

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

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022
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 Number 001-14962



CIRCOR INTERNATIONAL, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

04-3477276
(I.R.S. Employer
Identification No.)

30 CORPORATE DRIVE, SUITE 200
Burlington, MA 01803-4238
(Address of principal executive offices) (Zip Code)

(781) 270-1200
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.01 per share	CIR	New York Stock Exchange

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 Exchange 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 every Interactive Data File required to be submitted 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 such files). Yes ☒ No ☐

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

Large accelerated filer ☐ Accelerated filer ☒ Emerging growth company ☐
Non-accelerated filer ☐ Smaller reporting company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. Yes ☐ No ☐

Indicate by check mark whether the registrant has filed a report and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

The aggregate market value of voting stock held by non-affiliates of the registrant as of July 3, 2022 was \$325,084,278. The registrant does not have any non-voting common equity.

As of March 10, 2023, there were 20,365,293 shares of the registrant's Common Stock outstanding.

Table of Contents

	<u>Page Number</u>
Part I	
Item 1 Business	1
Item 1A Risk Factors	9
Item 1B Unresolved Staff Comments	19
Item 2 Properties	19
Item 3 Legal Proceedings	20
Item 4 Mine Safety Disclosures	20
Part II	
Item 5 Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	21
Item 6 Selected Financial Data	22
Item 7 Management’s Discussion and Analysis of Financial Condition and Results of Operations	22
Item 7A Quantitative and Qualitative Disclosures About Market Risk	31
Item 8 Financial Statements and Supplementary Data	31
Item 9 Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	31
Item 9A Controls and Procedures	32
Item 9B Other Information	33
Item 9C Disclosure Regarding Foreign Jurisdiction the Prevents Inspections	33
Part III	
Item 10 Directors, Executive Officers and Corporate Governance	34
Item 11 Executive Compensation	39
Item 12 Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	78
Item 13 Certain Relationships and Related Transactions, and Director Independence	79
Item 14 Principal Accounting Fees and Services	80
Part IV	
Item 15 Exhibits and Financial Statement Schedules	81
Item 16 Form 10-K Summary	84
Signatures	85
Reports of Independent Registered Public Accounting Firms	86
Consolidated Balance Sheets	90
Consolidated Statements of Operations	91
Consolidated Statements of Comprehensive Income (Loss)	92
Consolidated Statements of Cash Flows	93
Consolidated Statements of Shareholders’ Equity	94
Notes to Consolidated Financial Statements	95

Part I

Item 1. Business

This Annual Report on Form 10-K contains certain statements that are “forward-looking statements” as that term is defined under the Private Securities Litigation Reform Act of 1995 (the “Act”). The words “may,” “hope,” “should,” “expect,” “plan,” “anticipate,” “intend,” “believe,” “estimate,” “predict,” “potential,” “continue,” and other expressions which are predictions of or indicate future events and trends and which do not relate to historical matters, identify forward-looking statements. We believe that it is important to communicate our future expectations to our stockholders, and we, therefore, make forward-looking statements in reliance upon the safe harbor provisions of the Act. However, there may be events in the future that we are not able to accurately predict or control and our actual results may differ materially from the expectations we describe in our forward-looking statements. Forward-looking statements, including statements about our future performance, including the potential outcome, if any, of the Board of Director's review of strategic alternatives; the expected and potential direct and indirect impacts of the COVID-19 pandemic on our business, our ability to remediate the material weakness in our internal control over financial reporting, the number of new product launches and future cash flows from operating activities, involve known and unknown risks, uncertainties and other factors, which may cause our actual results, performance or achievements to differ materially from anticipated future results, performance or achievements expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, the duration and scope of the COVID-19 pandemic; any adverse changes in governmental policies or laws, including tax laws; variability of raw material and component pricing; changes in our suppliers' performance; fluctuations in foreign currency exchange rates; changes in tariffs or other taxes related to doing business internationally; our ability to hire and retain key personnel; our ability to operate our manufacturing facilities at efficient levels, including our ability to prevent cost overruns and reduce costs; supply chain disruptions; our ability to generate increased cash by reducing our working capital; our prevention of the accumulation of excess inventory; increases in interest rates; our ability to successfully defend product liability actions; the inability to identify or complete a strategic transaction; the current highly inflationary environment; volatility and disruption in the capital markets; as well as the uncertainty associated with the current worldwide economic conditions and the continuing impact on economic and financial conditions in the United States and around the world, including as a result of the current recessionary environment, COVID-19 pandemic, natural disasters, military conflicts, terrorist attacks and similar matters. For a discussion of these risks, uncertainties and other factors, see Part I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

Overview

As used in this report, the terms “we,” “us,” “our,” the “Company” and “CIRCOR” mean CIRCOR International, Inc. and its subsidiaries (unless the context indicates another meaning). The term “common stock” means our common stock, par value \$0.01 per share.

CIRCOR designs, manufactures and markets differentiated technology products and sub-systems for the industrial and aerospace and defense markets. We have a diversified flow and motion control product portfolio with recognized, market-leading brands that fulfill our customers' mission critical and severe service needs. The Company's strategy is to grow organically through innovative product development, aftermarket growth, penetrating new regions, and leveraging core technologies into growth markets like hydrogen, medical and space; achieve world class operational excellence; and build an inclusive, growth-oriented culture that attracts and retains a diverse group of talent. We have a global presence and operate 18 major manufacturing facilities located in North America, Western Europe, Morocco, China and India. The Company has the following reportable business segments: Industrial segment (“Industrial”) and Aerospace & Defense segment (“Aerospace & Defense” or “A&D”). We sell our products directly to end-user customers and original equipment manufacturers (“OEMs”), as well as through Engineering, Procurement and Construction (“EPC”) companies and our channel partner network.

In 2020, we completed the divestiture of our loss-making Distributed Valves (“DV”) business. This action stemmed from our strategic decision to exit the upstream oil and gas valves market. This business and the associated loss on disposal were reported within discontinued operations in our consolidated financial statements. The following discussion in this Item 1 relates only to our continuing operations unless otherwise noted. Refer to Note 1, Description of Business along with Note 3, Discontinued Operations, to the consolidated financial statements included in this Annual Report for additional information.

As previously announced in March 2022, our Board of Directors has initiated a full review of all potential strategic alternatives available to the Company to enhance value for stockholders including, but not limited to, a possible sale of some or all of our assets (whether in whole or in parts), merger, divestiture or other strategic transaction. The Company has not set a timetable for completion of the review, may suspend or terminate the review at any time and does not intend to make further announcements regarding the process unless and until our Board of Directors approves a course of action for which further disclosure is required or appropriate. The exploration of strategic alternatives may not result in any transaction or strategic change. The discussion of our business strategies below reflects our short-term and long-term strategies without giving effect to the strategic review process.

Strategies

Our objective is to enhance stockholder value by focusing on organic growth, margin expansion, improving free cash flow (a non-GAAP financial measure) and reducing leverage. Our strategy to achieve these objectives is to:

1) *Build the best team.* We are committed to creating a strong employee value proposition that attracts talented and diverse people to CIRCOR. We are also committed to investing in, engaging, challenging and developing our employees through a variety of development programs. Our goal is to build an inclusive, growth-oriented culture that, when combined with robust process, appropriate metrics, and individual accountability, will deliver extraordinary results.

2) *Drive organic growth.* We serve mission critical applications across our A&D and Industrial portfolio, and typically enjoy competitive position in the market segments we serve. One of the pillars of our growth is customer intimacy. Strong insights into the needs of our current and prospective customers enable us to drive growth through new products, aftermarket support, value-based pricing and enhanced customer experience from order through delivery. We view aftermarket as key to both organic growth and margin expansion and we will continue exploring support opportunities for our customers, especially those in our Industrial segment. In A&D, our businesses are well positioned for growth from critical programs such as Navy submarines, missiles including hypersonic, fighter aircraft and narrowbody and widebody commercial aircraft platforms. In addition, we are finding use of our technologies in new markets including medical, hydrogen and space applications. We will continue to invest in new technologies and new programs where we can leverage our unique technical advantages.

3) *Realize margin expansion.* We have a successful track record of expanding margins in our A&D segment and continue to build on this success through value-based pricing, volume growth and the leverage of our best-cost manufacturing operations in Morocco. In Industrial, we are implementing similar strategies to those that have been successful in A&D, including value-based pricing, focus on the aftermarket, leverage of best-cost manufacturing in India and China, as well as factory modernization and 80/20 simplification.

4) *Optimize overhead cost.* We continue to evaluate our cost structure across the organization. We are continuously looking for opportunities to simplify our structure, eliminate redundancies and align our teams closer to the customers. These initiatives resulted in structural cost-out during 2022 and we have identified specific areas of opportunities for further improvements which we are currently evaluating for future implementation.

5) *Achieve world class operational excellence.* Our businesses are committed to achieving operational excellence in support of our customers' expectations of high quality, on-time delivery and market competitiveness. We follow the CIRCOR Operating System ("COS"), which creates a disciplined culture of continuous improvement for driving operational excellence. COS is comprised of ten business process attributes designed to engage and empower our employees to recognize and eliminate waste, work real-time problem solving as part of their everyday job experience, and enhance our performance both in operations and front end processes. Quantitative performance metrics define site certification levels to help attain and sustain a high level of quality, productivity, inventory management and market competitiveness that delights our customers, stockholders, and employees.

6) *Focused capital deployment.* We have a portfolio of leading brands, differentiated technologies and strong customer relationships. We continually evaluate whether we are the best owners of our businesses, or whether we could undertake value enhancing divestitures. Although, our markets remain fragmented, and we see opportunity for complementary and value enhancing acquisitions, in the near term our focus is on organic investments, evaluating divestitures and reducing leverage.

Business Segments

Industrial

Industrial is a global portfolio of highly engineered and differentiated flow control solutions. Our primary products are positive displacement pumps, specialty centrifugal pumps, metering pumps, automatic recirculating valves, and control valves for mission critical applications.

Our technology is focused on moving the most difficult fluids with extremely high efficiency for critical applications in the general industrial, power and process, energy, and commercial marine end markets.

We plan to grow the Industrial segment by improving our understanding of our customers and their challenges and providing innovative new products, including digitally enabled products, in multiple product lines that address our customers' severe service and mission critical needs. We are driving growth regionally and developing products in-region, for-region. We are using multiple digital tools, including a new CIRCOR app, to support our customers in the aftermarket. The Industrial segment is also focused on pricing initiatives to drive value-pricing for our products. We have achieved significant margin expansion in our Industrial segment in 2022 and believe that we have more opportunities for margin expansion through our value pricing strategy, simplification, factory modernization and best cost country sourcing and manufacturing.

Industrial is headquartered in Radolfzell, Germany, with primary manufacturing centers in North America, England, Germany, India, and China.

Markets and Applications

Industrial serves the general industrial, power and process, energy and commercial marine markets.

- The general industrial market includes a broad range of manufacturing operations for flow control. Our products are used to handle fluids with a wide range of viscosity, lubricity, temperature, pressure and flow requirements, automate and control plant utilities, increase energy efficiency in buildings and campuses, and safely regulate critical fluids such as steam and industrial gases used in manufacturing processes.
- The power and process market is comprised of electric utilities, industrial power producers and OEM power generating equipment providers. Our products and services are used across this segment in lubrication management for turbines and generators, as well as fuel delivery, heat transfer, and emissions reduction applications. We serve power generation facilities and processes fueled by natural gas, oil, hydro, solar, nuclear, and coal.
- The energy markets we serve are primarily midstream and downstream oil & gas, as well as renewables. In midstream, our products and services are used in the transfer of oils and refined products via pipelines, ship vessels, railcars, and trucks. Our products and services are also used to manage and maintain storage terminals. In downstream, our products are used to support critical refining processes, both directly in the process and as part of integrated equipment supplied by OEMs. Our products are also used in the production and management of biofuels and supporting the operation of large-scale wind farms.
- The commercial marine market includes shipbuilders, OEM suppliers of onboard equipment, and shipping fleet operators. Our products and services are designed specifically to support all aspects of fluid systems, including propulsion, ballast handling, cooling water, bilge, fuel, power generation, and hydraulics.
- In all of the markets we serve, we provide aftermarket components and aftermarket services.

