders.

As of December 31, 2015, we had \$250.0 million aggregate principal amount of convertible notes outstanding. Prior to the close of business on the business day immediately preceding May 1, 2018, the convertible notes will be convertible only upon satisfaction of certain conditions. As a result of attaining specified market price triggers, the notes were convertible during several quarters in 2013, although no notes have been converted to date. Holders may convert their convertible notes at their option at any time after May 1, 2018. We will settle conversions of convertible notes by paying cash up to the aggregate principal amount of the convertible notes to be converted and paying or delivering, as the case may be, cash, shares of our common stock, or a combination of cash and shares of our common stock, at our election, in respect of the remainder, if any, of our conversion obligation in excess of the aggregate principal amount of the notes being converted. The number of shares issued could be significant and such an issuance could cause significant dilution to the interests of the existing stockholders.

#### Item 1B. Unresolved Staff Comments

Not applicable.

## Item 2. Properties

We occupy 43 facilities among the locations listed below totaling approximately 4.4 million square feet, with the majority devoted to manufacturing, assembly and storage. Of these facilities, approximately 3.4 million square feet are owned and 1.0 million square feet are occupied under operating leases. We lease approximately 32,800 square feet for our corporate office in Garfield Heights, Ohio. Our major owned facilities in the United States are subject to mortgages securing our senior secured revolving credit facility.

The following table summarizes certain information about facilities occupied by us as of January 31, 2016:

Location	Segment	Approximate Square Footage	Ownership	Use
Garfield Heights, Ohio	Corporate	32,800	Leased	Office
Luxembourg, Luxembourg	Corporate	1,200	Leased	Office
Aichi, Japan	BioMedical	8,900	Leased	Service
Amherst, New York	BioMedical	150,100	Leased/Owned	Manufacturing/Warehouse/Office
Chengdu, China	BioMedical	176,000	Owned	Manufacturing/Office
Lidcombe, Australia	BioMedical	2,400	Leased	Office/Warehouse
Padova, Italy	BioMedical	11,800	Leased	Service
San Diego, California	BioMedical	24,500	Leased	Manufacturing/Office
Tokyo, Japan	BioMedical	1,600	Leased	Office
Troy, New York	BioMedical	12,000	Leased	Manufacturing/Office
Wokingham, United Kingdom	BioMedical	7,200	Leased	Office/Warehouse/Service
Wuppertal, Germany	BioMedical	104,900	Leased	Office/Warehouse/Service
Decin, Czech Republic	Distribution & Storage	628,000	Owned	Manufacturing/Office
Goch, Germany	Distribution & Storage	258,000	Owned	Manufacturing/Office
Houston, Texas	Storage/Energy & Chemicals	28,900	Leased/Owned	Office/Service
Kuala Lumpur, Malaysia	Distribution & Storage	2,500	Leased	Marketing & Sales/Office
McCarran, Nevada	Distribution & Storage	42,300	Owned	Service
Mumbai, India	Distribution & Storage	100	Leased	Office
Nanjing, China	Distribution & Storage	39,700	Leased/Owned	Manufacturing/Office
Salem, New Hampshire	Distribution & Storage	1,300	Leased	Office
Solingen, Germany	Distribution & Storage	16,000	Leased	Manufacturing/Office/Service/Warehouse
Fremont, California	Distribution & Storage	19,600	Leased	Manufacturing/Office
Pershore, United Kingdom	Distribution & Storage	2,800	Leased	Office/Warehouse
Bogota, Colombia	Distribution & Storage	500	Leased	Office
East Java, Indonesia	Distribution & Storage	6,800	Leased	Manufacturing/Office
Canton, Georgia	Distribution & Storage/BioMedical	273,300	Leased/Owned	Manufacturing/Office/Service
		395,200	Leased/Owned	Manufacturing/Office/Service

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New Prague, Minnesota	Distribution & Storage/BioMedical			
North Dartmouth, Massachusetts	Distribution & Storage	9,600	Owned	Office
Changzhou, China	Distribution & Storage	1,228,500	Owned	Manufacturing/Office
La Crosse, Wisconsin	Energy & Chemicals	296,000	Leased/Owned	Manufacturing/Office
New Iberia, Louisiana	Energy & Chemicals	108,700	Leased	Manufacturing
The Woodlands, Texas	Energy & Chemicals	33,500	Leased	Office
Tulsa, Oklahoma	Energy & Chemicals	222,800	Leased/Owned	Manufacturing/Office
Wolverhampton, United Kingdom	Energy & Chemicals	1,600	Leased	Office
Wuxi, China	Energy & Chemicals	200,000	Leased	Manufacturing/Office

In addition, we own a 110,000 square foot facility in Clarksville, Arkansas that is leased from the Company. The table above excludes leased facilities covering approximately 151,100 square feet that have been closed.

#### Regulatory Environment

We are subject to federal, state and local regulations relating to the discharge of materials into the environment, production and handling of hazardous and regulated materials, and the conduct and condition of our production facilities. We do not believe that these regulatory requirements have had a material effect upon our capital expenditures, earnings or competitive position. We are not anticipating any material capital expenditures in 2016 that are directly related to regulatory compliance matters. We are also not aware of any pending or potential regulatory changes that would have a material adverse impact on our business.

Item 3. Legal Proceedings

Chart Energy & Chemicals, Inc., a subsidiary of the Company, was involved in litigation with Enogex Holdings LLC, Enogex Gathering & Processing, LLC and affiliated companies with respect to a December 2010 fire at the Enogex natural gas processing plant in Cox City, Oklahoma. This matter was amicably resolved in October 2015 with no material effect on the Company's financial position, results of operations, or cash flows.

We are occasionally subject to various legal claims related to performance under contracts, product liability, environmental liability, taxes, employment, intellectual property and other matters, several of which claims assert substantial damages, in the ordinary course of our business. Based on the Company's historical experience in litigating these claims, as well as the Company's current assessment of the underlying merits of the claims and applicable insurance, if any, we believe the resolution of these legal claims will not have a material adverse effect on our financial position, liquidity, cash flows or results of operations. Future developments may, however, result in resolution of these legal claims in a way that could have a material adverse effect. See Item 1A. "Risk Factors."

Item 4. Mine Safety Disclosures

Not applicable.

Item 4A. Executive Officers of the Registrant\*

The name, age and positions of each Executive Officer of the Company as of February 1, 2016 are as follows:

Name	Age	Position
Samuel F. Thomas	64	Chairman, Chief Executive Officer and President
Michael F. Biehl	60	Executive Vice President and Chief Financial Officer
Matthew J. Klaben	46	Vice President, General Counsel and Secretary
Kenneth J. Webster	53	Vice President, Chief Accounting Officer and Controller

\* Included pursuant to Instruction 3 to Item 401(b) of Regulation S-K.

Samuel F. Thomas has served as Chairman of our Board of Directors since March 2007 and has served as our Chief Executive Officer and President and as a member of our Board of Directors since October 2003. Prior to joining our Company, Mr. Thomas was Executive Vice President of Global Consumables at ESAB Holdings Ltd., a provider of welding consumables and equipment. In addition to his most recent position at ESAB, Mr. Thomas was responsible for ESAB North America during his employment at ESAB Holdings Ltd. Prior to joining ESAB in February 1999, Mr. Thomas was Vice President of Friction Products for Federal Mogul, Inc. Prior to its acquisition by Federal Mogul in 1998, Mr. Thomas was employed by T&N plc from 1976 to 1998, where he served from 1991 as chief executive of several global operating divisions, including industrial sealing, camshafts and friction products. Mr. Thomas also serves on the board of Lumentum Holdings Inc.

Michael F. Biehl has been our Executive Vice President since April 2006, served as our Chief Accounting Officer from October 2002 until March 2006, and has been our Chief Financial Officer since July 2001. Until December 16, 2008, Mr. Biehl was also Chart's Treasurer and remained Treasurer from August 2010 through May 2014. Prior to joining us, Mr. Biehl served as Vice President, Finance and Treasurer at the former Oglebay Norton Company, an industrial minerals mining, processing and transportation company. Prior to joining Oglebay Norton in 1992, Mr. Biehl worked in the audit practice of Ernst & Young LLP in Cleveland, Ohio from 1978 to 1992.

Matthew J. Klaben is our Vice President, General Counsel and Secretary. Prior to joining us in March 2006, Mr. Klaben was a partner at the law firm of Calfee, Halter & Griswold LLP in Cleveland, Ohio from January 2005 until March 2006, and an associate from April 1998 until December 2004. Before that, Mr. Klaben was an associate at the law firm of Jones Day in Cleveland, Ohio from September 1995 until April 1998.

Kenneth J. Webster is our Vice President, Chief Accounting Officer and Controller and has served in that capacity since May 2010. Prior to that, Mr. Webster was Chief Accounting Officer and Controller since March 2008.

Mr. Webster joined the Company in July 2006 as the Company's Director of Internal Audit. Prior to joining Chart, Mr. Webster served as Assistant Corporate Controller for International Steel Group, an integrated steel manufacturer, from March 2004 to April 2005, at which time International Steel Group was acquired by Mittal Steel USA, Inc.

Following the acquisition, Mr. Webster continued to serve in his capacity as Assistant Corporate Controller for Mittal Steel USA, Inc. until July 2006. Before that, Mr. Webster served in various accounting and finance positions with Bethlehem Steel.

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## PART II

## Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

The Company's common stock is traded on the NASDAQ Global Select Market under the symbol "GTLS." The high and low sales prices for the shares of common stock for the periods indicated are set forth in the table below:

	High and Low Sales Price			
	2015		2014	
	High	Low	High	Low
First quarter	\$39.93	\$27.34	\$95.99	\$74.07
Second quarter	45.62	31.61	84.94	64.05
Third quarter	38.10	17.22	84.25	61.00
Fourth quarter	24.48	15.08	59.29	30.61
Year	45.62	15.08	95.99	30.61

As of February 1, 2016, there were 177 holders of record of our common stock. Since many holders hold shares in "street name," we believe that there are a significantly larger number of beneficial owners of our common stock than the number of record holders.

We do not currently intend to pay any cash dividends on our common stock, and instead intend to retain earnings, if any, for future operations, potential acquisitions and debt reduction. The amounts available to us to pay future cash dividends may be restricted by our senior secured revolving credit facility to the extent our pro forma leverage ratio exceeds certain targets. Any decision to declare and pay dividends in the future will be made at the discretion of our board of directors and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our board of directors may deem relevant.



## Cumulative Total Return Comparison

Set forth below is a line graph comparing the cumulative total return of a hypothetical investment in the shares of common stock of Chart Industries, Inc. with the cumulative return of a hypothetical investment in each of the S&P SmallCap 600 Index, the 2014 Peer Group Index, and our new Peer Group Index based on the respective market prices of each such investment on the dates shown below, assuming an initial investment of \$100 on December 31, 2010, including reinvestment of dividends, if any.