Brands

Industrial manufactures and markets products and services through the following brands:

Allweiler, DeltaValve, Houttuin, IMO Pump, IMO AB, Leslie Controls, RG Lawrence, RTK, Schroedahl, TapcoEnpro, Tushaco, and Zenith.

Products

Industrial offers a range of flow control products and services, including:

- 3 Screw Pumps
- 2 Screw Pumps
- Progressing Cavity Pumps
- Specialty Centrifugal Pumps
- Gear Metering Pumps
- Automatic Recirculation Valves

- Highly engineered valves, top and bottom unheading devices and center feed devices for refinery coking and Fluidized Catalytic Cracking Units (FCCU) operations
- Severe Service and General Service Control Valves

Our products must comply with certification standards applicable to many of our end markets. These standards include but are not limited to ISO 9001:2008, ANSI/ASQC Q 9001, API 676, and Mil-I-45208.

Customers

Industrial's products and services are sold directly to end-users, OEMs that supply specialized systems in their respective end markets, and EPC companies and through a global network of indirect sales channels.

Revenue

Industrial accounted for \$504.2 million, \$506.1 million, and \$499.2 million or 64%, 67%, and 65% of our net revenues for the years ended December 31, 2022, 2021, and 2020, respectively.

Aerospace & Defense

Aerospace & Defense designs and produces diversified and innovative flow and motion control products. Our primary product focus areas are valves, pumps, electric motors, kinetic switches, high pressure pneumatic regulators and subsystems, and various ElectroMechanical assemblies. Aerospace & Defense products are mainly used in commercial aerospace, defense aerospace, Navy ships and submarines and general industrial markets.

We plan to grow Aerospace & Defense by increasing market share in existing and new markets through exceptional sales and customer service and with new products enabled by innovative, reliable and high-quality solutions. A key part of our strategy is to leverage our core product technologies and technical capabilities to drive growth in new markets such as hydrogen transportation and dispensing, medical equipment, space, and hypersonic missiles. We are focused on capturing new business on new and existing platforms by providing innovative and best value solutions to our customers. We are also continuing to leverage our large installed base and our value-based strategy to drive growth and margin expansion from our aftermarket. We are also leveraging our manufacturing footprint in Morocco and sourcing initiatives in best cost countries to support our growth strategy and margin expansion on high value programs.

We have Aerospace & Defense facilities in North America, United Kingdom, France, Morocco, and India. Our Aerospace & Defense headquarters is in Corona, California.

Markets and Applications

Aerospace & Defense serves the aerospace and defense markets.

- The aerospace market that we serve includes commercial aerospace primarily focused on subsystems and components on commercial aircraft and business jets, such as hydraulic, pneumatic, fuel and ElectroMechanical components including maintenance, repair and overhaul (MRO). In addition, we serve the defense aerospace market, including applications where controls or motion switches are mission critical. We support fixed wing aircraft, rotorcraft, missile systems, weapon launch systems, ordinance, fire control, fuel systems, pneumatic controls, and hydraulic systems.
- The non-aerospace defense market that we serve is primarily focused on naval vessels, with our pumps and valves used across most naval platforms in a wide variety of onboard applications. We are a trusted supplier to many countries' navies, leveraging our engineering and manufacturing capabilities to work directly with our customers in developing targeted solutions for mission critical applications including very low acoustic signature pumps for submarines.
- We also serve various other markets, such as hydrogen, medical and space leveraging our core products technologies and technical capabilities.
- In all of the markets we serve, we provide aftermarket components and repair services.

Brands

Aerospace & Defense manufactures and markets control valves, pumps, regulators, fluid controls, pneumatic valves and controls, electro-mechanical controls, electric motors and other flow control products and subsystems. Aerospace & Defense provides actuation and fluid control systems and services through the following brands: CIRCOR Aerospace, Aerodyne Controls, CIRCOR Bodet, CIRCOR Industria, CIRCOR Motors, Hale Hamilton, Leslie Controls, Portland Valve, and Warren Pumps.

Products

Aerospace & Defense offers a range of products, including:

- Specialty Centrifugal, 2-Screw, and Propeller Pumps
- Specialized control valves
- MIL-Spec butterfly valves and actuators
- Electromechanical, pneumatic, and hydraulic, fluid and motion control components and subsystems
- Brushless DC Motors
- Kinetic Switches
- Pressure regulators and pressure control systems
- Actuation components and sub-systems

In the manufacture of our products, we must comply with certain certification standards, such as AS9100C, ISO 9001:2008, National Aerospace & Defense Contractors Accreditation Program, Federal Aviation Administration Certification and European Aviation Safety Agency as well as other customer qualification standards. Currently all of our manufacturing facilities comply with applicable standards.

Customers

Aerospace & Defense products and services are sold directly and indirectly to a range of customers, including those in the military and defense, commercial aerospace, business and general aviation and general industrial markets. Our customers include aircraft manufacturers (OEMs) and Tier 1 and Tier 2 suppliers to these customers, missile systems integrators, Naval Shipyards, U.S. Department of Defense, U.K. Ministry of Defense, various commercial airlines, various industrial customers and various other end users.

Revenue

Aerospace & Defense accounted for \$282.7 million, \$252.5 million, and \$266.0 million, or 36%, 33%, and 35% of our net revenues for the years ended December 31, 2022, 2021, and 2020, respectively.

CIRCOR Consolidated

Competition

The domestic and international markets for our products are highly competitive. Some of our competitors have substantially greater financial, marketing, personnel and other resources than us. We consider product brand, quality, performance, on-time delivery, customer service, price, distribution capabilities and breadth of product offerings to be the primary competitive factors in these markets. We believe that new product development and product engineering also are important to our success and that our position in the industry is attributable, in significant part, to our ability to develop innovative products and to adapt existing products to specific customer applications. Our ability to leverage our large installed base of equipment to drive repairs and spares growth is a competitive advantage.

The primary competitors of our Industrial segment include: Leistriz AG, Curtiss-Wright Corporation, Netzsch GmbH, ITT Corporation, IMI plc, SPX Flow, Inc., Seepex GmbH, and Naniwa Ltd.

The primary competitors of our Aerospace & Defense segment include: Transdigm, Crane Co., Curtiss-Wright Corporation, Moog, Inc., Parker Hannifin Corp., and Woodward Inc.

New Product Development

Our engineering differentiation comes from our ability to offer products, solutions and services that address high pressure, high temperature, and caustic flow. Our solutions offer high standards of reliability, safety and durability in applications requiring efficiency, low leakage, low acoustics and precision in fluid and motion control.

We continue to develop new and innovative products to enhance our market positions and drive growth. Our product development capabilities include designing and manufacturing custom solutions to meet high tolerance or close precision requirements. Our Aerospace & Defense segment continues to expand its integrated systems design and testing capability to support sub-systems for aeronautics applications, as well as acoustically superior pumps for marine applications. These testing and manufacturing capabilities enable us to develop and support customer-specified applications. In many cases, the unique characteristics of our customer-specified technologies have been subsequently used in broader product offerings. The Industrial segment provides unique flow control products for viscous and critical fluids with specific design and engineering capabilities.

We maintain a Global Engineering Center of Excellence in India with a capable technology and engineering team that complements the engineering resources in our various business units.

Customers

For the years ended December 31, 2022 and 2021, no customers accounted for more than 10% of the Company's consolidated revenues. Our businesses sell into both long-term capital projects as well as short-cycle demand. As a result, we tend to experience fluctuations in orders, revenues and operating results at various points across economic and business cycles.

Selling and Distribution

Across our businesses we utilize a variety of channels to market our products and solutions. Those channels include direct sales, distributors and commissioned representatives. Our channel partner network typically offers technically trained sales forces with strong relationships in key markets. We believe that our established, global direct and indirect sales channels constitute a competitive strength. We believe that we have good relationships with our channel partners.

Intellectual Property

The Company relies upon a combination of trade secrets and patent and trademark registrations to protect its intellectual property. Our patents are scheduled to expire between 2022 and 2038, and our trademarks can be renewed as long as we continue to use them. We do not believe the vitality and competitiveness of any of our business segments as a whole depends on any one or more patents or trademarks. We own certain licenses such as software licenses, but we do not believe that our business as a whole depends on any one or more licenses.

Raw Materials

The raw materials used most often in our production processes are castings, forgings and bar stock of various materials, including stainless steel, carbon steel, bronze, copper, brass, titanium and aluminum. These materials are subject to price fluctuations that may adversely affect our results of operations. We purchase these materials from numerous suppliers and at times experience constraints on the supply of certain raw material as well as the inability of certain suppliers to respond to our needs. Historically, increases in the prices of raw materials have been partially offset by higher sales prices, active materials management, project engineering programs and the diversity of materials used in our production processes.

Regulatory and Environmental Matters

Our business and operations are subject to numerous federal, state and local laws and regulations, both within and outside the United States, in areas such as: competition, government contracts, international trade, labor and employment, tax, environmental protection, workplace health and safety, and others. These and other laws and regulations impact the manner in which we conduct our business, and changes in legislation or government policies can affect our operations, both favorably and unfavorably. Below is a summary of some of the significant regulations that impact our business (see also *Part I, Item 1A, "Risk Factors"*).

Government Procurement. The services we provide to the U.S. federal government are subject to Federal Acquisition Regulation, the Truth in Negotiations Act, export controls rules and Department of Defense (DOD) security regulations, as well as many other laws and regulations. These laws and regulations affect how we transact business with our customers and, in some instances, impose additional costs on our business operations. A violation of specific laws and regulations could lead to fines, contract termination or suspension of future contracts. Our government clients can also terminate, renegotiate, or modify any of their contracts with us at their convenience.

Trade Controls. The export of our products is subject to applicable trade controls laws, including those in the U.S., the European Union, United Kingdom and China, and include, but are not limited to, the International Traffic in Arms Regulations, the Export Administration Regulations, and trade sanctions against embargoed countries. A violation of specific laws and regulations could lead to civil or criminal enforcement action and varying degrees of liability.

Anti-Bribery. We are subject to the U.S. Foreign Corrupt Practices Act and similar anti-bribery laws, which generally prohibit companies and their intermediaries from making improper payments to foreign government officials for the purpose of obtaining or retaining business. The U.K. Bribery Act of 2010 prohibits both domestic and international bribery, as well as bribery across both private and public sectors. In addition, an organization that “fails to prevent bribery” committed by anyone associated with the organization can be charged under the U.K. Bribery Act unless the organization can establish the defense of having implemented “adequate procedures” to prevent bribery.

Human Capital

CIRCOR’s success depends on our ability to attract, develop, engage and retain key talent. Management oversees and drives a number of vital employee programs in support of these goals.

Employee Profile

As of December 31, 2022, CIRCOR had approximately 3,060 employees, of whom approximately 97% are full-time. Our workforce is located both in the U.S. and abroad, with 42% of our workforce in Europe, 39% in the United States, 11% in India and the rest spread across the rest of Asia, the Middle East and Latin America.

Approximately 37% of our workforce is composed of skilled direct labor working in our factories across the globe, 30% is indirect labor in support of this direct labor, and 33% is selling, general and administrative expenses (“SG&A”) staff (including engineering, sales, finance, human resources and legal personnel). Approximately 6% of the Company’s U.S. employees are unionized. Outside the United States, we have employees in Europe that are represented by an employee representative organization, such as a union, works council or employee association.

Approximately 20% of the Company’s global workforce is female, and 16% of the Company’s employees in leadership roles are female. Approximately 35% of the Company’s U.S. workforce and 14% of our U.S. employees in leadership roles are racially or ethnically diverse. At the Board of Directors level, 33% of our directors are female and 0% of our Board of Directors is racially or ethnically diverse (the Company had a racially diverse Board member, who had to resign last summer, due to health issues; he has not yet been replaced).

Talent Attraction

We employ a rigorous recruitment process to attract and hire the talent needed for our continued success and growth. This includes candidates from diverse backgrounds and with differing experiences. Candidates are carefully vetted and assessed in multiple stages and interviews. Our recruitment processes are designed to comply with local labor laws and regulations.

We continue to focus on creating a more diverse candidate pool. The current careers page on our website includes a specific section on diversity & inclusion and focused on improving our job descriptions, to make them more appealing to broader slate of potential candidates. We also provided a standardized interview guide and unconscious bias training to hiring managers in 2021 and we continue to provide diversity and inclusion training to our leaders.

Talent Development

CIRCOR is committed to developing our talent. Many of our employees participate in an annual Talent Review Process and Performance Management Process, which helps assess the performance as well as the potential of employees. We focus on investment in three main methods of developing talent: (1) on-the-job, technical or skills-based training, (2) mentorship and (3) leadership and executive development training.

We actively train our employees on leadership competencies, interpersonal skills, process improvement skills, compliance topics as well as technical skills. We work with high potential employees to create Individual Development Plans for them and provide opportunities for assessments and coaching as needed. In 2022, 74% of leadership positions were filled internally as CIRCOR lays heavy emphasis on promoting from within and creating growth opportunities for our employees. We use annual succession planning and periodic sessions with business leaders and the People team throughout the year to understand the open roles for which internal candidates might be available to fill.

Talent Retention

We are committed to creating a strong employee value proposition, and our retention strategy centers on building an inclusive, growth-oriented culture that is attractive to our employees. We have regular communications from our senior leaders to employees throughout the organization and provide channels for feedback.

We periodically conduct employee engagement surveys and other similar surveys to measure employee engagement and satisfaction. Our 2021 employee engagement survey had a greater than 70% participation rate, and measured employee engagement and satisfaction, and sought employee feedback, across a range of topics. In addition, our sites host town halls throughout the year to engage employees at a local level; some sites also have employee engagement committees that meet regularly with leadership to provide feedback. We continue to adapt to a hybrid workplace and have rolled out a flexible work policy for many of our employees. Our goal is for all of our employees, whether fully-remote, hybrid or in-office, to feel engagement and connected with CIRCOR.

In addition, we offer competitive compensation and benefits packages that are designed to retain, motivate and reward our employees. CIRCOR has a Pay for Performance philosophy, and we align our compensation practices with reference to external benchmarks, internal comparisons and the relationship between management and non-management remuneration. In 2022, we closely managed and responded to the changing job market, in order to retain talent. We seek to ensure that our pay practices do not discriminate on the basis of gender or race, taking into account job-related responsibilities, geographic location, and individual employee work experience, education and performance. Some of our employees participate in our short-term and/or long-term incentive program connecting payouts to achievement of key financial and other metrics and the employee's contribution to those results.

We also provide competitive benefits programs in line with local market practice. We regularly review our benefits packages globally, especially in light of changing employees' expectations as a result of the COVID-19 pandemic and the entrance of Generation Z to our workforce. Additionally, we offer a global Employee Assistance Program to assist with our employee's well-being.

We carefully monitor the voluntary attrition of our employees. In 2022, the annualized voluntary attrition rate was 9%. This is higher than last year but remains within our expectations.

Employee Health & Safety

We are committed to protecting the health and safety of our employees, and safety is one of our Absolutes. Our Absolutes, which are Safety, Controls and Ethics, are the three imperatives underlying everything we do at CIRCOR. Our culture of safety includes an ongoing training program, stand downs when injury events occur and encouraging our employees to speak up if they see a safety hazard. In 2021, we instituted a Safety Action Plan to reinforce the fundamentals of safety and focus on leading indicators.

In addition to common lagging indicators used to track employee safety, such as injuries, we look to leading indicators, such as safety observations and near-misses, integrated with established problem-solving methodologies to resolve issues that endanger worker safety. In 2022, our Total Recordable Incident Rate (TRIR) was 0.75 and our Lost Time Incident Rate (LTIR) was 0.32. These numbers are lower than our 2021 TRIR of 0.83 and LTIR of 0.48, with nominal recordable incidents and lost time incidents down year over year, driving ratios lower even with a higher number of total hours worked across the organization. Additionally, 44% of our manufacturing sites had zero recordable incidents in 2022. We also had no work-related fatalities or incidents of occupational diseases. We aim to improve our safety numbers with continued training, regularly communicating our safety initiatives, and empowering our employees with measures including our Proactive Observation Program and Stop Work Authority.

We continue to strive to ensure the health, safety and general well-being of our teams. Actions we have taken in response to the COVID-19 pandemic, include the following:

- Encouraging those who are sick to stay home and continuing to use work-from-home where necessary to minimize potential outbreaks;
- Encouraging vaccination, and fully covering the cost of COVID-19 vaccinations
- Increasing cleaning protocols across all locations;
- Providing additional personal protective equipment and cleaning supplies;
- Implementing protocols to address actual and suspected COVID-19 cases and potential exposure;
- Utilization of masks to be worn as recommended by local law; and
- Expanding our Employee Assistance Program to all of our employees worldwide.

Diversity & Inclusion (“D&I”)

CIRCOR is committed to cultivating a workplace that makes diversity, equity, inclusion and transparency priorities in everything we do. In furtherance of that commitment, we have established active D&I initiatives in the areas of talent acquisition, talent development, total rewards, employee engagement and communications, which impact employees at all levels of the organization. In addition, we have a D&I Program Manager, an HR Vice President, and a Senior Executive Sponsor, who are driving our D&I initiatives and goals. Our primary goal is to increase gender and racial and ethnic representation throughout the organization, including senior management, and our initiatives are focused on that goal.

D&I achievements in 2022 included the following:

- Utilized metrics to understand penetration of activities and impact on creating diversity in the workplace;
- Celebrated key diversity events including Black History Month and US Pride Month, to support engagement efforts;
- Created a D&I learning path in our Learning Management System;
- Revised our Code of Conduct to include, among other things, a D&I Policy; and
- Continued employee communications on D&I topics and initiatives.

Available Information

We file reports on Form 10-Q with the SEC on a quarterly basis, additional reports on Form 8-K from time to time, and an annual report on Form 10-K on an annual basis. These and other reports filed by us, or furnished by us, to the SEC in accordance with section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge from the SEC on its website at <http://www.sec.gov>. Additionally, our reports on Form 10-Q, Form 8-K, Form 10-K and amendments to those reports are available without charge, as soon as reasonably practicable after they have been filed with, or furnished to, the SEC, on our Investor Relations website at <http://investors.CIRCOR.com>. The information on our website is not part of, or incorporated by reference in, this Annual Report.

Item 1A. Risk Factors

Set forth below are certain risk factors that we believe are material to our stockholders. The risks described in these risk factors, some of which we have actually experienced, could harm our business, financial condition, cash flows, results of operations and reputation. You should also consider these risk factors when you read “forward-looking statements” elsewhere in this report. You can identify forward-looking statements by terms such as “may,” “hope,” “should,” “expect,” “plan,” “anticipate,” “intend,” “believe,” “estimate,” “predict,” “potential” or “continue,” the negative of those terms or other comparable terminology. Forward-looking statements are only predictions and can be adversely affected by any of the following risks:

Risks related to our Material Weaknesses and Restatements

We have identified material weaknesses in our internal control over financial reporting and those weaknesses have led to a conclusion that our internal control over financial reporting and disclosure controls and procedures were not effective as of December 31, 2022. Our inability to remediate the material weaknesses, our discovery of additional weaknesses, and our inability to achieve and maintain effective disclosure controls and procedures and internal control over financial reporting, could adversely affect our results of operations, our stock price and investor confidence in our company.

Section 404 of the Sarbanes-Oxley Act of 2002 requires that companies evaluate and report on the effectiveness of their internal control over financial reporting. In addition, we engaged our independent registered public accounting firm to report on its evaluation of those controls. As disclosed in more detail under Item 9A, “Controls and Procedures” below, we have identified four material weaknesses as of December 31, 2022 in our internal control over financial reporting resulting from (i) a lack of sufficient number of finance, accounting and internal controls personnel, (ii) a lack of design and effective controls to monitor at the corporate level significant balances recorded within the trial balances of smaller reporting locations, (iii) a lack of effective review controls to mitigate the risks of material misstatements within significant accounts of smaller reporting locations, and (iv) a lack of effective IT general controls over certain IT applications supporting financial reporting. Due to the material weaknesses in our internal control over financial reporting, we have also concluded our disclosure controls and procedures were not effective as of December 31, 2022.

Failure to have effective internal control over financial reporting and disclosure controls and procedures can impair our ability to produce accurate financial statements on a timely basis and has led and could again lead to a restatement of our financial statements. For example, the identified material weaknesses resulted in material adjustments to the consolidated financial statements for the years ending December 31, 2020 and 2019, and interim and year to date periods through the nine months ended October 3, 2021. If, as a result of the ineffectiveness of our internal control over financial reporting and disclosure controls and procedures, we cannot provide reliable financial statements, our business decision processes may be adversely affected, our business and results of operations could be harmed, investors could lose confidence in our reported financial information and our ability to obtain additional financing, or additional financing on favorable terms, could be adversely affected.

Our management has taken action to begin remediating the material weaknesses; however, certain remedial actions have only recently been undertaken, and while we expect to continue to implement our remediation plans throughout the fiscal year ending December 31, 2023, we cannot be certain as to when remediation will be fully completed. Additional details regarding the initial remediation efforts are disclosed in more detail in Part II, Item 9A, “Controls and Procedures” below. In addition, we could in the future identify additional internal control deficiencies that could rise to the level of a material weakness or uncover other errors in financial reporting. During the course of our evaluation, we may identify areas requiring improvement and may be required to design additional enhanced processes and controls to address issues identified through this review. In addition, there can be no assurance that such remediation efforts will be successful, that our internal control over financial reporting will be effective as a result of these efforts or that any such future deficiencies identified may not be material weaknesses that would be required to be reported in future periods. In addition, we cannot assure you that our independent registered public accounting firm will be able to attest that such internal controls are effective when they are required to do so.

If we fail to remediate these material weaknesses and maintain effective disclosure controls and procedures or internal control over financial reporting, we may not be able to rely on the integrity of our financial results, which could result in inaccurate or additional late reporting of our financial results, as well as delays or the inability to meet our future reporting obligations or to comply with SEC rules and regulations. This could result in claims or proceedings against us, including by shareholders or the SEC. The defense of any such claims could cause the diversion of the Company’s attention and resources and could cause us to incur significant legal and other expenses even if the matters are resolved in our favor.

Risks Related to our Markets and Industry

We face significant competition and, if we are not able to respond, our revenues may decrease.

We operate in a highly competitive environment in each of the markets we serve, and we face competition in each of our segments from numerous competitors. We consider product innovation, product quality, performance, customer service, on-time delivery, price, distribution capabilities and breadth of product offerings to be the primary competitive factors in our markets. Our competitors may be able to offer more attractive pricing, duplicate our strategies, or develop enhancements to products that could offer performance features that are superior to our products. Competitive pressures, including those described above, and other factors could adversely affect our competitive position, resulting in a loss of market share or decreases in prices, either of which could have a material adverse effect on our business, financial condition, cash flows or results of operations. In addition, some of our competitors are based in foreign countries and have cost structures and prices based on foreign currencies. The majority of our transactions are denominated in either U.S. dollar or Euro currency. Accordingly, currency fluctuations could cause our U.S. dollar and/or Euro priced products to be less competitive than our competitors' products that are priced in other currencies.

We, along with our customers and vendors, face the uncertainty in the public and private credit markets and in general economic conditions in the United States and around the world.