	December 31,					
	2010	2011	2012	2013	2014	2015
Chart Industries, Inc.	\$ 100.00	\$ 160.07	\$ 197.42	\$ 283.13	\$ 101.24	\$ 53.17
S&P SmallCap 600 Index	100.00	101.02	117.51	166.05	175.61	172.15
2014 Peer Group Index	100.00	95.38	124.29	162.64	144.07	126.64
2015 Peer Group Index	100.00	95.16	125.38	166.03	145.52	128.96

The Company selects the peer companies that comprise the Peer Group Index solely on the basis of objective criteria. These criteria result in an index composed of oil field equipment/service and other comparable industrial companies. We modified our Peer Group Index this year since the prior Peer Group Index (“2014 Peer Group”) included one company that was acquired during 2015. The updated Peer Group Index (“2015 Peer Group”) includes the following companies from the 2014 Peer Group: Acuity Brands, Inc., Barnes Group Inc., Circor International, Inc., Colfax Corp., Enpro Industries Inc., Ensco plc, Esco Technologies Inc., Graco Inc., IDEX Corp., Nordson Corporation and Powell Industries Inc., as well as the following additional company which has a similar industrial manufacturing profile and serves similar industries as the Company: Worthington Industries, Inc.

The 2014 Peer Group Index was comprised of Acuity Brands, Inc., Barnes Group Inc., Circor International, Inc., Colfax Corp., Dresser-Rand Group Inc., Enpro Industries Inc., Ensco plc, Esco Technologies Inc., Graco Inc., IDEX Corp., Nordson Corporation and Powell Industries Inc. In accordance with SEC rules, the both the 2014 Peer Group and 2015 Peer Group are represented in the graph above.

## Purchases of Equity Securities by the Issuer and Affiliated Purchasers

During the fourth quarter of 2015, 4,718 shares of common stock were surrendered to us by participants under our share-based compensation plans to satisfy tax withholding obligations relating to the vesting or payment of equity awards for an aggregate purchase price of approximately \$98,800. The total number of shares repurchased represents the net shares issued to satisfy tax withholding. All such repurchased shares were subsequently retired during the three months ended December 31, 2015.

## Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 — 31, 2015	4,058	\$21.31	—	\$—
November 1 — 30, 2015	11	19.16	—	—
December 1 — 31, 2015	649	18.67	—	—
Total	4,718	\$20.94	—	\$—

## Item 6. Selected Financial Data

The following table sets forth selected historical consolidated financial information as of the dates and for each of the periods indicated. The Company selected historical financial consolidated data as of and for the years ended December 31, 2015, 2014 and 2013 are derived from our audited financial statements for such periods incorporated by reference into Item 8 of this Annual Report on Form 10-K, which have been audited by Ernst & Young LLP. The Company selected historical financial consolidated data as of and for the years ended December 31, 2012 and 2011 are derived from our audited financial statements for such periods, which have been audited by Ernst & Young LLP, and which are not included in this Annual Report on Form 10-K.

You should read the following table together with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, included elsewhere in this Annual Report on Form 10-K (all dollar amounts, except per share data, in thousands):

	Year Ended December 31,				
	2015	2014	2013	2012	2011
<b>Statements of Operations Data:</b>					
Sales	\$1,040,160	\$1,192,952	\$1,177,438	\$1,014,152	\$794,585
Cost of sales <sup>(1)</sup>	751,696	835,098	825,715	708,989	549,139
Gross profit	288,464	357,854	351,723	305,163	245,446
Operating expenses <sup>(2)</sup>	\$218,127	\$219,697	\$215,726	\$180,280	\$155,452
Asset impairments <sup>(3)</sup>	253,560	—	—	3,070	—
Operating (loss) income	(183,223 )	138,157	135,997	121,813	89,994
Interest expense, net (including deferred financing costs amortization) <sup>(4)</sup>	17,261	18,023	17,581	17,209	27,754
Other expense (income)	1,348	970	(242 )	1,498	(734 )
Other expense, net	18,609	18,993	17,339	18,707	27,020
(Loss) income before income taxes	(201,832 )	119,164	118,658	103,106	62,974
Income tax expense, net	2,684	36,092	31,296	30,782	18,730
Net (loss) income	(204,516 )	83,072	87,362	72,324	44,244
Noncontrolling interests, net of taxes	(1,556 )	1,208	4,186	1,029	168
Net (loss) income attributable to Chart Industries, Inc.	\$(202,960 )	\$81,864	\$83,176	\$71,295	\$44,076
<b>Earnings Per Share Data:</b>					
Basic (loss) earnings per share	\$(6.66 )	\$2.69	\$2.75	\$2.39	\$1.51
Diluted (loss) earnings per share <sup>(5)</sup>	\$(6.66 )	\$2.67	\$2.60	\$2.36	\$1.47
Weighted-average shares — basic	30,493	30,384	30,209	29,786	29,165
Weighted-average shares — diluted	30,493	30,666	31,931	30,194	29,913
<b>Cash Flow Data:</b>					
Cash provided by operating activities	\$101,989	\$118,717	\$59,663	\$87,641	\$81,658
Cash used in investing activities	(73,524 )	(72,485 )	(74,981 )	(224,347 )	(59,672 )
Cash (used in) provided by financing activities	(608 )	(70,793 )	8,107	17,441	67,711
<b>Other Financial Data:</b>					
Depreciation and amortization <sup>(6)</sup>	\$46,738	\$44,568	\$41,695	\$33,726	\$32,298



	As of December 31,				
	2015	2014	2013	2012	2011
Balance Sheet Data:					
Cash and cash equivalents	\$ 123,708	\$ 103,656	\$ 137,345	\$ 141,498	\$ 256,861
Working capital <sup>(7)</sup>	207,643	218,092	213,261	144,901	86,533
Goodwill <sup>(3)</sup>	218,390	405,522	398,905	398,941	288,770
Identifiable intangible assets, net <sup>(3)</sup>	106,714	153,666	172,142	189,463	140,553
Total assets <sup>(3)</sup>	1,201,976	1,462,063	1,461,630	1,327,841	1,174,475
Long-term debt	215,634	204,099	64,688	252,021	223,224
Total debt	221,794	209,022	265,155	255,771	234,482
Chart Industries, Inc. shareholders' equity <sup>(3)</sup>	670,592	879,879	754,785	696,478	611,039

(1) Includes recovery of \$5.0 million reducing cost of sales for the year ended December 31, 2014 from an escrow settlement for breaches of representations and warranties relating to warranty costs (which are in excess of the settlement amount) for certain product lines acquired from AirSep Corporation ("AirSep") in 2012. We continue to pursue recovery for breaches of representations and warranties related to warranty costs for certain product lines acquired from AirSep in 2012 under our representation and warranty insurance coverage that exists from the acquisition.

(2) Operating expenses include selling, general and administrative expenses, amortization expense, and loss on disposal of assets. Amortization expense related to intangible assets for the years ended December 31, 2015, 2014, 2013, 2012 and 2011 was \$17.3 million, \$17.9 million, \$19.2 million, \$14.8 million and \$13.4 million, respectively. Also includes a \$4.6 million reduction of expense associated with writing down acquisition related contingent consideration to fair value for the year ended December 31, 2012.

(3) See Note 3, Asset Impairments, in the consolidated financial statements.

(4) Includes \$3.0 million for the write-off of the remaining deferred financing fees and \$5.0 million for the early redemption premium related to the 9-1/8% Senior Subordinated Notes that were redeemed in October 2011 for the year ended December 31, 2011.

(5) Zero incremental shares from share-based awards are included in the computation of diluted net loss per share for periods in which a net loss occurs, because to do so would be anti-dilutive.

(6) Includes financing costs amortization for the years ended December 31, 2015, 2014, 2013, 2012 and 2011 of \$1.3 million, \$1.4 million, \$1.3 million, \$1.5 million, and \$4.4 million, respectively. For the year ended December 31, 2011, financing costs amortization included \$3.0 million to write-off remaining deferred financing fees related to the redemption of the 9-1/8% Senior Subordinated Notes.

(7) Working capital is defined as current assets excluding cash and cash equivalents minus current liabilities excluding short-term debt and current portion of long-term debt (including current convertible notes, if applicable).

## Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion of our results of operations and financial condition in conjunction with the "Selected Financial Data" section and our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements. Actual results may differ materially from those discussed below. See "Forward-Looking Statements" at the end of this discussion and Item 1A. "Risk Factors" for a discussion of the uncertainties, risks and assumptions associated with this discussion.

### Overview

We are a leading diversified global manufacturer of highly engineered equipment for the industrial gas, energy and biomedical industries. The largest portion of end-use applications for our products is energy-related. Our equipment and engineered systems are primarily used for low-temperature and cryogenic applications utilizing our expertise in cryogenic systems and equipment, which operate at low temperatures sometimes approaching absolute zero (0 kelvin; -273° Centigrade; -459° Fahrenheit).

Sales for the year ended December 31, 2015 were \$1,040.2 million compared to sales of \$1,193.0 million for the year ended December 31, 2014, reflecting a decrease of \$152.8 million, or 12.8%. This decrease was mainly attributable to 1) a significant drop in energy prices for markets the Company serves, 2) a decrease in liquefied natural gas ("LNG") applications within our D&S segment, 3) lower sales in our E&C segment across all product lines, and 4) the strength of the U.S. dollar, which had a negative impact on the results of our European operations when reporting in U.S. dollars in both our D&S and BioMedical segments. The overall negative currency translation impact on sales was approximately \$31.8 million on a constant currency basis. Gross profit for the year ended December 31, 2015 was \$288.5 million, or 27.7% of sales, as compared to \$357.9 million, or 30.0% of sales, for the year ended December 31, 2014. Gross profit decreased during the period mainly as a result of decreased volume related to LNG applications within our D&S segment. The related margin percentage decreased mainly due to product mix within our D&S segment as well as higher restructuring-related costs due to cost reduction initiatives, including facility closures and reductions in headcount. We recorded asset impairments of \$253.6 million during the fourth quarter of 2015 primarily with respect to the BioMedical and Energy & Chemicals segments. The drop in our market capitalization along with the macroeconomic trends described below with respect to energy prices, order trends, and weakness in China, and in the BioMedical respiratory markets, led to reductions in our forecasts resulting in the non-cash impairment charges. See Note 3 to the accompanying financial statements for further information on the impairment charges for 2015. Operating loss for the year ended December 31, 2015 was \$183.2 million compared to operating income of \$138.2 million for the year ended December 31, 2014, mainly for the reasons discussed above.