In recent years there has been at times disruption and general slowdown of the public and private capital and credit markets in the United States and around the world. In particular, U.S. and global economies are experiencing high inflation, increasing interest rates and recessions. Such conditions can adversely affect our revenue, results of operations and overall financial growth. Our business can be affected by a number of factors that are beyond our control such as general geopolitical, economic and business conditions and conditions in the financial services market, which each could materially impact our business, financial condition, cash flows and results of operations. Additionally, many lenders and institutional investors, at times, have reduced funding to borrowers, including other financial institutions. A constriction on future lending by banks or investors could result in higher interest rates on future debt obligations, restrict our ability to obtain sufficient financing to meet our long-term operational and capital needs or limit our ability in the future to consummate strategic acquisitions. Any uncertainty in the credit markets or increase in interest rates could also negatively impact the ability of our customers and vendors to finance their operations on acceptable terms or at all which, in turn, could result in a decline in our sales and in our ability to obtain necessary raw materials and components. Our customers may also reduce their purchases of our products because of increased costs from inflation or uncertainties relating to the current recessionary environment. The occurrence of any of the foregoing risks could have an adverse effect on our business, financial condition, cash flows or results of operations.

Implementation of our acquisition strategy may not be successful, which could affect our ability to increase our revenues, reduce our profitability or lead to significant impairment charges.

One of our strategies has been and is to increase our revenues and expand our markets through acquisitions that will provide us with complementary products. We expect to face competition for acquisition candidates that may limit the number of acquisition opportunities available to us and may result in higher acquisition prices. In addition, our announcement in March 2022 that our Board is reviewing strategic alternatives available to the Company may impact our ability to complete acquisitions. We cannot be certain that we will be able to identify, acquire or profitably manage additional acquired companies or successfully integrate such additional acquired companies without substantial costs, delays or other problems. Acquisitions may also involve a number of special risks, including: adverse effects on our reported operating results; use of cash; diversion of management's attention; loss of key personnel at acquired companies; or unanticipated management or operational problems or legal liabilities. In addition, uncertainty in the credit markets and increases in interest rates could negatively impact our ability to finance acquisitions on acceptable terms or at all.

Moreover, there can be no assurance that companies we have previously acquired or that we may acquire in the future ultimately will achieve the revenues, profitability or cash flows, or generate the synergies upon which we justify our investment in them; as a result, any such under-performing acquisitions could result in impairment charges which would adversely affect our results of operations. The acquired assets of businesses include goodwill and indefinite-lived intangible assets that are required to be tested for impairment at least annually or more frequently if impairment indicators are present. Events or changes that could indicate that the carrying value of our goodwill or indefinite-lived intangible assets may not be recoverable include reduced future cash flow estimates, slower growth rates in industry segments in which we participate and a decline in our stock price and market capitalization. In addition, any prolonged material disruption of our employees, distributors, suppliers or customers, whether due to COVID-19 or otherwise, would negatively impact our global sales and operating results and could lead to impairments and other valuation allowances relating to acquired businesses as well as our overall business.

Risks Related to our Operations

If we cannot continue operating our manufacturing facilities at current or higher levels, our results of operations could be adversely affected.

We operate a number of manufacturing facilities for the production of our products. The equipment and management systems necessary for such operations may break down, perform poorly or fail, resulting in fluctuations in manufacturing efficiencies. Such fluctuations may affect our ability to deliver products to our customers on a timely basis, which could have a material adverse effect on our business, financial condition, cash flows or results of operations. We are working to continuously enhance and improve lean manufacturing techniques as part of the CIRCOR Operating System. We believe that this process produces meaningful reductions in manufacturing costs. However, continuous improvement of these techniques may cause short-term inefficiencies in production. If we are not successful in continuously improving our processes, our results of operations may suffer.

Further, a catastrophic event could result in the loss of the use of all or a portion of one of our manufacturing facilities. Although we carry property and business interruption insurance, our coverage may not be adequate to compensate us for all losses that may occur. Any of these events individually or in the aggregate could have a material adverse effect on our business, financial condition and operating results.

If we cannot pass on higher raw material or manufacturing costs to our customers, we may become less profitable.

One of the ways we attempt to manage the risk of higher raw material and manufacturing costs is to increase selling prices to our customers. The markets we serve are extremely competitive and customers may not accept price increases or may look to alternative suppliers, which may negatively impact our profitability and revenues. This risk may be heightened in the current highly inflationary and recessionary economic environment.

The inability of our suppliers to provide us with adequate quantities of materials to meet our customers' demands on a timely basis has had, and may continue to have, an adverse effect on our business; in addition, if the quality of the materials provided does not meet our standards, we may lose customers or experience lower profitability.

Some of our customer contracts require us to compensate those customers if we do not meet specified delivery obligations. We rely on numerous suppliers to provide us with our required materials and in many instances these materials must meet certain specifications. In addition, we continue to increase our dependence on lower cost foreign sources of raw materials, components, and, in some cases, completed products. While we actively manage our supply chain, having a geographically diverse supply base inherently poses significant logistical challenges, and we could experience diminished supplier performance resulting in longer than expected lead times and/or product quality issues. In addition, the potential physical effects of climate change, such as increased frequency and severity of storms, floods and other climatic events, natural disasters, acts of war or political instabilities or pandemics or other illness outbreaks, could disrupt our supply chain, and cause our suppliers to incur significant costs in preparing for or responding to these effects or events. These or other similar changes or events could lead to increased costs. The occurrence of such factors could have a negative impact on our ability to deliver products to customers within our committed time frames and could adversely impact our results of operations, financial condition and cash flows.

For example, during the second half of 2021, the COVID-19 pandemic, as well as labor shortages and logistics constraints, contributed to supply chain shortages and negatively impacted our results of operations as we faced unexpected difficulties obtaining raw material, castings, and components across CIRCOR. In the near term, we anticipate continued greater than usual uncertainty as a result of global supply chain challenges and that shortages of components and raw materials may continue to negatively impact the operation of our business.

If we experience delays in introducing new products or if our existing or new products do not achieve or maintain market acceptance, our revenues may decrease.

Our industries are characterized by: intense competition; changes in end-user requirements; technically complex products; and evolving product offerings and introductions.

We believe our future success depends, in part, on our ability to anticipate or adapt to these factors and to offer, on a timely basis, mission-critical products that meet customer demands. Failure to develop new and innovative products or to custom design existing products could result in the loss of existing customers to competitors or the inability to attract new business, either of which may adversely affect our revenues. The development of new or enhanced products is a complex and uncertain process requiring the anticipation of technological and market trends. We may experience design, manufacturing, marketing or other difficulties, such as an inability to attract a sufficient number of qualified engineers, which could delay or prevent our development, introduction or marketing of new products or enhancements and result in unexpected expenses.

If we fail to manufacture and deliver high quality products in accordance with industry standards, we will lose customers.

Product quality and performance are a priority for our customers since many of our product applications involve caustic or volatile chemicals and, in many cases, involve processes that require precise control of fluids. Our products are used in the aerospace, military, commercial aircraft, analytical equipment, oil & gas refining, power generation, chemical processing and maritime industries. These industries require products that meet stringent performance and safety standards, such as the standards of the International Organization for Standardization, Underwriters' Laboratory, American National Standards Institute, American Society of Mechanical Engineers and the European Pressure Equipment Directive. If we fail to maintain and enforce quality control and testing procedures, our products will not meet these stringent performance and safety standards that are required by many of our customers. Non-compliance with the standards could result in a loss of current customers and damage our ability to attract new customers, which could have a material adverse effect on our business, financial condition, cash flows or results of operations.

We rely on information technology in our operations, and any material failure, inadequacy, interruption or security failure of that technology could harm our business, financial condition, cash flows and results of operations.

We rely on information technology networks and systems, including systems of third parties and the Internet, to process, transmit and store electronic information, and manage or support a variety of business processes, including operational and financial transactions and records, personal identifying information, payroll data and workforce scheduling information. We purchase some of our information technology from vendors, on whom our systems depend. We rely on commercially available systems, software, tools and monitoring to provide security for the processing, transmission and storage of Company and customer information. Although we have taken steps to protect the security of our information systems and the data maintained in those systems, no such measures can eliminate the possibility of the systems' improper functioning or the improper access or disclosure of confidential or personally identifiable information such as in the event of cyber-attacks. Security breaches, whether through physical or electronic break-ins, computer viruses, ransomware, impersonation of authorized users, attacks by hackers or other means, can create system disruptions or shutdowns or the unauthorized disclosure of confidential information. Additionally, outside parties frequently attempt to fraudulently induce employees, suppliers or customers to disclose sensitive information or take other actions, including making fraudulent payments or downloading malware, by using "spoofing" and "phishing" emails or other types of attacks. Our employees have been and likely will continue to be targeted by such fraudulent activities. Outside parties may also subject us to distributed denial of services attacks or introduce viruses or other malware through "trojan horse" programs to our users' computers in order to gain access to our systems and the data stored therein. Because the techniques used to obtain unauthorized access, disable or degrade service, or sabotage systems change frequently and continuously become more sophisticated, often are not recognized until launched against a target and may be difficult to detect for a long time, we may be unable to anticipate these techniques or to implement adequate preventive or detective measures.

When Company, personal or otherwise protected information is improperly accessed, tampered with or distributed, we face significant financial exposure, including incurring significant costs to remediate possible injury to the affected parties. We may also be subject to sanctions and civil or criminal penalties if we are found to be in violation of the privacy or security rules under federal, state, or international laws protecting confidential information. Any failure to maintain proper functionality and security of our information systems could result in the loss of trade secrets or other proprietary or competitively sensitive information, compromise personally identifiable information regarding customers or employees, interrupt our operations, damage our reputation, subject us to liability claims or regulatory penalties. The costs associated with maintaining robust information security mechanisms and controls are also increasing and are likely to increase further in the future. We continuously seek to maintain a robust program of information security and controls, but the impact of a material information technology event could have a material adverse effect on our competitive position, reputation, results of operations, financial condition and cash flows.

Terrorist activity, acts of war, and/or political instability around the world could cause economic conditions to deteriorate and adversely impact our businesses.

In the past, terrorist attacks have negatively impacted general economic, market and political conditions. Terrorist acts, acts of war or political instability (wherever located around the world) could cause damage or disruption to our business, our facilities or our employees which could significantly impact our business, financial condition or results of operations. The potential for future terrorist attacks, the national and international responses to terrorist attacks, political instability, and other acts of war or hostility, have created many economic and political uncertainties, which could adversely affect our business and results of operations in ways that cannot presently be predicted. U.S. Government imposed sanctions and export restrictions on certain businesses in Russia as a result of its actions in Ukraine could cause us to experience adverse effects with respect to certain business partners or customers, including inability to ship, or collect payments for, completed orders. In addition, with manufacturing facilities located worldwide, including facilities located in North America, Western Europe, Morocco, China, and India, we may be impacted by terrorist actions not only against the United States but in other parts of the world as well. In some cases, we are not insured for losses and interruptions caused by terrorist acts and acts of war.

The impact of the COVID-19 pandemic has adversely impacted, and continues to pose risks to, our business, results of operations and financial condition.

The situation relating to the COVID-19 pandemic and its potential effects on our business and financial results remains dynamic. The broader implications for our business and results of operations remain uncertain and will depend on many factors outside our control, including, without limitation, the timing, extent, trajectory and duration of the pandemic (including COVID-19 variants), the development, availability and effectiveness of treatments and vaccines, the imposition of protective public safety measures, and the impact of the pandemic on the global economy and enterprise and consumer behaviors. We may face the same risks with respect to any future pandemics or other illness outbreaks. If these and other effects of the COVID-19 pandemic, including its effect on broader economies, financial markets and overall demand environment for our products, continue or worsen, or if any future pandemic or other illness outbreak were to occur, our business, financial condition, results of operations, or cash flows could be materially and adversely affected.

The COVID-19 pandemic or any other future pandemic or other illness outbreak may further increase the likelihood and severity of other risks discussed in this “Risk Factors” section, including but not limited to risks related to competition, development of the market for and demand for our products, delays in the development and production of our products, availability and cost of raw materials required to produce our products and other supply chain disruptions, labor shortages reliance on third parties, our international scale, our exposure to currency exchange rate fluctuations and the credit risks of our customers and resellers, and volatility in the capital markets.

Risks Related to our International Operations

If we are unable to continue operating successfully overseas or to successfully expand into new international markets, our revenues may decrease.

We derive a significant portion of our revenue from sales outside the United States. In addition, one of our key growth strategies is to sell our products in international markets not significantly served by us in portions of Europe, Latin America and Asia. We market our products and services outside of the United States through direct sales, distributors, and technically trained commissioned representatives. We may not succeed in our efforts to further penetrate these markets. Moreover, conducting business outside the United States is subject to risks, including currency exchange rate fluctuations; changes or instability in regional, political or economic conditions, outbreak of war or expansion of hostilities, trade protection measures such as tariffs or import or export restrictions; and complex, varying and changing government regulations and legal standards and requirements, particularly with respect to price protection, competition practices, export control regulations and restrictions, customs and tax requirements, immigration, anti-boycott regulations, data privacy, intellectual property, anti-corruption and environmental compliance, including U.S. customs and export regulations and restrictions and the Foreign Corrupt Practices Act. Additionally, the U.S. Government continues to impose and/or consider imposing sanctions on certain businesses and persons in Russia. We continue to monitor and evaluate additional sanctions and export restrictions that may be imposed by the U.S. Government and any responses from Russia that could directly affect our supply chain, or our ability to continue delivering products to or receiving payments from our business partners or customers, including customers who may decide to completely withhold contract payments owed to us. The occurrence of any of these factors could materially and adversely affect our operations.

Our international activities expose us to fluctuations in currency exchange rates that could adversely affect our results of operations and cash flows.

Our international manufacturing and sales activities expose us to changes in foreign currency exchange rates. Our major foreign currency exposures involve the markets in Western Europe and Asia. Fluctuations in foreign currency exchange rates could result in our (i) paying higher prices for certain imported goods and services, (ii) realizing lower prices for any sales denominated in currencies other than U.S. dollars, (iii) realizing lower net income, on a U.S. dollar basis, from our international operations due to the effects of translation from weakened functional currencies, and (iv) realizing higher costs to settle transactions denominated in other currencies. Any of these risks could adversely affect our results of operations and cash flows.

A change in international governmental policies or restrictions could result in decreased availability and increased costs for certain components and finished products that we purchase from sources in foreign countries, which could adversely affect our profitability.

Like most manufacturers of flow control products, we attempt, where appropriate, to reduce costs by seeking lower cost sources of certain components and finished products. Many such sources are located in developing countries such as India and China, where a change in governmental approach toward U.S. trade could restrict the availability to us of such sources. In addition, periods of war or other international tension and global health pandemics could interfere with international freight operations and hinder our ability to purchase such components and products. A decrease in the availability of these items could hinder our ability to timely meet our customers' orders. We attempt, when possible, to maintain alternate sources for these components and products and the capability to produce such items in our own manufacturing facilities. However, the cost of obtaining such items from alternate sources or producing them ourselves is often considerably greater, and a shift toward such higher cost production could therefore adversely affect our profitability.

Risks Related to our Business Strategy

Our ability to execute our strategy is dependent upon our ability to attract, train and retain qualified personnel.

Our continued success depends, in part, on our ability to identify, attract, motivate, train and retain qualified personnel in key functions and geographic areas, including the members of our senior management team. In particular, we are dependent on our ability to recruit and retain qualified engineers with the requisite education, background and industry experience to assist in the development, enhancement, introduction and manufacture of our products.

Failure to attract, train and retain qualified personnel, whether as a result of an insufficient number of qualified candidates or the allocation of inadequate resources to training, integration and retention, could impair our ability to execute our business strategy and could have an adverse effect on our business prospects. Our success also depends to a large extent upon our ability to attract and retain key executives. The loss of the services of one or more of these key employees could have an adverse effect, at least in the short to medium term, on significant aspects of our business, including the ability to manage our business effectively and the successful execution of our strategies. Our ability to attract and retain qualified personnel has been, and may continue to be, negatively affected by our Board's pending strategic alternative review process. If we fail to retain qualified personnel, particularly key employees, we could incur disruptions to the completion of certain initiatives and we could incur significant costs in hiring, training, developing and retaining their replacements.

Recent changes in the Company's executive management team may be disruptive to, or cause uncertainty in, our business, results of operations and the price of the Company's common stock.

On December 10, 2021, Abhishek Khandelwal announced his resignation from his position as Chief Financial Officer of the Company effective December 31, 2021, and the Company's Board of Directors appointed Arjun Sharma, Senior Vice President of Business Development as the Company's interim Chief Financial Officer effective January 1, 2022. Subsequently, on January 19, 2022, Mr. Scott A. Buckhout stepped down from his position as Chief Executive Officer of the Company, effective immediately, and the Company's Board of Directors promoted Aerospace & Defense Group President Tony S. Najjar to the position of Chief Operating Officer and appointed him as interim Chief Executive Officer effective immediately. On August 10, 2022, the Company's Board of Directors approved the change of Mr. Najjar's title to President & Chief Executive Officer and Mr. Sharma's title to Chief Financial Officer and Senior Vice President of Business Development. These changes in the Company's executive management team may be disruptive to, or cause uncertainty in, the Company's business, and any additional changes to the executive management team could have a negative impact on the Company's ability to manage and grow its business effectively. Any such disruption or uncertainty or difficulty in efficiently and effectively filling key roles could have a material adverse impact on the Company's results of operations and the price of the Company's common stock.

Our review of strategic alternatives may not result in the identification or completion of a transaction, or create additional value for our stockholders, and the process may have an adverse effect on our business.

On March 14, 2022, the Company announced that the Board of Directors had initiated a review of potential strategic alternatives to enhance shareholder value. At this time it has not made any decisions as to any potential strategic alternatives. We cannot make any assurance that the Board's review will result in a transaction or other strategic change to the Company or its business, or that the outcome of the review will provide greater value to our stockholders than the current price of our common stock. The strategic review process may require significant resources and expenses. In addition, speculation and uncertainty regarding the strategic review process may cause or result in disruption of our business; distraction of our employees; difficulty in recruiting, hiring, motivating, and retaining qualified personnel; difficulty in maintaining or negotiating and consummating new business or strategic relationships or transactions; potential litigation; and increased stock price volatility. If we are unable to mitigate these or other potential risks related to the uncertainty caused by the strategic review process, it may adversely affect our business or adversely impact our business, financial condition, results of operations and cash flows.

Risks Related to Legal, Regulatory and Compliance Matters

We face risks from product liability lawsuits that may adversely affect our business.

We, like other manufacturers, face an inherent risk of exposure to product liability claims in the event that the use of our products results in personal injury, property damage or business interruption to our customers. We may be subjected to various product liability claims, including, among others, asbestos-related claims, claims that our products include inadequate or improper instructions for use or installation, or inadequate warnings concerning the effects of the failure of our products. Although we maintain quality controls and procedures, including the testing of raw materials and safety testing of selected finished products, we cannot be certain that our products will be free from defect. In addition, in certain cases, we rely on third-party manufacturers for our products or components of our products. Although we have liability insurance coverage, we cannot be certain that this insurance coverage will continue to be available to us at a reasonable cost or, if available, will be adequate to cover any such liabilities. For example, liability insurance typically does not afford coverage for a design or manufacturing defect unless such defect results in injury to person or property. We generally attempt to contractually limit liability to our customers to risks that are insurable but are not always successful in doing so. Similarly, we generally seek to obtain contractual indemnification from our third-party suppliers, and for us to be added as an additional insured party under such parties' insurance policies. Any such indemnification or insurance is limited by its terms and, as a practical matter, is limited to the credit worthiness of the indemnifying or insuring party. In the event that we do not have adequate insurance or contractual indemnification, product liabilities could have a material adverse effect on our business, financial condition, cash flows or results of operations.

The costs of complying with existing or future governmental regulations on importing and exporting practices and of curing any violations of these regulations, could increase our expenses, reduce our revenues or reduce our profitability.

We are subject to a variety of laws and international trade practices, including regulations issued by certain United States governmental agencies and authorities in the European Union. We cannot predict the nature, scope or effect of future regulatory requirements to which our international trading practices might be subject or the manner in which existing laws might be administered or interpreted. Future regulations could limit the countries into which certain of our products may be sold or could restrict our access to, and increase the cost of obtaining products from, foreign sources. We continue to monitor and evaluate additional sanctions and export restrictions that may be imposed by the U.S. Government with respect to Russia, and any responses from Russia, that could impact our business. Sanctions or restrictions could cause us to be unable to complete contractual commitments to end customers, cause our end customers to fail to compensate us for previously ordered or delivered products, or cause funds or products to be subjected to legal holds. The aggregate revenue from customers in Russia and Ukraine for each of the fiscal years ended 2022 and 2021 was less than 1% of consolidated net revenues, primarily related to our Downstream Oil & Gas business in the Industrial reporting segment. Currently we have a pending project in Russia that could result in a \$4.0 million reversal of unbilled and other receivable if tighter sanctions or restrictions prevented us from delivering the project and receiving payment. In addition, actual or alleged violations of such regulations could result in enforcement actions and/or financial penalties that could result in substantial costs.

If we incur higher costs as a result of trade policies, treaties, government regulations or tariffs, we may become less profitable.

There is currently significant uncertainty about the future relationship between the United States and China, including with respect to trade policies, treaties, government regulations and tariffs. The past U.S. presidential administration had called for substantial changes to U.S. foreign trade policy and had implemented greater restrictions on international trade and significant changes in tariffs on goods imported into the U.S. Under the current administration, we expect that tariff increases will primarily impact our Industrial segment. We are unable to predict whether or when additional tariffs will be imposed or the impact of any such future tariff changes.

The costs of complying with existing or future environmental regulations and curing any violations of these regulations could increase our expenses or reduce our profitability.

We are subject to a variety of environmental laws relating to the storage, discharge, handling, emission, generation, use and disposal of chemicals, solid and hazardous waste and other toxic and hazardous materials used to manufacture, or resulting from the process of manufacturing, our products. We cannot predict the nature, scope or effect of future regulatory requirements to which our operations might be subject or the manner in which existing or future laws will be administered or interpreted. Future regulations could be applied to materials, products or activities that have not been subject to regulation previously. The costs of complying with new or more stringent regulations, or with more vigorous enforcement of these or existing regulations, could be significant.

Environmental laws require us to maintain and comply with a number of permits, authorizations and approvals and to maintain and update training programs and safety data regarding materials used in our processes. Violations of these requirements could result in financial penalties and other enforcement actions. We also could be required to halt one or more portions of our operations until a violation is cured. Although we attempt to operate in compliance with these environmental laws, we may not succeed in this effort at all times. The costs of curing violations or resolving enforcement actions that might be initiated by government authorities could be substantial.

Regulations related to “conflict minerals” may cause us to incur additional expenses and could limit the supply and increase the cost of certain metals used in manufacturing our products.

Under the conflict minerals rule, public companies must disclose whether specified minerals, known as conflict minerals, are necessary to the functionality or production of products manufactured or contracted to be manufactured. The rule requires a disclosure report to be filed by May 31st of each year. The conflict minerals rule could affect sourcing at competitive prices and availability in sufficient quantities of certain minerals used in the manufacture of our products, including tantalum, tin, gold and tungsten. The number of suppliers who provide conflict-free minerals is limited. In addition, there may be material costs associated with complying with the disclosure requirements, such as costs related to determining the source of certain minerals used in our products, as well as costs of possible changes to products, processes, or sources of supply as a consequence of such verification activities. As our supply chain is complex, we may not be able to sufficiently verify the origins of the relevant minerals used in our products through the due diligence procedures that we implement, which may harm our reputation. In addition, we may encounter challenges to satisfy those customers who require that all of the components of our products be certified as conflict-free, which could place us at a competitive disadvantage if we are unable to do so.

Risks Related to our Common Stock

The trading price of our common stock continues to be volatile, and investors in our common stock may experience substantial losses.