As previously disclosed, low energy prices continue to delay LNG conversions and LNG-related opportunities, which has negatively impacted our sales and order trends this year. In addition, macroeconomic headwinds and global competition continue to put pressure on pricing generally, and the long-term impact of Medicare competitive bidding, including the reduction of reimbursement rates, will continue to impact BioMedical respiratory. Due to the uncertainty surrounding the price of oil and its impact on natural gas projects and our business, we continue to face challenges in the timing of orders. Beginning in the fourth quarter of 2014 and throughout 2015, we implemented a number of cost reduction or avoidance actions, including headcount reductions and facility closures. These actions equate to annualized savings of approximately \$60 million and resulted in \$7.4 million in severance and \$4.8 million in facility shutdown costs during 2015. We closely monitor our end markets and order rates and will take additional appropriate and timely actions as necessary. Accordingly, 2016 will present significant operational performance challenges, particularly in our Energy & Chemicals business, given low energy prices, continued weakness in China, and strength in the U.S. dollar. We expect additional severance costs in 2016 to be approximately \$3.2 million for actions already implemented.



## Operating Results

The following table sets forth the percentage relationship that each line item in our consolidated statements of operations represents to sales for the years ended December 31, 2015, 2014 and 2013:

	2015	2014	2013	
Sales	100.0	% 100.0	% 100.0	%
Cost of sales <sup>(1) (2)</sup>	72.3	70.0	70.1	
Gross profit	27.7	30.0	29.9	
Selling, general and administrative expense <sup>(3) (4)</sup>	19.3	16.9	16.7	
Amortization expense	1.7	1.5	1.6	
Asset impairments	24.4	—	—	
Operating (loss) income	(17.6	) 11.6	11.6	
Interest expense, net <sup>(5)</sup>	1.5	1.4	1.4	
Amortization of deferred financing costs	0.1	0.1	0.1	
Foreign currency loss (gain)	0.1	0.1	—	
Income tax expense, net	0.3	3.0	2.7	
Net (loss) income	(19.7	) 7.0	7.4	
Noncontrolling interests, net of taxes	(0.1	) 0.1	0.4	
Net (loss) income attributable to Chart Industries, Inc.	(19.5	) 6.9	7.1	

(1) Includes inventory reserves of \$5.6 million related to LNG inventory in China, and property, plant and equipment asset impairment charges of \$1.6 million for the year ended December 31, 2015.

Includes recovery of \$5.0 million reducing cost of sales for the year ended December 31, 2014 from an escrow settlement for breaches of representations and warranties relating to warranty costs (which are in excess of the

(2) settlement amount) for certain product lines acquired from AirSep in 2012. We continue to pursue recovery for breaches of representations and warranties related to warranty costs for certain product lines acquired from AirSep in 2012 under our representation and warranty insurance coverage that exists from the acquisition.

(3) Includes facility shutdown costs, restructuring costs and severance of \$8.6 million for the year ended December 31, 2015.

(4) Includes share-based compensation expense of \$11.3 million, \$9.4 million and \$10.0 million, representing 1.1%, 0.8% and 0.8% of sales, for the years ended December 31, 2015, 2014 and 2013, respectively.

(5) Includes \$11.5 million, \$10.7 million and \$9.9 million of non-cash interest accretion expense related to the carrying amount of the 2.0% Convertible Senior Subordinated Notes due 2018 (the "Convertible Notes"), representing 1.1%, 0.9% and 0.8% of sales, for the years ended December 31, 2015, 2014 and 2013, respectively.



## Segment Information

Certain consolidated results for our operating segments are presented below (all dollar amounts in thousands). Further detailed information regarding our operating segments is presented in Note 19 of the consolidated financial statements included elsewhere in this report.

	Year Ended December 31,			
	2015	2014	2013	
Sales				
Energy & Chemicals	\$330,968	\$388,018	\$318,510	
Distribution & Storage	487,557	578,806	592,616	
BioMedical	221,635	226,128	266,312	
Consolidated	\$1,040,160	\$1,192,952	\$1,177,438	
Gross Profit				
Energy & Chemicals	\$94,605	\$113,932	\$89,125	
Distribution & Storage	123,454	162,191	168,505	
BioMedical	70,405	81,731	94,093	
Consolidated	\$288,464	\$357,854	\$351,723	
Gross Profit Margin				
Energy & Chemicals	28.6	% 29.4	% 28.0	%
Distribution & Storage	25.3	% 28.0	% 28.4	%
BioMedical	31.8	% 36.1	% 35.3	%
Consolidated	27.7	% 30.0	% 29.9	%
SG&A Expenses				
Energy & Chemicals	\$31,189	\$31,776	\$26,358	
Distribution & Storage	75,069	71,809	69,807	
BioMedical	41,820	45,752	50,058	
Corporate	52,716	52,415	50,273	
Consolidated	\$200,794	\$201,752	\$196,496	
SG&A Expenses (% of Sales)				
Energy & Chemicals	9.4	% 8.2	% 8.3	%
Distribution & Storage	15.4	% 12.4	% 11.8	%
BioMedical	18.9	% 20.2	% 18.8	%
Consolidated	19.3	% 16.9	% 16.7	%
Operating (Loss) Income <sup>(1)</sup>				
Energy & Chemicals	\$(8,138)	) \$79,665	\$59,671	
Distribution & Storage	41,732	) 85,213	93,560	
BioMedical	(164,284)	) 25,694	33,039	
Corporate	(52,533)	) (52,415)	) (50,273)	)
Consolidated	\$(183,223)	) \$138,157	\$135,997	
Operating Margin <sup>(1)</sup>				
Energy & Chemicals	(2.5)	)% 20.5	% 18.7	%
Distribution & Storage	8.6	% 14.7	% 15.8	%
BioMedical	(74.1)	)% 11.4	% 12.4	%
Consolidated	(17.6)	)% 11.6	% 11.6	%

(1) Includes asset impairment charges of \$255.1 million for the year ended December 31, 2015, attributed to E&C - \$68.8 million, D&S - \$2.0 million, and BioMedical - \$184.3 million.

## Results of Operations for the Year Ended December 31, 2015 Compared to the Year Ended December 31, 2014

### Sales

Sales for 2015 were \$1,040.2 million compared to \$1,193.0 million for 2014, reflecting a decrease of \$152.8 million, or 12.8%.

E&C segment sales decreased by \$57.0 million, or 14.7%, compared to the prior year. Within natural gas processing (including petrochemical) applications and industrial gas applications, sales decreased by \$27.8 million and \$21.4 million, respectively, due to decreased capital spending by our energy-related customers and highly competitive market conditions. Sales within LNG applications decreased by \$7.8 million as several major projects were completed during the year, which reduced revenue when compared to the twelve months ended December 31, 2014.

D&S segment sales decreased by \$91.3 million, or 15.8%, compared to the prior year, mainly attributable to a \$93.7 million decrease related to LNG applications globally, particularly in China. This was partially offset by an increase of \$2.4 million in industrial applications. Currency was also a factor that negatively impacted D&S sales. The overall currency translation impact on sales attributable to the D&S segment was approximately \$21.0 million unfavorable on a constant currency basis.

BioMedical segment sales decreased by \$4.5 million, or 2.0%, compared to the prior year. Currency and increased competition largely drove the \$9.0 million decrease in respiratory therapy equipment sales. This decrease was partially offset by a \$5.8 million increase in commercial oxygen generation systems. Sales within life sciences decreased by \$1.3 million during the year. The overall currency translation impact on sales attributable to the BioMedical segment was approximately \$10.8 million unfavorable on a constant currency basis.

### Gross Profit and Margin

Gross profit for 2015 was \$288.5 million, or 27.7% of sales compared to \$357.9 million, or 30.0% of sales, for 2014, which reflected a decrease of \$69.4 million, and the related margin percentage decreased by 2.3 percentage points.

E&C segment gross profit decreased by \$19.3 million mainly due to decreased volume within industrial gas and natural gas processing applications related to brazed aluminum heat exchangers, partially offset by improved volume and project mix related to air cooled heat exchangers and process systems. The related margin decreased by 0.8 percentage points mainly due to lower volume within brazed aluminum heat exchangers, partially offset by favorable project execution and cost reduction initiatives in all businesses.

D&S segment gross profit decreased by \$38.8 million, and the related margin decreased by 2.7 percentage points compared to the prior year mainly due to decreased volume in LNG applications globally, higher costs due to cost reduction initiatives, including the previously disclosed shutdown of the D&S manufacturing facility in Owatonna, Minnesota, severance associated with reductions in headcount, and increases in inventory reserves, primarily associated with inventories in China. Costs associated with facility shutdown, headcount reductions and inventory reserves impacted the D&S segment margin by 0.6 percentage points.

BioMedical segment gross profit decreased by \$11.3 million mainly due to lower volume in respiratory therapy equipment partially offset by higher volume in commercial oxygen generation systems. Margin decreased by 4.3 percentage points compared to the prior year mainly due to unfavorable product mix within respiratory therapy equipment and higher warranty costs. The BioMedical segment's warranty expense as a percent of sales was 4.1% and 3.8% during 2015 and 2014, respectively. We received \$5.0 million in the fourth quarter of 2014 under an escrow settlement for breaches of representations and warranties relating to warranty costs (which are in excess of the settlement amount) for certain product lines acquired from AirSep in 2012. This improved BioMedical segment margin by 2.2% in 2014. We continue to pursue recovery for breaches of representations and warranties related to warranty costs for certain product lines acquired from AirSep in 2012 under our representation and warranty insurance coverage that exists from the acquisition.

### Selling General & Administrative ("SG&A") Expenses

SG&A expenses for 2015 were \$200.8 million, or 19.3% of sales, compared to \$201.8 million, or 16.9% of sales, for 2014, representing a decrease of \$1.0 million. SG&A expenses relating to facility shutdown and headcount reductions were \$8.6 million during 2015. SG&A expenses relating to acquisition-related costs, and retention and severance costs were \$4.5 million during 2014. Excluding these costs, SG&A expenses were down \$5.2 million compared to the prior year, largely due to reduced discretionary spending.

E&C segment SG&A expenses decreased by \$0.6 million compared to the prior year mainly due to lower sales commissions, partially offset by higher variable short-term incentive compensation based on performance.

D&S segment SG&A expenses increased by \$3.3 million compared to the prior year mainly due to \$4.8 million in facility shutdown and severance costs due to headcount reductions, partially offset by lower variable short-term incentive compensation based on performance.

BioMedical segment SG&A expenses decreased by \$4.0 million compared to the prior year mainly due to lower acquisition-related and severance costs.