The trading price of our common stock may be, and, in the past, has been volatile. Our common stock could decline or fluctuate in response to a variety of factors, including, but not limited to: our Board's pending strategic review process; our failure to meet our performance estimates or performance estimates of securities analysts; changes in financial estimates of our revenues and operating results or buy/sell recommendations by securities analysts; the timing of announcements by us or our competitors concerning significant product line developments, contracts or acquisitions or publicity regarding actual or potential results or performance; fluctuation in our quarterly operating results caused by fluctuations in revenue and expenses; substantial sales of our common stock by our existing stockholders; general stock market conditions; rising interest rates or inflation; our prior restatement of our financials; and fluctuations in oil and gas prices or other economic or external factors. While we attempt in our public disclosures to provide forward-looking information in order to enable investors to anticipate our future performance, such information by its nature represents our good-faith forecasting efforts. As a result, our actual results have differed materially, and going forward could differ materially, from our forecasts, which could cause further volatility in the value of our common stock.

In recent years the stock market as a whole has experienced dramatic price and volume fluctuations. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of their securities. This type of litigation could result in substantial costs and a diversion of management attention and resources.

Risks Related to our Indebtedness

If we are unable to generate sufficient cash flow, we may not be able to service our debt obligations, including making payments on our outstanding term loan.

Our ability to make payments of principal and interest on our indebtedness when due, including the significant indebtedness that we incurred in connection with our acquisition of Colfax Corporation's Fluid Handling business ("FH"), depends upon our future performance, which will be subject to general economic conditions (including recovery from the COVID-19 pandemic, increasing inflation and interest rates and recessionary risks), industry cycles and financial, business and other factors affecting our consolidated operations, many of which are beyond our control. If we are unable to generate sufficient cash flow from operations in the future to service our outstanding debt, we may be required to, among other things:

- seek additional financing in the debt or equity markets;
- refinance or restructure all or a portion of our indebtedness;
- divert funds that would otherwise be invested in our operations;
- sell selected assets; or
- reduce or delay planned capital expenditures or operating expenditures.

Such measures might not be sufficient to enable us to service our debt, which could negatively impact our financial results. In addition, we may not be able to obtain any such financing, refinancing or complete a sale of assets on economically favorable terms or at all. In the case of financing or refinancing, favorable interest rates will be dependent on the health of the debt capital markets and our credit rating. Our ability to obtain such financing or refinancing may be negatively impacted by current disruptions in the credit markets, and our costs of such financing or refinancing may not be on economically acceptable or desirable terms because of increasing interest rates.

Our existing indebtedness could also have the effect, among other things, of reducing our flexibility to respond to changing business and economic conditions, reducing funds available for working capital, capital expenditures, acquisitions and other general corporate purposes or creating competitive disadvantages relative to other companies with lower debt levels.

Our credit agreement requires that we maintain certain ratios and limits our ability to make acquisitions, incur debt, pay dividends, make investments, sell assets or merge.

Our credit agreement, dated December 20, 2021, amended on April 8, 2022, and May 27, 2022 (as amended, the "Credit Agreement"), governs our senior secured term loan and senior secured revolving credit facility. This agreement includes provisions which place limitations on certain activities, including, without limitation, our ability to: incur additional indebtedness; create liens or encumbrances on our assets; provide guarantees; make certain investments, loans and acquisitions; pay certain dividends or redeem, repurchase or retire certain capital stock or certain indebtedness; engage in certain transactions with our affiliates; enter into certain restrictive agreements; or dispose of or sell assets; or enter into mergers or similar transactions. These restrictions may limit our ability to operate our business and may prohibit or limit our ability to execute our business strategy, compete, enhance our operations, take advantage of potential business opportunities as they arise or meet our capital needs. Furthermore, future debt instruments or other contracts could contain more restrictive financial or other covenants. The breach of any of these covenants by us or the failure by us to meet any of these conditions or requirements could result in a default under any or all of our indebtedness, which could result in the lenders thereunder ending their obligation to make loans to us and declaring any outstanding indebtedness under the credit agreement or other applicable debt instrument immediately due and payable. Alternatively, our lenders could charge us substantial consent fees to secure amendments or waivers for our non-compliance with financial or other debt covenants. If we are unable to service our indebtedness, our business, financial condition, cash flows and results of operations would be materially adversely affected.

Discontinuation, replacement or reform of LIBOR could affect interest rates under our credit agreement and financing costs.

Borrowings under the Credit Agreement are made at variable rates, based on London Interbank Offered Rate ("LIBOR") as a reference rate. The ICE Benchmark Administration Limited, which administers LIBOR, has announced that it plans to cease publication of the remaining LIBOR tenors on June 30, 2023. In light of this announcement, the future of LIBOR at this time is uncertain and any changes in the methods by which LIBOR is determined or regulatory activity related to LIBOR's phaseout could cause LIBOR to perform differently than in the past or cease to exist. In the United States the Alternative Reference Rate Committee convened by the US Federal Reserve identified the Secured Overnight Financing Rate ("SOFR") as its preferred alternative reference rate to the US Dollar LIBOR. Our Credit Agreement includes a provision for determining the reference rate in the event LIBOR is discontinued, including a potential transition to the use of SOFR as the new reference rate. Prior to the phase-out of LIBOR, we expect to reach agreement with our lenders to use SOFR in lieu of LIBOR. We do not expect a significant change to the effective interest rate on our borrowing as a result of any replacement reference rate, however, it is not possible to predict the effect of these changes, other reforms or the establishment of alternative reference rates. Whether SOFR attains market acceptance as a LIBOR replacement tool is uncertain. In the event we are unable to reach agreement on a replacement reference rate, the loans outstanding under the Credit Agreement from time to time using LIBOR as a reference rate will convert to the base rate, which could result in higher interest rates on these term loans and any such revolving loans.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We maintain 18 major manufacturing facilities worldwide, including operations located in North America, Western Europe, Morocco, China, and India. We also maintain sales offices or warehouses from which we ship finished goods to customers, distributors and commissioned representative organizations. Our executive office is located in Burlington, Massachusetts and is leased.

Our Aerospace & Defense segment has major manufacturing facilities located in North America, United Kingdom, France, and Morocco. Our Industrial segment has major facilities located in North America, Germany, India and China.

Segment	Leased	Owned	Total
Industrial	5	8	13
Aerospace & Defense	2	3	5
Total	7	11	18

In general, we believe that our properties, including machinery, tools and equipment, are in good condition, are well maintained, and are adequate and suitable for their intended uses. Our manufacturing facilities generally operate five days per week on one or two shifts. We believe our manufacturing capacity could be increased by working additional shifts and weekends and by successful implementation of our CIRCOR Operating System. We also have low-cost sources for manufacturing in India and Morocco which have capacity to fulfill our expected manufacturing needs. We believe that our current facilities will meet our near-term production requirements without the need for additional facilities.

Item 3. Legal Proceedings

For information regarding our legal proceedings refer to the first two paragraphs of Note 16, Contingencies, Commitments and Guarantees, to the consolidated financial statements included in this Annual Report, which disclosure is incorporated herein by reference. In addition, the Company has self-reported to the SEC relating to the accounting irregularities identified at the Pipeline Engineering business discussed in this Annual Report on Form 10-K. The Company continues to respond to requests for information from the SEC. At this time, it is not possible to predict the outcome of the Company's correspondence with the SEC, including whether or not any proceeding will be initiated or, if so, when or how the matter will be resolved.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

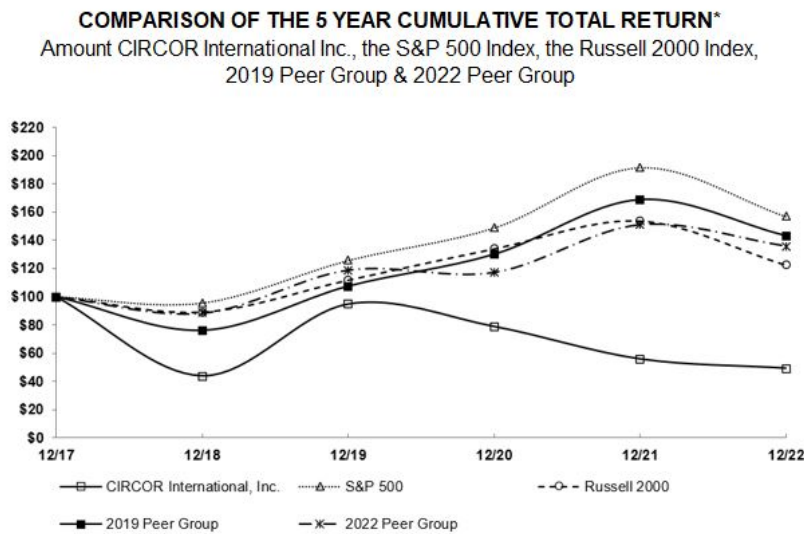
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is traded on the New York Stock Exchange ("NYSE") under the symbol "CIR".

Our Board of Directors is responsible for determining our dividend policy. The timing and level of any dividends will necessarily depend on our Board of Directors' assessments of earnings, financial condition, capital requirements and other factors, including restrictions, if any, imposed by our lenders. On February 28, 2018, we announced the suspension of our nominal dividend, as part of our capital deployment strategy.

As of March 10, 2023, there were 20,365,293 shares of our common stock outstanding and we had 45 holders of record of our common stock. We believe the number of beneficial owners of our common stock was substantially greater on that date.

The graph below compares the cumulative 5-Year total return provided stockholders on CIRCOR International, Inc.'s common stock relative to the cumulative total returns of the S&P 500 index, the Russell 2000 index, our 2019 peer group ("2019 Group"), and our 2022 peer group ("2022 Peer Group"). The companies included in the 2019 and 2022 Peer Groups are listed in footnotes below, respectively. We revised our peer group to incorporate peers relevant to the businesses we acquired in the Fluid Handling acquisition along with divestitures of non-core businesses. An investment of \$100 (with reinvestment of all dividends) is assumed to have been made in our common stock, in each index and in each of the peer groups on December 31, 2017 and its relative performance is tracked through December 31, 2022.



* \$100 invested on 12/31/2017 in stock or index, including reinvestment of dividends

	12/17	12/18	12/19	12/20	12/21	12/22
CIRCOR International, Inc.	\$ 100.00	\$ 43.76	\$ 94.99	\$ 78.96	\$ 55.83	\$ 49.22
S&P 500	100.00	95.62	125.72	148.85	191.58	156.88
Russell 2000	100.00	88.99	111.70	134.00	153.85	122.41
2019 Peer Group	100.00	76.17	107.45	130.08	168.83	143.16
2022 Peer Group	100.00	88.57	118.83	117.28	150.75	135.81

- **2019 Peer Group:** The eight companies included in the Company's 2019 Peer Group are: Alfa Laval Ab, Flowserve Corp, Gardner Denver Holdings Inc, Imi Plc, Metso Oyj, Sulzer Ag and Weir Group Plc.
- **2022 Peer Group:** The twelve companies included in the Company's Industrial Peer Group are: Crane Holdings Co, Alfa Laval Ab, Sulzer Ag and Weir Group Pl, Flowserve Corp, Iml Plc, Rotork Plc, Zurn Elkay Corp, ITT Inc., Curtiss-Wright Corp, Moog Inc, Woodward Inc, and Hexcel Corp.

Item 6. Selected Financial Data

Not Applicable.

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

See Part 1, Item 1, "Business", for additional detail on forward looking statements.

Company Overview

CIRCOR International is one of the world's leading providers of mission critical flow control products and services for the Industrial and Aerospace & Defense markets. The Company has a product portfolio of market-leading brands serving its customers' most demanding applications. CIRCOR markets its solutions directly and through various sales partners to more than 14,000 customers in approximately 100 countries. The Company has a global presence with approximately 3,100 employees and is headquartered in Burlington, Massachusetts. See Part 1, Item 1, Business, for additional information regarding the description of our business.

We organize our reporting structure into two segments: Aerospace & Defense and Industrial. Both the current and prior periods are reported under these two segments.

The Company's Aerospace & Defense segment continues to experience lingering effects of the COVID-19 pandemic, primarily in our Commercial Aerospace end markets, and impacts from volatile foreign exchange rates and interest rates. Commercial Aerospace order rates improved in 2022 compared to 2021 as demand for OEM components and aftermarket services increased with air framer production rates and aircraft utilization. We expect that a recovery to pre-pandemic levels of demand will not occur until the end of 2023. While our Defense business has been less impacted by the pandemic, we did experience a slowdown in government spending on spare parts as well as some delays on key programs which impacted our revenues in 2022. However, we expect a return to near term and long-term growth in this end market driven by our positions on key U.S. defense programs, including the Joint Strike Fighter and Columbia class submarines, strong backlog, and new product introductions in close partnership with our customers. We continue to focus on increasing our global aftermarket and deploying value-based pricing across the segment, both of which will contribute to drive growth and margin expansion.

The Company's Industrial reporting segment continues to experience the lingering effects of the COVID-19 pandemic, the ongoing conflict between Russia and Ukraine, and impacts driven by global energy inflation and volatile foreign exchange rates and interest rates. We exited 2021 with a strong backlog that positions the Industrial segment well for revenue growth in 2023 and beyond. We expect strong growth in our longer-cycle end markets, such as Commercial Marine and Downstream Oil & Gas, as we deliver on improved orders from 2022. Our General Industrial end market, which includes products that serve power generation, chemical processing, and other customers, is expected to experience moderate growth. We continue to focus on increasing our global aftermarket, deploying value-based pricing across the segment, and simplifying our organizational structure to drive growth and margin expansion.

In both reporting segments, the Company's results from operations were, and continue to be, adversely impacted by global supply chain constraints and rising inflation. In 2022, we faced unexpected difficulties in procuring certain raw material, castings, and components, additional labor constraints due to COVID-19 and a challenging labor market as well as inflation on both material and logistics. These challenges continued to evolve in 2022, in particular with inflation levels, including energy inflation, reaching multi-decade highs, and driving corresponding volatility in foreign exchange rates and interest rates. Should inflation or interest rates, or both, continue to increase higher than expected or stay high for longer than expected, the Company could face additional financial exposure. In order to mitigate the impact of these factors on our operations and financial position, we continue to implement actions across the company including, but not limited to: list price increases and surcharges, structural cost out actions, changes in suppliers from which we procure material, and manufacturing productivity through the implementation of the CIRCOR Operating System and 80/20 across the company. Finally, continuing to attract and retain diverse and talented personnel, including the enhancement of our global sales, operations, product management and engineering organizations, remains an important part of our strategy during 2023.

Finally, we continue to monitor and evaluate additional sanctions and export restrictions that may be imposed by the U.S. Government and other governments along with any responses from Russia that could directly affect our supply chain, business partners or customers. Further tightening of sanctions or restrictions could cause us to be unable to complete contractual commitments to end customers, cause our end customers to fail to compensate us for previously ordered or delivered products, or cause funds or products to be subjected to legal holds. The aggregate revenue from customers in Russia and Ukraine for each of the fiscal years ended 2022 and 2021 was less than 1% of consolidated net revenues, primarily related to our Downstream Oil & Gas business in the Industrial reporting segment. Currently we have a pending project in Russia that could result in approximately \$4.0 million reversal of unbilled revenue and other receivables if tighter sanctions or restrictions prevented us from delivering the project and receiving payment. Additionally, the conflict between Russia and Ukraine has and continues to adversely impact demand in that region, increase energy costs related to our operations, and negatively impact material cost and availability.

Basis of Presentation

All significant intercompany balances and transactions have been eliminated in consolidation. We operate and report financial information using a 52-week fiscal year ending December 31. The data periods contained within our Quarterly Reports on Form 10-Q reflect the results of operations for the 13-week, 26-week and 39-week periods which generally end on the Sunday nearest the calendar quarter-end date.

Critical Accounting Policies and Use of Estimates

The Company's discussion and analysis of its financial condition and results of operations is based upon its consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses and related disclosure of contingent liabilities. On an on-going basis, management evaluates its significant estimates, including those related to contracts accounted for under the percentage of completion method, bad debts, inventories, intangible assets and goodwill, delivery penalties, income taxes, and contingencies including litigation. Management believes goodwill, revenue recognition and income taxes to be the most complex and sensitive judgments because of their significance to the consolidated financial statements and which result primarily from the need to make estimates about the effects of matters that are inherently uncertain. Management bases its estimates on historical experience, current market and economic conditions and other assumptions that management believes are reasonable. The results of these estimates form the basis for judgments about the carrying value of assets and liabilities where the values are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

There have been no significant changes from the methodology applied by management for critical accounting estimates previously disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

For information regarding our significant accounting policies, refer to Note 2, Summary of Significant Accounting Policies, to the consolidated financial statements included in this Annual Report.

Goodwill

For goodwill, we perform an impairment assessment at the reporting unit level on an annual basis as of our October month-end or more frequently if circumstances warrant.

During the fourth quarter of 2021, we identified a change in our reporting units due to economic deviations within the Industrial business segment. Refinery valves (“RV”) and Industrial were determined to be two separate reporting units within the Industrial business segment. With the change in reporting units, we performed an impairment test prior to the change, on our previous one reporting unit, and then performed an impairment test immediately after the change on the two reporting units which also coincides with our annual impairment test date of October month end. With the change, we assigned goodwill to the Industrial and RV reporting units based on their relative fair values.

As of October 2022 month end, the Company had goodwill balances within its Industrial and A&D reporting units, with no goodwill in its RV reporting unit. For the annual goodwill assessment, we estimated the fair value of Industrial and Aerospace & Defense reporting units, using an income approach based on the present value of future cash flows. We selected this method as being the most meaningful in preparing the goodwill assessments because the use of the income approach typically generates a more precise measurement of fair value than the market approach. In applying the income approach to our accounting for goodwill, we make assumptions about the amount and timing of future expected cash flows, terminal value growth rates and appropriate discount rates. The amount and timing of future cash flows within our discounted cash flow analyses is based on our most recent operational budgets, current industry and market conditions, and other estimates of future performs. The terminal value growth rate is used to calculate the value of cash flows beyond the last projected period in our discounted cash flow analyses and reflects our best estimates for stable, perpetual growth of its reporting units. We corroborated the valuations that arose from the discounted cash flow approach by performing both a market multiple valuation and by reconciling the aggregate fair value of its reporting units to its market capitalization at the time of the test. As RV has no goodwill balance, following the \$10.5 million goodwill impairment charge recorded in 2021, we did not use an income approach, but did estimate RV's fair value using market approach for purposes of performing a reconciliation of the fair value of our reporting units to the market capitalization as of the date of our annual impairment assessment.

The fair value of Industrial and A&D reporting units exceeded the respective carrying amounts as of the date of our assessment. The growth rate assumptions utilized were consistent with growth rates within the markets that we serve. If our results significantly vary from our estimates, related projections, or business assumptions in the future due to change in industry or market conditions, we may be required to record impairment charges.

On March 29, 2020, we reorganized our reporting units and the stock price dropped below book value, which we determined were triggering events requiring an assessment of our goodwill and indefinite-lived trade names. Based on our impairment assessment as of March 29, 2020, we concluded that our goodwill in the Industrial reporting unit was impaired and, accordingly, recorded a goodwill impairment charge of \$138.1 million in the quarter ended March 29, 2020.

Revenue Recognition

Revenues are recorded based on the amount of consideration we expect to be entitled to as a result of satisfying our performance obligations. Revenue on our point in time contracts are recognized when the customer obtains control of the product, which is generally at the time of shipping. Revenues and costs on certain long-term contracts are recognized over-time using an input measure (e.g., costs incurred to date relative to total estimated costs at completion, known as the “cost-to-cost” method) as we incur costs on our contracts. We use a cost-to-cost measure of progress because it best depicts the transfer of control to the customer which occurs as it incurs costs on its contracts. Under the cost-to-cost measure of progress, revenue is recognized proportionally as costs are incurred. Contract costs include labor, materials and subcontractors’ costs, other direct costs and an allocation of overhead, as appropriate. Accounting for over-time contracts requires reliable estimates in order to estimate total contract revenue and costs. For these contracts, management reviews the progress and execution of our performance obligations at least quarterly. Management estimates the profit on a contract as the difference between the total estimated revenue and estimate at completion (“EAC”) costs and recognizes the resultant profit over the life of the contract, using the cost-to-cost EAC input method to measure progress toward complete satisfaction of a performance obligation. A change in one or more of these estimates could affect the profitability of the related contracts. Management recognizes adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance is recognized using the adjusted estimate. The impact of adjustments in contract estimates on our operating earnings may be reflected in operating expenses and/or revenue.

The transaction price for our contracts represents our best estimate of the consideration we will receive and includes assumptions regarding variable consideration as applicable. Certain of our long-term contracts contain fees or other provisions that can either increase or decrease the transaction price. We include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of our anticipated performance, historical performance, and all other information that is reasonably available to us.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry-forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Any material changes in tax rates or changes in tax laws could cause our estimates of taxes we anticipate to pay or to recover in the future to change. Any material changes could create an increase or a decrease in our effective tax rate.

In accordance with the provisions of ASC Topic 740, Income Taxes, the Company initially recognizes the financial statement effect of a tax position when, based solely on its technical merits, it is more likely than not (a likelihood of greater than fifty percent) that the position will be sustained upon examination by the relevant taxing authority. Those tax positions failing to qualify for initial recognition are recognized in the first interim period in which they meet the more likely than not standard, are resolved through negotiation or litigation with the taxing authority, or upon expiration of the statute of limitations. De-recognition of a tax position that was previously recognized occurs when an entity subsequently determines that a tax position no longer meets the more likely than not threshold of being sustained. Tax laws are complex and often subject to varied interpretations. Therefore, the ultimate outcome with respect to taxes we may owe may differ from the amounts recognized.

ASC Topic 740, Income Taxes, requires a valuation allowance to reduce deferred tax assets ("DTAs") if, based on the weight of available evidence, it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. The weight given to the potential effect of negative and positive evidence should be commensurate with the extent to which it can be objectively verified. The more negative evidence that exists, (a) the more positive evidence is necessary and (b) the more difficult it is to support a conclusion that a valuation allowance is not needed for some portion, or all, of the deferred tax asset. Should there be a cumulative loss in recent years it is considered a significant piece of negative evidence that is difficult to overcome in assessing the need for a valuation allowance.

The Company recognized a valuation allowance for the German and the U.S. net DTAs to the extent of reversing DTLs during the year ended December 31, 2020. The Company continued to maintain a valuation allowance against its deferred tax assets in Germany and the U.S. as both jurisdictions remain in a cumulative three year loss position at December 31, 2022. The Company calculated the valuation allowance based on the reversal of temporary differences. The Company concluded that the negative evidence associated with the history of losses outweighed any positive evidence as of December 31, 2022. Therefore, the Company has not relied on projections of future taxable income in our assessment of the realization of deferred tax assets at December 31, 2022. The Company maintained a valuation allowance related to the German deferred tax assets of \$3.9 million and \$13.2 million, as of December 31, 2022 and December 31, 2021, respectively. The Company maintained a valuation allowance related to the U.S. deferred tax assets of \$82.5 million and \$73.1 million, as of December 31, 2022 and December 31, 2021, respectively. For other jurisdictions there are no temporary differences to consider for the valuation allowance.

Results of Operations

The following tables present information on net revenues and operating income of our business segments, along with a reconciliation of total segment operating income to the Company's consolidated operating income. For information regarding our segment determination refer to Note 18, Business Segment and Geographical Information, of the consolidated financial statements included in this Annual Report.