Corporate SG&A expenses increased by \$0.3 million compared to the prior year mainly due to a \$1.7 million increase in share-based compensation expense mainly due to acceleration of expense based on retirement eligibility provisions, as a greater mix of share-based awards satisfied these provisions during the first quarter of 2015, and also a \$1.3 million increase in severance costs related to cost reductions. These increases were partially offset by lower costs related to outside professional services and discretionary spending.

#### Asset Impairments

During 2015, we recorded asset impairment charges of \$253.6 million. The amounts are attributed to our operating segments as follows: E&C \$68.8 million, D&S \$0.5 million, and BioMedical \$184.3 million. See Note 3, Asset Impairments, to the accompanying financial statements for more information relating to asset impairments.

#### Operating (Loss) Income

As a result of the foregoing, operating loss for 2015 was \$183.2 million, or (17.6)% of sales compared to operating income of \$138.2 million, or 11.6% of sales, for the same period in 2014.

#### Interest Expense, Net and Financing Costs Amortization

Net interest expense for 2015 and 2014 was \$16.0 million and \$16.6 million, respectively. Interest expense for 2015 included \$5.0 million of 2.0% cash interest and \$11.5 million of non-cash interest accretion expense related to the carrying value of the Convertible Notes. For 2015 and 2014, financing costs amortization was \$1.3 million and \$1.4 million, respectively.

#### Foreign Currency Loss

For 2015 and 2014, foreign currency losses were \$1.3 million and \$1.0 million, respectively. Losses increased by \$0.3 million during 2015 due to exchange rate volatility, especially with respect to the Chinese yuan and the euro.

#### Income Tax Expense

Income tax expense of \$2.7 million and \$36.1 million for 2015 and 2014, respectively, represents taxes on both U.S. and foreign earnings at a combined effective income tax rate of (1.3)% and 30.3%, respectively. The change in rate from the prior year was primarily due to the \$67.3 million tax impact related to the impairment charges of \$253.6 million. Excluding impairment charges, the effective tax rate would have been 42.1%, which is higher than the prior year's effective tax rate due to the establishment of valuation allowances of \$4.7 million against net operating loss carryforwards as well as other deferred tax assets at some of our Chinese operations and an unfavorable mix of earnings in higher taxed jurisdictions.

#### Net (Loss) Income

As a result of the foregoing, net loss attributable to the Company during 2015 was \$203.0 million while net income was \$81.9 million during 2014.

#### Results of Operations for the Year Ended December 31, 2014 Compared to the Year Ended December 31, 2013

##### Sales

Sales for 2014 were \$1,193.0 million compared to \$1,177.4 million for 2013, reflecting an increase of \$15.6 million, or 1.3%.

E&C segment sales increased by \$69.5 million, or 21.8%, compared to the prior year. This increase in E&C segment sales was primarily due to improved volume in process systems related to small to mid-scale LNG liquefaction and petrochemical applications.

D&S segment sales decreased by \$13.8 million, or 2.3%, compared to the prior year. This decrease in D&S segment sales was mainly attributable to a shortfall in bulk industrial gas applications, which was partially offset by improved volume related to LNG applications and packaged industrial gas applications. From a geographic standpoint, shortfalls in China across all product lines were offset by improved volume in the U.S. and Europe despite a decline in the value of the euro.



BioMedical segment sales decreased by \$40.1 million, or 15.1%, compared to the prior year. This decrease in BioMedical segment sales was mainly due to lower sales of respiratory therapy equipment in the U.S. driven by customer consolidation and inventory rationalization in addition to currency, competitive pricing and AirSep concentrator warranty issues. Sales of commercial oxygen generation products were lower also as two large projects that accounted for approximately \$10.5 million in 2013 sales did not recur in 2014. This decrease was partially offset by an increase in BioMedical segment life science products.

#### Gross Profit and Margin

Gross profit for 2014 was \$357.9 million, or 30.0% of sales compared to \$351.7 million, or 29.9% of sales, for 2013, which reflected an increase of \$6.2 million, and the related margin percentage increased by 0.1 percentage points.

E&C segment gross profit increased by \$24.8 million and the related margin increased by 1.4 percentage points. The increase in gross profit and the related margin percentage for the E&C segment was primarily due to improved volume and favorable project change orders related to LNG applications.

Gross profit for the D&S segment decreased by \$6.3 million and margin decreased by 0.4 percentage points mainly due to lower volume in bulk industrial gas products and geographic mix.

BioMedical segment gross profit decreased by \$12.3 million while margin increased by 0.8 percentage points compared to the prior year. The decrease in BioMedical gross profit was primarily due to lower volume in respiratory therapy equipment and commercial oxygen generation products and higher warranty costs while the increase in the related margin percentage was mainly attributable to recovery from an escrow settlement, as discussed further below. During 2014, we experienced a higher rate of warranty claims in our BioMedical segment within the AirSep product lines. The increased claims and revisions to the estimated cost of warranty claims resulted in an adjustment to our estimated warranty reserve in the first quarter of 2014. This led to an increase in the BioMedical segment's warranty expense as a percent of BioMedical segment sales to 3.8% for 2014 compared to 2.9% in the prior year. We received \$5.0 million in the fourth quarter of 2014 under an escrow settlement for breaches of representations and warranties relating to warranty costs (which are in excess of the settlement amount) for certain product lines acquired from AirSep in 2012.

#### SG&A Expenses

SG&A expenses for 2014 were \$201.8 million, or 16.9% of sales, compared to \$196.5 million, or 16.7% of sales, for 2013; an increase of \$5.3 million.

SG&A expenses for the E&C segment increased by \$5.4 million compared to the prior year mainly due to higher variable short-term incentive compensation and higher commissions.

D&S segment SG&A expenses increased by \$2.0 million compared to the prior year mainly due to higher employee-related costs, partially offset by lower commissions and a reduction in variable short-term incentive compensation driven by lower than expected performance.

SG&A expenses for the BioMedical segment decreased by \$4.3 million compared to the prior year primarily due to lower commissions, lower employee-related costs due to restructuring, and a reduction in variable short-term incentive compensation driven by lower than expected performance.

Corporate SG&A expenses increased by \$2.2 million compared to the prior year primarily due to higher employee-related costs, partially offset by a reduction in variable short-term incentive compensation driven by lower than expected performance.

#### Amortization Expense

Amortization expense for 2014 was \$17.9 million, or 1.5% of sales compared to \$19.2 million, or 1.6% of sales, for 2013.

#### Operating Income

As a result of the foregoing, operating income for 2014 was \$138.2 million, or 11.6% of sales, an increase of \$2.2 million compared to operating income of \$136.0 million, or 11.6% of sales, for the same period in 2013.

#### Interest Expense, Net and Financing Costs Amortization

Net interest expense for 2014 and 2013 was \$16.6 million and \$16.3 million, respectively. Interest expense for 2014 included \$5.0 million of 2.0% cash interest and \$10.7 million of non-cash interest accretion expense related to the carrying value of the Convertible Notes. For 2014 and 2013, financing costs amortization was \$1.4 million and \$1.3

million, respectively.

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### Foreign Currency Loss

For 2014, foreign currency losses were \$1.0 million while foreign currency gains for 2013 were \$0.2 million. Losses increased by \$1.2 million during 2014 due to exchange rate volatility, especially with respect to the euro.

### Income Tax Expense

Income tax expense of \$36.1 million and \$31.3 million for 2014 and 2013, respectively, represents taxes on both U.S. and foreign earnings at a combined effective income tax rate of 30.3% and 26.4%, respectively. The increase in the effective tax rate for the year ended December 31, 2014 compared to the prior year was primarily due to a decrease in the mix of income earned by certain of the Company's foreign entities which are taxed at lower rates than the U.S. federal statutory rate, the reduction in total U.S. Research and Experimentation credits recognized in 2014, and non-deductible foreign exchange losses recognized by foreign subsidiaries using the U.S. dollar as their functional currency.

### Net Income

As a result of the foregoing, net income attributable to the Company for 2014 and 2013 was \$81.9 million and \$83.2 million, respectively.

### Orders and Backlog

We consider orders to be those for which we have received a firm signed purchase order or other written contractual commitment from the customer. Backlog is comprised of the portion of firm signed purchase orders or other written contractual commitments received from customers that we have not recognized as revenue upon shipment or under the percentage of completion method. Backlog can be significantly affected by the timing of orders for large projects, particularly in the E&C segment, and is not necessarily indicative of future backlog levels or the rate at which backlog will be recognized as sales. Orders included in our backlog may include customary cancellation provisions under which the customer could cancel part or all of the order, potentially subject to the payment of certain costs and/or fees. Our backlog as of December 31, 2015, 2014 and 2013 was \$374.6 million, \$640.1 million and \$728.8 million, respectively.

The table below represents orders received and backlog by segment for the periods indicated (dollar amounts in thousands):

	Year Ended December 31,		
	2015	2014	2013
Orders			
Energy & Chemicals	\$187,657	\$339,357	\$294,921
Distribution & Storage	529,080	591,765	719,589
BioMedical	218,090	218,125	256,073
Total	\$934,827	\$1,149,247	\$1,270,583
	As of December 31,		
	2015	2014	2013
Backlog			
Energy & Chemicals	\$151,638	\$294,204	\$342,466
Distribution & Storage	206,518	328,350	363,480
BioMedical	16,456	17,509	22,890
Total	\$374,612	\$640,063	\$728,836

Orders and Backlog for the Year Ended and As of December 31, 2015 Compared to the Year Ended and As of December 31, 2014

Orders for 2015 were \$934.8 million compared to \$1,149.2 million for 2014, representing a decrease of \$214.4 million, or 18.7%. In our 2014 Annual Report on Form 10-K, we reported orders of \$1,116.0 million for 2014, which was net of \$33.2 million of adjustments; this has been updated to conform to the current presentation.

E&C orders for 2015 were \$187.7 million compared to \$339.4 million for 2014, a decrease of \$151.7 million. Low energy prices continue to delay natural gas, petrochemical, and LNG-related opportunities, as evidenced by the decline in E&C order trends and backlog. Current market conditions reinforce a challenging outlook for LNG project



awards given the reduction in capital spending with our energy-related customers. E&C backlog totaled \$151.6 million at December 31, 2015,

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compared to \$294.2 million as of December 31, 2014. Order flow in the E&C segment is historically volatile due to project size and it is not unusual to see order intake change significantly year over year.

D&S orders for 2015 were \$529.1 million compared to \$591.8 million for 2014, a decrease of \$62.7 million, or 10.6%. The decrease in D&S segment orders and backlog year over year was driven primarily by the impact of lower energy prices and the continued economic slowdown in China. Approximately 23% of the D&S backlog related to China as of December 31, 2015, including approximately \$3.8 million related to PetroChina. D&S segment backlog was reduced \$150.0 million in 2015 related to previously received orders, primarily in China. While these orders have not been canceled, they have exceeded the expected time of performance and current circumstances suggest that our customers are not likely to take delivery in the future.

BioMedical orders were \$218.1 million during both 2015 and 2014. BioMedical backlog totaled \$16.5 million at December 31, 2015, compared to \$17.5 million as of December 31, 2014.

Orders and Backlog for the Year Ended and As of December 31, 2014 Compared to the Year Ended and As of December 31, 2013

Orders for 2014 were \$1,149.2 million compared to \$1,270.6 million for 2013, representing a decrease of \$121.4 million, or 9.6%.

E&C segment orders were \$339.4 million in 2014, an increase of \$44.5 million compared to 2013. Significant E&C orders for 2014 included several small to mid-scale LNG liquefaction plants within LNG applications. Orders related to natural gas processing plants also increased during the year.

D&S segment orders for 2014 were \$591.8 million compared to \$719.6 million for 2013, a decrease of \$127.8 million, or 17.8%. Approximately 28% of D&S backlog as of December 31, 2014 related to PetroChina. The decrease in D&S segment orders and backlog year over year was driven primarily by several factors. First, 2013 included two large orders for PetroChina in excess of \$95 million, which did not recur in 2014. Excluding PetroChina, D&S segment orders were down approximately \$61 million mainly for LNG applications, largely due to pending regulatory changes on certain product lines in China as well as the reduction in the price of diesel relative to natural gas in the U.S. In addition, backlog in the fourth quarter 2014 was reduced by approximately \$33 million to eliminate previously received orders, most of which were received prior to 2014 for applications in China, where circumstances indicated that the customer would not perform its obligations. In our 2014 Annual Report on Form 10-K we reported orders of \$558.6 million which was net of this adjustment; this has been updated to conform to the current presentation.

BioMedical segment orders for 2014 were \$218.1 million compared to orders of \$256.1 million for 2013. The \$38.0 million decrease in BioMedical segment orders year over year was mainly attributable to reduced demand for respiratory therapy equipment driven largely by customer consolidation and inventory rationalization. In addition, competitive pricing and AirSep concentrator warranty issues had an impact on BioMedical segment orders.

Liquidity and Capital Resources

Debt Instruments and Related Covenants

Convertible Notes: The outstanding aggregate principal amount of the Company's Convertible Notes is \$250.0 million. The Convertible Notes bear interest at a fixed rate of 2.0% per year, payable semiannually in arrears on February 1 and August 1 of each year, and will mature on August 1, 2018. The effective interest rate at issuance, under generally accepted accounting principles, was 7.9%. Upon conversion, holders of the Convertible Notes will receive cash up to the principal amount of the Convertible Notes, and it is the Company's intention to settle any excess conversion value in shares of the Company's common stock. However, the Company may elect to settle, at its discretion, any such excess value in cash, shares of the Company's common stock or a combination of cash and shares. The initial conversion price of \$69.03 per share represents a conversion premium of 30% over the last reported sale price of the Company's common stock on July 28, 2011, the date of the Convertible Notes offering, which was \$53.10 per share. At the end of the fourth quarter of 2015, events for early conversion were not met, and thus the Convertible Notes were not convertible as of, and for the fiscal quarter beginning January 1, 2016. There have been no conversions as of the date of this filing. In the event that holders of Convertible Notes elect to convert, the Company expects to fund any cash settlement of any such conversion from cash balances or borrowings under its senior secured revolving credit facility.

Senior Secured Revolving Credit Facility: The Company has a five-year \$450.0 million senior secured revolving credit facility (the "SSRCF") which matures on October 29, 2019. The SSRCF includes a \$25.0 million sub-limit for the issuance of swingline loans and a \$100.0 million sub-limit to be used for letters of credit. There is a foreign currency limit of \$100.0 million under the SSRCF which can be used for foreign currency denominated letters of credit and borrowings in a foreign

currency, in each case in currencies agreed upon with the lenders. In addition, the facility permits borrowings up to \$100.0 million made by the Company's wholly-owned subsidiaries, Chart Industries Luxembourg S.à r.l. ("Chart Luxembourg") and Chart Asia Investment Company Limited. The SSRCF also includes an expansion option permitting the Company to add up to an aggregate \$200.0 million in term loans or revolving credit commitments from its lenders. Loans under the SSRCF bear interest at LIBOR or the Adjusted Base Rate as defined in the Debt and Credit Arrangements note (Note 7) to our consolidated financial statements included elsewhere in this report, plus a margin that varies with the Company's leverage ratio. Significant financial covenants for the SSRCF include a leverage ratio and an interest coverage ratio. The Company had \$28.7 million in letters of credit and bank guarantees supported by the SSRCF, which had availability of \$421.3 million, at December 31, 2015. The Company was in compliance with all covenants, including its financial covenants, at December 31, 2015.

Foreign Facilities – China: Chart Cryogenic Engineering Systems (Changzhou) Company Limited ("CCEC"), Chart Energy & Chemicals Wuxi Co., Ltd. ("Wuxi") and Chart Biomedical (Chengdu) Co. Ltd. ("Chengdu"), wholly-owned subsidiaries of the Company, and Chart Cryogenic Distribution Equipment (Changzhou) Company Limited ("CCDEC"), a joint venture of the Company, maintain joint banking facilities (the "China Facilities") which include a revolving line with 50.0 million Chinese yuan (equivalent to \$7.7 million) in borrowing capacity which can be utilized for either revolving loans, bonds/guarantees, or bank draft acceptances. Any borrowings made by CCEC, CCDEC, Chengdu or Wuxi under the China Facilities are guaranteed by the Company. At December 31, 2015, there was 30.0 million Chinese yuan (equivalent to \$4.6 million) outstanding under the revolving line, bearing interest at 5.4% on a weighted-average basis, and CCEC, CCDEC and Wuxi had 4.7 million Chinese yuan (equivalent to \$0.7 million), 5.3 million Chinese yuan (equivalent to \$0.8 million) and 0.6 million Chinese yuan (equivalent to \$0.1 million) in bank guarantees, respectively.

CCDEC maintains a credit facility whereby CCDEC may borrow up to 40.0 million Chinese yuan (equivalent to \$6.2 million) for working capital purposes. This credit facility is effective until June 30, 2016. At December 31, 2015, there was 10.0 million Chinese yuan (equivalent to \$1.5 million) outstanding under this facility, bearing interest at 5.7%.

CCEC maintains a credit facility whereby CCEC may borrow up to 38.0 million Chinese yuan (equivalent to \$5.9 million) for working capital purposes. This credit facility is effective until July 5, 2016. There were no borrowings under this facility as of December 31, 2015.

CCEC maintains an unsecured credit facility whereby CCEC may borrow up to 30.0 million Chinese yuan (equivalent to \$4.6 million) for working capital and bank guarantee purposes. This credit facility is effective until June 30, 2016. There were no borrowings under this facility at December 31, 2015.

Foreign Facilities – Europe: Chart Ferox, a.s. ("Ferox"), a wholly-owned subsidiary of the Company, maintains two secured credit facilities with capacity of up to 175.0 million Czech koruna (equivalent to \$7.1 million). Both of the facilities allow Ferox to request bank guarantees and letters of credit. Neither of the facilities allows revolving credit borrowings. Under both facilities, Ferox must pay letter of credit and guarantee fees equal to 0.70% per annum on the face amount of each guarantee or letter of credit. Ferox's land and buildings secure the credit facilities. As of December 31, 2015, there were bank guarantees of 20.4 million Czech koruna (equivalent to \$0.8 million) supported by the Ferox credit facilities.

Chart Luxembourg maintains an overdraft facility with \$5.0 million in borrowing capacity. There were no borrowings under the Chart Luxembourg facility as of December 31, 2015.

Our debt and related covenants are further described in Note 7 to our consolidated financial statements included elsewhere in this report.

#### Sources and Uses of Cash

Our cash and cash equivalents totaled \$123.7 million as of December 31, 2015, an increase of \$20.0 million from the balance at December 31, 2014. Our foreign subsidiaries held cash of approximately \$71.9 million and \$82.9 million at December 31, 2015 and December 31, 2014, respectively, to meet their liquidity needs. No material restrictions exist in accessing cash held by our foreign subsidiaries. We expect to meet our U.S. funding needs without repatriating non-U.S. cash and incurring incremental U.S. taxes. Cash equivalents are invested in money market funds that invest in high quality, short-term instruments, such as U.S. government obligations, certificates of deposit, repurchase obligations and commercial paper issued by corporations that have been highly rated by at least one nationally

recognized rating organization. We believe that our existing cash and cash equivalents, funds available under our SSRCF and cash provided by operations will be sufficient to finance our normal working capital needs, acquisitions and investments in properties, facilities and equipment for the foreseeable future.

Years Ended December 31, 2015 and 2014

Cash provided by operating activities during 2015 and 2014 was \$102.0 million and \$118.7 million, respectively. The decrease in cash provided by operations was due to lower income from operations, partially offset by lower investment in working capital.

Cash used in investing activities was \$73.5 million and \$72.5 million during 2015 and 2014, respectively. Capital expenditures and payments for land use rights were \$47.0 million and \$11.0 million, respectively, during 2015, primarily for a D&S segment capacity expansion project in China for which we also received an \$8.7 million government grant. Also during 2015, we used \$24.5 million of cash relating to the Thermax Inc. ("Thermax") acquisition.

Cash used in financing activities during 2015 and 2014 was \$0.6 million and \$70.8 million, respectively. During 2015, we borrowed and repaid \$66.4 million on our SSRCF. We also borrowed 15.0 million Chinese yuan (equivalent to \$2.4 million) and repaid 5.0 million Chinese yuan (equivalent to \$0.8 million) on our China Facilities. Also during 2015, we received \$0.5 million in proceeds from stock option exercises. We used \$0.9 million for the purchase of common stock which was surrendered to cover tax withholding elections during 2015. Other uses of cash included a \$0.6 million contingent consideration payment related to a prior acquisition.

Years Ended December 31, 2014 and 2013

Our cash and cash equivalents totaled \$103.7 million as of December 31, 2014, a decrease of \$33.6 million from the balance at December 31, 2013.

Cash provided by operating activities for the year ended December 31, 2014 was \$118.7 million compared to cash provided by operating activities of \$59.7 million for the year ended December 31, 2013. The increase of \$59.0 million was primarily due to a decrease in accounts receivable largely driven by the E&C and BioMedical segments.

Cash used in investing activities was \$72.5 million and \$75.0 million for the years ended December 31, 2014 and 2013, respectively. Capital expenditures were \$62.1 million for the year ended December 31, 2014, primarily for expansion projects in the E&C segment for additional brazed aluminum heat exchanger capacity and a D&S segment capacity expansion project in China. Also during the year ended December 31, 2014, we used \$11.9 million of cash (net of cash acquired) to fund the Wuxi acquisition.

Cash used in financing activities for the year ended December 31, 2014 was \$70.8 million compared to \$8.1 million of cash provided by financing activities for the year ended December 31, 2013, primarily as a result of higher net repayments on revolving credit facilities. During the year ended December 31, 2014, we made \$2.8 million in scheduled quarterly principal payments related to a prior senior secured credit facility and used \$65.6 million to pay down balances outstanding on the SSRCF. We also made \$1.3 million in payments for debt issuance costs related to the SSRCF. We borrowed \$88.8 million and repaid \$87.2 million on our revolving credit facilities. Excess tax benefits from share-based compensation were \$1.9 million. We received \$0.8 million in proceeds from stock option exercises. We also used \$3.4 million for the purchase of common stock which was surrendered to cover tax withholding elections. Other uses of cash during the year ended December 31, 2014 included a \$0.7 million contingent consideration payment related to a prior BioMedical segment acquisition and a \$1.2 million distribution to one of our joint venture noncontrolling interests.

Cash Requirements

We do not currently anticipate any unusual cash requirements for working capital needs for the year ending December 31, 2016. Management anticipates we will be able to satisfy cash requirements for our ongoing business for the foreseeable future with cash generated by operations, existing cash balances and available borrowings under our credit facilities. We may repurchase our Convertible Notes on the open market to the extent permitted by our debt covenants with available cash. We expect capital expenditures for 2016 to be in the range of \$20.0 to \$25.0 million, which will be deployed primarily within our E&C operations located in La Crosse, Wisconsin and Tulsa, Oklahoma for plant and equipment upgrades and our D&S segment for a capacity expansion project in China. We also expect to use approximately \$1.2 million to fund final post-closing adjustments relating to the acquisition of Thermax. In 2016, we contemplate the use of approximately \$28.0 to \$30.0 million of cash to pay U.S. and foreign income taxes.



## Contractual Obligations

Our known contractual obligations as of December 31, 2015 and cash requirements resulting from those obligations are as follows (all dollar amounts in thousands):

	Payments Due by Period				
	Total	Less Than 1 Year	1 – 3 Years	3 – 5 Years	More Than 5 Years
Gross debt <sup>(1)</sup>	\$256,160	\$6,160	\$250,000	\$—	\$—
Long-term Convertible Notes interest	15,000	5,000	10,000	—	—
Operating leases	41,300	9,400	15,500	8,200	8,200
Severance	2,700	2,700	—	—	—
Pension obligations <sup>(2)</sup>	5,025	—	1,850	3,175	—
Total contractual cash obligations	\$320,185	\$23,260	\$277,350	\$11,375	\$8,200

<sup>(1)</sup> The \$250,000 principal balance of the Convertible Notes will mature on August 1, 2018.

<sup>(2)</sup> The planned funding of the pension obligations is based upon actuarial and management estimates taking into consideration the current status of the plan.

Not included in the table above are unrecognized tax benefits of \$1.0 million at December 31, 2015 and contingent consideration arrangements from prior acquisitions with a maximum potential payout of \$12.9 million.

Our commercial commitments as of December 31, 2015, which include standby letters of credit and bank guarantees, represent potential cash requirements resulting from contingent events that require performance by us or our subsidiaries pursuant to funding commitments, and are as follows (all dollar amounts in thousands):

	Total	Expiring in 2016	Expiring in 2017 and beyond
Standby letters of credit	\$20,821	\$8,432	\$12,389
Bank guarantees	10,569	7,231	3,338
Total commercial commitments	\$31,390	\$15,663	\$15,727

## Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

## Contingencies

We are involved with environmental compliance, investigation, monitoring and remediation activities at certain of our operating facilities or formerly owned manufacturing facilities, and accrue for these activities when commitments or remediation plans have been developed and when costs are probable and can be reasonably estimated. Historical annual cash expenditures for these activities have been charged against the related environmental reserves. Future expenditures relating to these environmental remediation efforts are expected to be made over the next 13 years as ongoing costs of remediation programs. Management believes that any additional liability in excess of amounts accrued, which may result from the resolution of such matters should not have a material adverse effect on our financial position, liquidity, cash flows or results of operations.

We are occasionally subject to various legal claims related to performance under contracts, product liability, taxes, employment matters, environmental matters, intellectual property and other matters, several of which claims assert substantial damages, in the ordinary course of our business. Based on our historical experience in litigating these claims, as well as our current assessment of the underlying merits of the claims and applicable insurance, if any, we believe the resolution of these legal claims will not have a material adverse effect on our financial position, liquidity, cash flows or results of operations. Future developments may, however, result in resolution of these legal claims in a way that could have a material adverse effect. See Item 1A. "Risk Factors" and Item 3. "Legal Proceedings" for further information.





### Foreign Operations

During 2015, we had operations in Asia, Australia, Europe and South America, which accounted for approximately 27% of consolidated sales and 40% of total assets at December 31, 2015. Functional currencies used by these operations include the U.S. dollar, Chinese yuan, the euro, the British pound and the Japanese yen. We are exposed to foreign currency exchange risk as a result of transactions by these subsidiaries in currencies other than their functional currencies, and from transactions by our domestic operations in currencies other than the U.S. dollar. The majority of these functional currencies and the other currencies in which we record transactions are fairly stable, although we experienced variability in the current year as more fully discussed in Item 7A. The use of these currencies, combined with the use of foreign currency forward purchase and sale contracts, has enabled us to be sheltered from significant gains or losses resulting from foreign currency transactions. This situation could change if these currencies experience significant fluctuations or the volume of forward contracts changes.

### Application of Critical Accounting Policies

Our consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles and are based on the selection and application of significant accounting policies, which require management to make estimates and assumptions about future events that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ materially from those estimates. Management believes the following are the more critical judgmental areas in the application of its accounting policies that affect its financial position and results of operations.

**Accounts Receivable, Net of Allowances.** We evaluate the collectibility of accounts receivable based on a combination of factors. In circumstances where we are aware of a specific customer's inability to meet its financial obligations (e.g., bankruptcy filings, substantial downgrading of credit scores), a specific reserve is recorded to reduce the receivable to the amount we believe will be collected. We also record allowances for doubtful accounts based on historical experience. If circumstances change (e.g., higher than expected defaults or an unexpected material adverse change in a customer's ability to meet its financial obligations), our estimates of the collectibility of amounts due could be changed by a material amount. When collection of a specific amount due is deemed not probable, the account is written off against the allowance.

**Goodwill and Indefinite-Lived Intangible Assets.** We evaluate goodwill and indefinite-lived intangible assets for impairment on an annual basis in the fourth quarter or whenever events or changes in circumstances indicate that an evaluation should be completed. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include deterioration in general economic conditions, negative developments in equity and credit markets, a decline in stock price and market capitalization, adverse changes in the markets in which we operate, and a trend of negative or declining cash flows over multiple periods. The fair value that could be realized in an actual transaction may differ from that used to evaluate the impairment of goodwill.

Goodwill is analyzed on a reporting unit basis. The reporting units are the same as our operating and reportable segments: E&C, D&S and BioMedical. In 2015, management utilized the quantitative goodwill impairment test which consists of two steps to determine potential impairment. In the first step ("Step 1"), we estimate the fair value of our reporting units by using income and market approaches to develop fair value estimates, which are weighted to arrive at a fair value estimate for each reporting unit. With respect to the income approach, a model has been developed to estimate the fair value of each reporting unit. This fair value model incorporates estimates of future cash flows, estimates of allocations of certain assets and cash flows among reporting units, estimates of future growth rates and management's judgment regarding the applicable discount rates to use to discount such estimates of cash flows. With respect to the market approach, a guideline company method is employed whereby pricing multiples are derived from companies with similar assets or businesses to estimate fair value of each reporting unit. If the fair value of the reporting unit exceeds the carrying amount of the net assets assigned to that reporting unit, then goodwill is not impaired and no further testing is required. However, if the fair value of the reporting unit is less than its carrying amount, we perform the second step ("Step 2") of the goodwill impairment test to measure the amount of impairment loss, if any, to recognize.

In Step 2, the implied fair value of the reporting unit's goodwill is determined by allocating the reporting unit's fair value to the assets and liabilities, other than goodwill, in a hypothetical purchase price allocation. The resulting

implied fair value is then compared to the carrying amount of the goodwill and if the carrying amount exceeds the implied fair value, an impairment charge is recorded for the difference.

In order to assess the reasonableness of the calculated fair values of our reporting units, we also compare the sum of the reporting units' fair values to our market capitalization and calculate an implied control premium (the excess of the sum of the reporting unit's fair values over the market capitalization). We evaluate the control premium by comparing it to control premiums of recent comparable transactions. If the implied control premium is not reasonable in light of this assessment, we reevaluate our fair value estimates of the reporting units by adjusting the discount rates and other assumptions as necessary.

Changes to the assumptions and estimates used throughout the steps described above may result in a significantly different estimate of the fair value of the reporting units, which could result in a different assessment of the recoverability of goodwill and result in future impairment charges.

With respect to indefinite-lived intangible assets, we first evaluate relevant events and circumstances to determine whether it is more likely than not that the fair value of an indefinite-lived intangible asset is less than its carrying amount. If, in weighing all relevant events and circumstances in totality, we determine that it is not more likely than not that an indefinite-lived intangible asset is impaired, no further action is necessary. Otherwise, we would determine the fair value of indefinite-lived intangible assets and perform a quantitative impairment assessment by comparing the indefinite-lived intangible asset's fair value to its carrying amount. We may bypass such a qualitative assessment and proceed directly to the quantitative assessment. We estimate the fair value of our indefinite-lived assets using the income approach. This may include the relief-from royalty method or use of a model similar to the one described above related to goodwill which estimates the future cash flows attributed to the indefinite-lived intangible asset and then discounting these cash flows back to a present value. Under the relief from royalty method, fair value is estimated by discounting the royalty savings as well as any tax benefits related to ownership to a present value. The fair value from either approach is compared to the carrying value and an impairment is recorded if the fair value is determined to be less than the carrying value.

We performed an interim impairment assessment in the third quarter of 2015 and as a result of that assessment, we noted that the estimated fair values of our D&S and BioMedical reporting units were within 10% to 20% of their carrying values. We anticipated at that time that the fair values of each reporting unit would increase over time; however, as outlined below, projected additional declines in the operating results of each reporting unit (including E&C) were identified in the annual forecasting process in November and December of 2015.

We quantitatively evaluated indefinite-lived intangible assets as part of the impairment testing. As a result of these tests, we recorded goodwill and indefinite-lived intangible asset impairment charges in the fourth quarter of 2015 as management concluded that the goodwill and certain indefinite-lived intangible assets within each reporting unit were impaired. The total goodwill and indefinite-lived impairment charges were \$207.7 million (attributed to the segments as follows: E&C - \$65.0 million, D&S - \$0.3 million and BioMedical - \$142.3 million).

Key factors that affected our conclusion that impairment indicators had occurred during the fourth quarter included the continued significant decline in the energy markets, a continued decline in economic activity in China, and the deferral of large capital expenditures by many companies given macroeconomic uncertainties. Each of these factors, as further described below, have a material direct impact on the operating results of our reporting units. These factors contributed significantly to less favorable longer-term forecasted operating results. Management prepares its annual forecast mid-November through December each year. As the 2016 forecast was developed, management considered many factors when assessing the outlook for 2016 and beyond. Because of these factors, management revised its forecasts down significantly which led to the impairment charges described below. In addition to the items considered for each reporting unit below, management also considered the sustained decline in the Company's market capitalization. The Company's stock price was \$95.64 on December 31, 2013, \$34.20 on December 31, 2014 and \$17.96 on December 31, 2015.

Based on the results of Step 1, we determined that the E&C and BioMedical reporting units failed Step 1 and, therefore, we performed a Step 2 analysis for these reporting units. Our D&S reporting unit passed the Step 1 test with an estimated fair value within 10% of its carrying value. Discount rates used to present value the forecasted cash flows ranged from 14.0% to 16.5% for the reporting units.

Goodwill and indefinite-lived intangible assets within the E&C reporting unit were impaired \$65.0 million as a result of revised estimates developed during our annual forecasting process. The revised estimates were the result of the following: 1) continued significant decline in energy prices during the fourth quarter which led to a significant reduction in expected order levels as LNG projects were cancelled or deferred, which impacts our longer-term forecasts; 2) in late 2015, the Company received notification of delays in major projects from several large customers; and 3) concerns with global growth, recent negative macroeconomic developments and highly competitive market conditions.

Indefinite-lived intangible assets within the D&S reporting unit were impaired \$0.3 million as a result of revised estimates developed during our annual forecasting process.

Goodwill and indefinite-lived intangible assets within the BioMedical reporting unit were impaired \$142.3 million as a result of revised estimates developed during our annual forecasting process. The revised estimates were the result of the following: 1) realization that the effects of Medicare competitive bidding, including the reduction of reimbursement rates and the subsequent consolidation of our customers, can no longer be considered temporary and will have lasting negative impacts on the growth of the homecare industry and their suppliers; 2) increased rivalry with competitive technology; and 3) concerns with global growth and recent negative macroeconomic developments.

Remaining goodwill at December 31, 2015 is \$218.4 million (attributed to the segments as follows: E&C - \$27.9 million; D&S - \$165.9 million; and BioMedical - \$24.6 million). Remaining indefinite-lived intangible assets at December 31, 2015 are \$35.7 million. A significant amount of judgment is used in the analyses prepared for goodwill and indefinite-lived impairment testing. If further indicators of impairment occur, or if results of operations for the reporting units are below the developed forecasts, management may determine that further impairment charges are necessary.

**Long-Lived Assets.** We monitor our property, plant and equipment, and finite-lived intangible assets for impairment indicators on an ongoing basis. If impairment indicators exist, assets are grouped and tested at the lowest level for which identifiable cash flows are available and the Company performs the required analysis and records impairment charges if applicable. In conducting its analysis, the Company compares the undiscounted cash flows expected to be generated from the long-lived assets to the related net book values. If the undiscounted cash flows exceed the net book value, the long-lived assets are considered not to be impaired. If the net book value exceeds the undiscounted cash flows, an impairment loss is measured and recognized. An impairment loss is measured as the difference between the net book value and the fair value of the long-lived assets. Fair value is estimated from discounted future net cash flows (for assets held for use) or net realizable value (for assets held for sale). In assessing the recoverability of our long-lived assets, a significant amount of judgment is involved in estimating the future cash flows, discount rates and other factors necessary to determine the fair value of the respective assets. If these estimates or the related assumptions change in the future, we may be required to record impairment charges for these assets in the period such determination was made. The Company amortizes intangible assets that have finite lives over their estimated useful lives.

During the fourth quarter of 2015, we identified impairment indicators described above in the Goodwill and Indefinite-Lived Intangible Assets section that suggest the carrying values of certain asset groups within each segment may not be recoverable. The primary indicators include projections of future cash flows and the associated impact on our long-range strategic plan forecasts, lower than expected cash flows attributed to certain asset groups, increased competition, the continued decline in energy prices, and our lower market capitalization. As a result of the analyses, we recorded \$38.1 million of impairment charges for finite-lived intangible assets related to the BioMedical segment (attributed to customer relationships – \$15.7 million and unpatented technology – \$22.4 million). We also impaired \$3.9 million of BioMedical property, plant and equipment. The BioMedical impairment charges were due to reductions in expected future cash flows associated with the respiratory product lines. We impaired \$3.8 million of E&C property, plant and equipment due to reductions in expected future cash flows associated with certain assets in China. The results of impairment analyses for other asset groups in the D&S and E&C segments indicated recoverability of their carrying value.

**Defined Benefit Pension Plan.** We sponsor one defined benefit pension plan which has been frozen since February 2006. The funded status is measured as the difference between the fair value of the plan assets and the projected benefit obligation. We recognize the change in the funded status of the plan in the year in which the change occurs through accumulated other comprehensive loss. Our funding policy is to contribute at least the minimum funding amounts required by law. We have chosen policies according to accounting guidance that allow the use of a calculated value of plan assets (which is further described below), which generally reduces the volatility of expense (income) from changes in pension liability discount rates and the performance of the pension plans' assets.

A significant element in determining our pension expense in accordance with accounting guidance is the expected return on plan assets. We have assumed that the expected long-term rate of return on plan assets as of December 31, 2015 and 2014 was 7.25% during both periods. The expected return assumptions were developed using an averaging formula based upon the plans' investment guidelines, mix of asset classes, historical returns of equities and bonds, and expected future returns. We believe our assumptions for expected future returns are reasonable. However, we cannot guarantee that we will achieve these returns in the future. The assumed long-term rate of return on assets is applied to the market value of plan assets. This produces the expected return on plan assets that reduces pension expense. The difference between this expected return and the actual return on plan assets is deferred. The net deferral of past asset gains or losses affects future net periodic pension expense.

At the end of each year, we determine the rate to be used to discount plan liabilities. The discount rate reflects the current rate at which the pension liabilities could be effectively settled at the end of the year. In estimating this rate, we look to rates of return on high quality, fixed-income investments that receive one of the two highest ratings given by a recognized rating agency and the expected timing of benefit payments under the plan. At December 31, 2015, we determined this rate to be 4.00% as compared to 3.75% in 2014. Changes in discount rates over the past three years have not materially affected pension expense (income), and the net effect of changes in the discount rate, as well as the net effect of other changes in actuarial assumptions and experience, have been deferred and amortized over the expected future service of participants.

Assumptions as to mortality of the plan participants is a key estimate in measuring expected payments a participant may receive over their lifetime and therefore the amount of pension expense we will recognize. During 2014, the Society of

Actuaries released a series of updated mortality tables resulting from recent studies conducted by them measuring mortality rates for various groups of individuals. The updated mortality tables reflected improved trends in longevity and therefore have had the effect of increasing the estimate of benefits to be received by the plan participants. We adopted these updated mortality assumptions which contributed to the increased benefit obligation at December 31, 2014. During 2015, the Society of Actuaries updated the mortality tables which reflected smaller improvements in mortality than the 2014 mortality tables. We adopted these updated assumptions which did not have a significant impact on the benefit obligation at December 31, 2015.

At December 31, 2015, our consolidated net pension liability recognized was \$17.3 million, an increase of \$0.4 million from December 31, 2014. This increase in the liability was largely due to actuarial losses recognized in the projected benefit obligation compared to actuarial gains recognized in the prior year. Benefit payments were \$3.1 million in fiscal 2015. We recognized approximately \$0.5 million and \$0.8 million in net periodic pension expense for the year ended December 31, 2015 and 2013, respectively, and \$0.4 million in net periodic pension income for the year ended December 31, 2014. See Note 15 to our consolidated financial statements included elsewhere in this report for further information.

**Product Warranties.** We provide product warranties with varying terms and durations for the majority of our products. We estimate product warranty costs and accrue for these costs as products are sold with a charge to cost of sales. Factors considered in estimating warranty costs include historical and projected warranty claims, historical and projected cost-per-claim and knowledge of specific product issues that are outside of our typical experience. Warranty accruals are evaluated and adjusted as necessary based on actual claims experience and changes in future claim and cost estimates.

As a result of the BioMedical segment's acquisition of AirSep in August 2012, the Company assumed exposure for warranty claims for AirSep's various product lines. One of these product lines in particular experienced high failure rates with respect to certain of its models and designs as compared to AirSep's other products. The Company established a warranty reserve on AirSep's opening balance sheet to account for the cost of satisfying future warranty claims, including a separately calculated warranty reserve for those certain models and designs in the product line that experienced greater warranty return rates (collectively, the "acquired warranty reserve"). The Company has experienced a significant number of warranty claims as AirSep products sold in prior periods run through their respective warranty periods. Usage of the acquired warranty reserve includes claims related to all of AirSep's product lines, including costs associated with the population of units for which a warranty reserve was separately calculated. Usage of the acquired warranty reserve has exceeded warranty expense since the acquisition. The Company has made various design improvements to this product line, revised the warranty claim process, and reduced the average cost to repair units since the 2012 acquisition, all in an effort to mitigate the costs associated with these warranty issues. The Company does not expect future warranty expense to be as significant as it has been since the acquisition.

Changes in assumptions used to calculate the warranty reserve estimates, including the number of expected warranty claims, the costs of satisfying those claims, or other issues, could materially affect our financial position and results from operations in future periods.

**Revenue Recognition — Long-Term Contracts.** We recognize revenue and gross profit as work on certain long-term contracts progresses using the percentage of completion method of accounting, which relies on estimates of total expected contract revenues and costs. We follow this method since reasonably dependable estimates of the revenue and costs applicable to various stages of a contract can be made. Since the financial reporting of these contracts depends on estimates, which are assessed continually during the term of the contract, recognized revenues and profit are subject to revisions as the contract progresses toward completion. Revisions in profit estimates are reflected in the period in which the facts that give rise to the revision become known. Accordingly, favorable changes in estimates result in additional profit recognition, and unfavorable changes will result in the reversal of previously recognized revenue and profits. When estimates indicate a loss is expected to be incurred under a contract, cost of sales is charged with a provision for such loss immediately. As work progresses under a loss contract, revenue and cost of sales continue to be recognized in equal amounts, and the excess of costs over revenues is charged to the contract loss reserve. Change orders resulting in additional revenue and profit are recognized upon approval by the customer based on the percentage that incurred costs to date bear to total estimated costs at completion. Pre-contract costs relate



primarily to salaries and benefits incurred to support the selling effort and, accordingly, are expensed as incurred. Certain contracts include incentive-fee arrangements clearly defined in the agreement and are not recognized until earned. The percentage of completion method of accounting is primarily used in the E&C segment, although it is used on certain contracts in our D&S and BioMedical segments.

Share-based Employee Compensation. We measure share-based compensation expense for share-based payments to employees and directors, including grants of employee stock options, restricted stock and restricted stock units, performance units, and leveraged restricted share units based on the grant-date fair value. The fair value of stock options is calculated using the Black-Scholes pricing model and is recognized on an accelerated basis over the vesting period. The grant-date fair value calculation under the Black-Scholes pricing model requires the use of variables such as exercise term of the option, future volatility, dividend yield and risk-free interest rate. The fair value of restricted stock and restricted stock units is based on our

market price on the date of grant and is generally recognized on an accelerated basis over the vesting period. The fair value of performance units is based on our market price on the date of grant and pre-determined performance conditions as determined by the Compensation Committee of the Board of Directors and is recognized on straight-line basis over the performance measurement period based on the probability that the performance conditions will be achieved. We reassess the vesting probability of performance units each reporting period and adjust share-based compensation expense based on our probability assessment. The fair value of leveraged restricted share units is based on market conditions and calculated using a Monte Carlo simulation model and is recognized straight-line over the vesting period. Share-based compensation expense for all awards considers estimated forfeitures.

**Income Taxes:** Deferred income taxes are provided for temporary differences between financial reporting and the consolidated tax return in accordance with the liability method. A valuation allowance is provided against net deferred tax assets when conditions indicate that it is more likely than not that the benefit related to such assets will not be realized. Significant judgment is required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence, including past operating results, estimates of future taxable income and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding impact to the provision for income taxes in the period in which such determination is made. At December 31, 2015, we have valuation allowances of \$7.9 million recorded.

#### Recent Accounting Standards

Refer to the Significant Accounting Policies note (Note 2) to our consolidated financial statements included elsewhere in this report for disclosure regarding a recent accounting standards.

#### Forward-Looking Statements

The Company is making this statement in order to satisfy the “safe harbor” provisions contained in the Private Securities Litigation Reform Act of 1995. This Annual Report on Form 10-K includes “forward-looking statements.” These forward-looking statements include statements relating to our business. In some cases, forward-looking statements may be identified by terminology such as “may,” “should,” “expects,” “anticipates,” “believes,” “projects,” “forecasts,” “contingent,” “could,” or “might,” or the negative of such terms or comparable terminology. Forward-looking statements contained herein (including future cash contractual obligations, liquidity, cash flow, orders, results of operations, projected revenues, and trends, among other matters) or in other statements made by us are made based on management’s expectations and beliefs concerning future events impacting us and are subject to uncertainties and factors relating to our operations and business environment, all of which are difficult to predict and many of which are beyond our control, that could cause our actual results to differ materially from those matters expressed or implied by forward-looking statements. We believe that the following factors, among others (including those described under Item 1A. “Risk Factors”), could affect our future performance and the liquidity and value of our securities and cause our actual results to differ materially from those expressed or implied by forward-looking statements made by us or on our behalf:

- the cyclical nature of the markets which we serve and the vulnerability of those markets to economic downturns;
- the loss of, or a significant reduction or delay in purchases by, our largest customers;
- fluctuations in energy prices;
- our ability to control our costs and successfully manage our operations;
- the potential for negative developments in the natural gas industry related to hydraulic fracturing;
- competition in our markets;
- the impairment of our goodwill or other intangible assets;
- governmental energy policies could change, or expected changes could fail to materialize;
- degradation of our backlog as a result of modification or termination of orders;
- our ability to successfully acquire or integrate companies that provide complementary products or technologies;
- economic downturns and deteriorating financial conditions;
- our ability to manage our fixed-price contract exposure;
- our reliance on the availability of key supplies and services;
- changes in government health care regulations and reimbursement policies;
-

litigation and disputes involving us, including the extent of product liability, warranty, contract, employment, intellectual property and environmental claims asserted against us;  
fluctuations in foreign currency exchange rates and interest rates;  
general economic, political, business and market risks associated with our global operations;

the loss of key employees;  
our warranty reserves may not adequately cover our warranty obligations;  
technological security threats and our reliance on information systems;  
financial distress of third parties;  
our ability to protect our intellectual property and know-how;  
United States Food and Drug Administration and comparable foreign regulation of our products;  
the pricing and availability of raw materials;  
the cost of compliance with environmental, health and safety laws and responding to potential liabilities under these laws;  
claims that our products or processes infringe intellectual property rights of others;  
additional liabilities related to taxes;  
our ability to continue our technical innovation in our product lines;  
labor costs and disputes and the deterioration of our relations with our employees;  
increased government regulation;  
the underfunded status of our pension plan;  
the risk of potential violations of the Foreign Corrupt Practices Act;  
disruptions in our operations due to severe weather;  
regulations governing the export of our products and other regulations applicable to us as a supplier of products to the U.S. government;  
fluctuations or adjustments in the Company's effective tax rate;  
risks associated with our indebtedness, leverage and liquidity;  
potential dilution to existing holders of our common stock as a result of the conversion of our Convertible Notes, and the need to utilize our cash balances and/or credit facility to fund any cash settlement related to such conversions;  
fluctuations in the price of our stock; and  
other factors described herein.

There may be other factors that may cause our actual results to differ materially from the forward-looking statements. All forward-looking statements attributable to us or persons acting on our behalf apply only as of the date of this Annual Report and are expressly qualified in their entirety by the cautionary statements included in this Annual Report. We undertake no obligation to update or revise forward-looking statements which may be made to reflect events or circumstances that arise after the filing date of this document or to reflect the occurrence of unanticipated events.

#### Item 7A. Quantitative and Qualitative Disclosures About Market Risk

In the normal course of business, the Company's operations are exposed to fluctuations in interest rates and foreign currency values that can affect the cost of operating and financing. Accordingly, the Company addresses a portion of these risks through a program of risk management.

**Interest Rate Risk:** The Company's primary interest rate risk exposure results from the SSRCF's various floating rate pricing mechanisms. As of December 31, 2015, there were no borrowings outstanding under the SSRCF. Based on zero borrowings at year-end, as well as historical borrowing practice under the SSRCF, the Company believes that interest rate exposure is not a material risk to the Company at this time.

**Foreign Currency Exchange Rate Risk:** The Company operates in the United States, Asia, Australia, Europe and South America, creating exposure to foreign currency exchange fluctuations in the normal course of business which can impact our financial position, results of operations, cash flow and competitive position. The financial statements of foreign subsidiaries are translated into their U.S. dollar equivalents at end-of-period exchange rates for assets and liabilities, while income and expenses are translated at average monthly exchange rates. Translation gains and losses are components of other comprehensive (loss) income as reported in the consolidated statements of operations and comprehensive (loss) income. Translation exposure is primarily with the euro, the Chinese yuan, and the Japanese yen. During 2015, the Chinese yuan, euro and Japanese yen decreased in relation to the U.S. dollar by 6%, 12% and 1%, respectively. At December 31, 2015, a hypothetical further 10% strengthening of the U.S. dollar would not materially affect the Company's financial statements.

Chart's primary transaction exchange rate exposures are with the euro, the Japanese yen, the Czech koruna, the Australian dollar, the Norwegian krone, the Canadian dollar and the Chinese yuan. Transaction gains and losses arising from fluctuations in currency exchange rates on transactions denominated in currencies other than the functional currency are recognized in the consolidated statements of operations as a component of foreign currency loss (gain). The Company enters into foreign exchange forward contracts to hedge anticipated and firmly committed foreign currency transactions. Chart does not use derivative financial instruments for speculative or trading purposes. The terms of the contracts are generally one year or less. At December 31, 2015, a hypothetical 10% weakening of the U.S. dollar would not materially affect the Company's outstanding foreign exchange forward contracts.

#### Market Price Sensitive Instruments

In connection with the issuance of the Convertible Notes, the Company entered into privately-negotiated convertible note hedge and capped call transactions with affiliates of certain of the underwriters (the "Option Counterparties"). The convertible note hedge and capped call transactions relate to, collectively, 3.6 million shares, which represents the number of shares of the Company's common stock underlying the Convertible Notes, subject to anti-dilution adjustments substantially similar to those applicable to the Convertible Notes. These convertible note hedge and capped call transactions are expected to reduce the potential dilution with respect to the Company's common stock upon conversion of the Convertible Notes and/or reduce the Company's exposure to potential cash or stock payments that may be required upon conversion of the Convertible Notes, except, in the case of the capped call transactions, to the extent that the market price per share of the Company's common stock exceeds the cap price of the capped call transactions.

The Company also entered into separate warrant transactions with the Option Counterparties initially relating to the number of shares of the Company's common stock underlying the convertible note hedge transactions, subject to customary anti-dilution adjustments. The warrant transactions will have a dilutive effect with respect to the Company's common stock to the extent that the price per share of the Company's common stock exceeds the strike price of the warrants unless the Company elects, subject to certain conditions, to settle the warrants in cash. The cap price of the capped call transactions and the strike price of the warrant transactions was initially \$84.96 per share. Further information is located in Note 7 to the Company's consolidated financial statements included in Item 8 of this Annual Report on Form 10-K.

#### Item 8. Financial Statements and Supplementary Data

Our Financial Statements and the accompanying Notes that are filed as part of this Annual Report are listed under Item 15. "Exhibits and Financial Statement Schedules" and are set forth beginning on page F-1 immediately following the signature page of this Form 10-K and are incorporated into this Item 8 by reference.

#### Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

#### Item 9A. Controls and Procedures

##### Evaluation of Disclosure Controls and Procedures

As of December 31, 2015, an evaluation was performed, under the supervision and with the participation of the Company's management including the Company's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures pursuant to Rule 13a-15 under the Securities and Exchange Act of 1934, as amended (the "Exchange Act"). Based upon that evaluation, such

officers concluded that the Company's disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act (1) is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms and (2) is accumulated and communicated to

the Company's management including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow for timely decisions regarding required disclosure.

#### Management's Report on Internal Control Over Financial Reporting

Management's Report on Internal Control Over Financial Reporting is set forth on page F-1 of this Annual Report on Form 10-K and incorporated herein by reference. Management used the updated Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission to perform the evaluation.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2015 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report which is set forth in Item 8. "Financial Statements and Supplementary Data," on page F-3 under the caption "Report of Independent Registered Public Accounting Firm" and incorporated herein by reference.

#### Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control ov