2022 Compared With 2021

Consolidated Operations

(in thousands)	2022	2021	Total Change	Operations	Foreign Exchange
Net Revenues					
Industrial	\$ 504,204	\$ 506,126	\$ (1,922)	\$ 32,964	\$ (34,886)
Aerospace & Defense	282,715	252,541	30,174	38,211	(8,037)
Consolidated Net Revenues	<u>\$ 786,919</u>	<u>\$ 758,667</u>	<u>\$ 28,252</u>	<u>\$ 71,175</u>	<u>\$ (42,923)</u>

Net revenues in 2022 were \$786.9 million, an increase of \$28.3 million from 2021 from improved operational results of \$71.2 million driven primarily by improved pricing and increased volume, partially offset by unfavorable foreign exchange of \$42.9 million.

Segment Results

(in thousands)	2022	2021	Change
Net Revenues			
Industrial	\$ 504,204	\$ 506,126	\$ (1,922)
Aerospace & Defense	282,715	252,541	30,174
Consolidated Net Revenues	<u>\$ 786,919</u>	<u>\$ 758,667</u>	<u>\$ 28,252</u>
Operating Income			
Industrial - Segment Operating Income	\$ 49,302	\$ 28,896	\$ 20,406
Aerospace & Defense - Segment Operating Income	63,584	56,073	7,511
Corporate expenses	(25,384)	(30,638)	5,254
Subtotal	87,502	54,331	33,171
Special restructuring charges	11,066	4,234	6,832
Special other (recoveries) charges, net	(30,079)	20,038	(50,117)
Special and restructuring (recoveries) charges, net (1)	(19,013)	24,272	(43,285)
Restructuring related inventory charges (recoveries), net	2,757	599	2,158
Goodwill impairment charges	—	10,500	(10,500)
Acquisition amortization	36,338	41,772	(5,434)
Acquisition depreciation	4,614	6,511	(1,897)
Restructuring, impairment and other cost, net	43,709	59,382	(15,673)
Consolidated Operating Income (Loss)	<u>\$ 62,806</u>	<u>\$ (29,323)</u>	<u>\$ 92,129</u>
Consolidated Operating Margin	8.0 %	(3.9)%	

(1) See Note 5, Special and Restructuring (Recoveries) Charges, net in the consolidated financial statements included in this Annual Report, for additional details.

Industrial Segment

(in thousands, except percentages)	2022	2021	Change
Net Revenues as reported	\$ 504,204	\$ 506,126	\$ (1,922)
Segment Operating Income as reported	49,302	28,896	20,406
Segment Operating Margin as reported	9.8 %	5.7 %	
Orders	\$ 599,014	\$ 595,410	\$ 3,604

Industrial segment revenues decreased \$1.9 million, or less than 1%, in 2022 compared to 2021. A minimal increase in the Pumps businesses was offset by a decrease of 1% in the Valves businesses. Segment revenues, excluding the impact of the exited Pipeline Engineering business and unfavorable foreign exchange, increased \$44.2 million or 9% largely driven by value-based pricing initiatives.

Industrial segment operating income increased \$20.4 million, or 71%, in 2022 compared to 2021. The increase was primarily driven by an increase in the Valves businesses which was largely due to the exit of the loss-making Pipeline Engineering business and improved pricing offsetting increased material and freight inflation.

Industrial segment orders increased \$3.6 million, or 1%, in 2022 compared to 2021. The increase was primarily driven by a 9% increase in the Pumps businesses partially offset by a 12% decrease in the Valves businesses. Segment orders, excluding the impact of the exited Pipeline Engineering business and unfavorable foreign exchange, increased \$66.0 million, or 12%, in 2022 compared to 2021.

Aerospace & Defense Segment

(in thousands, except percentages)

	2022	2021	Change
Net Revenues	\$ 282,715	\$ 252,541	\$ 30,174
Segment Operating Income	63,584	56,073	7,511
Segment Operating Margin	22.5 %	22.2 %	
Orders	\$ 308,207	\$ 255,168	\$ 53,039

Aerospace & Defense segment net revenues increased by \$30.2 million, or 12% in 2022 compared to 2021. The increase was primarily driven by a 33% increase in the Commercial Aerospace businesses partially offset by a 1% decrease in the Defense businesses. Segment revenue excluding the impact of foreign exchange increased \$38.2 million, or 15%, in 2022 compared to 2021.

Segment operating income increased \$7.5 million, or 13%, in 2022 compared to 2021. The increase was primarily driven by higher volume in the Commercial Aerospace business combined with improved pricing offsetting material and freight inflation.

Aerospace & Defense segment orders increased \$53.0 million, or 21%, in 2022 compared to 2021. The increase was driven by a 27% and 17% increase in our Commercial Aerospace and Defense businesses, respectively. Segment orders excluding the impact of foreign exchange increased \$62.3 million, or 24%, in 2022 compared to 2021.

Corporate Expenses

Corporate expenses decreased \$5.3 million to \$25.4 million for 2022. The decrease was driven largely by lower compensation and benefit costs.

Special and Restructuring (Recoveries) Charges, net

During 2022, the Company recorded a total of \$19.0 million in special and restructuring recoveries compared to \$24.3 million of charges in 2021. The recoveries recorded in 2022 were due to the gain on real estate sales partially offset by the Pipeline Engineering investigation and restatement costs, debt amendment charges and the strategic alternative evaluation. The charges recorded in 2021 were related to debt refinancing, the sale of two Industrial product lines, the write off of an aged receivable, and cost saving initiatives. In our consolidated statements of operations, these charges are recorded in special and restructuring charges (recoveries), net. These special and restructuring (recoveries) charges are described in further detail in Note 5, Special and Restructuring (Recoveries) Charges, net, in the consolidated financial statements included in this Annual Report.

Restructuring, impairment and other costs, net

During 2022, the Company recorded a total of \$43.7 million of restructuring and other costs, net, including \$2.8 million of restructuring related inventory charges in our Industrial business. The remaining charges represent plant, property, and equipment depreciation related to the step-up in fair value as part of our acquisition of Colfax Corporation's Fluid Handling ("FH") business and intangible amortization in connection with acquisitions subsequent to December 31, 2011. These charges are recorded in either selling, general and administrative expenses or cost of revenues based upon the nature of the underlying asset.

Interest Expense, Net

Interest expense, net increased \$12.5 million from 2021 to \$44.9 million in 2022. The change in interest expense was primarily due to higher debt balances and increased interest rates throughout the year.

Other Income, Net

Other income, net was \$5.7 million for 2022 compared to \$3.8 million for 2021. The \$1.9 million increase primarily relates to favorable exchange rates partially offset with lower returns on pension assets and increased pension interest costs.

Comprehensive Income (Loss)

Comprehensive income increased \$45.4 million, from a comprehensive loss of \$21.3 million for the year-ended December 31, 2021 to comprehensive income of \$24.1 million for the year-ended December 31, 2022. This change was primarily driven by a \$81.0 million increase in net income caused by a higher revenue, decrease of \$10.5 million impairment of goodwill, a \$0.9 million decrease in our income tax provision and a \$1.4 million decrease in net loss from our discontinued operations, a \$43.3 million increase in special and restructuring recoveries, partially offset by a \$20.5 million decrease in pension related actuarial gains and a \$8.1 million change in foreign currency translation adjustments.

As of December 31, 2022, we had a cumulative currency translation adjustment of \$18.6 million in Accumulated Other Comprehensive Loss for our Brazil entity. If we were to cease to have a controlling financial interest in the Brazil entity or otherwise satisfy criteria for reclassification of the amount from Accumulated Other Comprehensive Loss to earnings, we would recognize a non-cash charge of \$18.6 million based on December 31, 2022 balances, which would be included as a special charge within the consolidated statement of operations.

Provision for (Benefit from) Income Taxes

The table below outlines the change in effective tax rate for 2022 and 2021 (in thousands, except percentages).

	2022	2021	Change
Income (Loss) Before Tax	\$23,667	\$(57,862)	\$81,529
Expected federal income tax rate	21.0%	21.0%	—%
State income taxes, net of federal tax benefit	(10.3)	(0.3)	(10.0)
US permanent differences	2.3	(1.7)	4.0
Foreign tax rate differential	(4.8)	3.7	(8.5)
Maturity of Interest Rate Swap	(10.7)	—	(10.7)
Tax reserve	(1.5)	(2.6)	1.1
Rate Change	—	(1.7)	1.7
GILTI	5.3	—	5.3
Prior period adjustment	6.2	0.2	6.0
Dispositions	—	(1.0)	1.0
Valuation Allowance	11.9	(24.7)	36.6
Other, net	1.3	(5.2)	6.5
Equity compensation	0.6	2.0	(1.4)
Research and development	(3.2)	1.3	(4.5)
Effective tax rate	18.1%	(9.0)%	27.1%

The Company recognized a valuation allowance for the German and the U.S. net DTAs to the extent of reversing DTLs during the year ended December 31, 2020. The Company continued to maintain a valuation allowance against its deferred tax assets in Germany and the U.S. as both jurisdictions remain in a cumulative three year loss position at December 31, 2022. The Company concluded that the negative evidence associated with the history of losses outweighed any positive evidence as of December 31, 2022. Therefore, the Company has not relied on projections of future taxable income in our assessment of the realization of deferred tax assets at December 31, 2022. The Company calculated the valuation allowance based on the reversal of temporary differences. The Company maintained a valuation allowance related to the German deferred tax assets of \$3.9 million and \$13.2 million, as of December 31, 2022 and December 31, 2021, respectively. The Company maintained a valuation allowance related to the U.S. deferred tax assets of \$82.5 million and \$73.1 million, as of December 31, 2022 and December 31, 2021, respectively. For other jurisdictions there are no temporary differences to consider for the valuation allowance.

As of December 31, 2022 and 2021, the Company maintained a total valuation allowance of \$127.4 million and \$139 million, respectively, which relates to foreign, federal, and state deferred tax assets as of December 31, 2022 and 2021. This decrease is partially due to the removal of the United Kingdom deferred tax asset of \$8.7 million related to Pipeline UK and the deconsolidation. The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or increased or if objective negative evidence in the form of cumulative losses is no longer present and additional weight is given to subjective evidence such as our projections for growth.

Results of Operations

2021 Compared With 2020

Comparisons between prior year periods can be found in the Company's Annual Report on Form 10-K for the Fiscal Year ended December 31, 2021.

Liquidity and Capital Resources

Our liquidity needs arise primarily from capital investment in machinery, equipment and the improvement of facilities, funding working capital requirements to support business growth initiatives, debt service costs, and acquisitions. We have historically generated cash from operations and remain in a strong financial position, with resources available for reinvestment in existing businesses and managing our capital structure on a short and long-term basis.

Cash Flow Activities for the Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021

The following table summarizes our cash flow activities for the year-ended indicated (in thousands):

	2022	2021	2020
Cash flow provided by (used in):			
Operating activities	\$ (821)	\$ 10,448	\$ (22,481)
Investing activities	37,545	(2,705)	144,295
Financing activities	(26,466)	(11,528)	(134,139)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,908)	(3,448)	3,878
Increase (decrease) in cash, cash equivalents, and restricted cash	<u>\$ 5,350</u>	<u>\$ (7,233)</u>	<u>\$ (8,447)</u>

During the year ended December 31, 2022, cash used in operating activities was \$0.8 million compared to \$10.4 million provided during the year ended December 31, 2021. The \$11.3 million decrease in operating cash flows was primarily driven by an increase in inventories due to relief of previous supply chain disruptions as well as prepaid assets.

During the year ended December 31, 2022, cash provided by investing activities was \$37.5 million compared to \$2.7 million used during the year ended December 31, 2021. The \$40.3 million increase in investing cash flows was primarily driven by the cash received from the sale of two properties within the Industrial segment located in Walden, New York and Tampa, Florida and one property within the Aerospace and Defense segment in Corona, California.

During the year ended December 31, 2022, cash used in financing activities was \$26.5 million compared to \$11.5 million used during the year ended December 31, 2021. The \$14.9 million increase in cash used in financing activities is driven by \$14.0 million higher debt payments, \$4.5 million increase in debt issuance costs, partially offset by \$4.0 million in failed sales leaseback proceeds and \$2.9 million of lower tax withholding on share based plans.

As of December 31, 2022, total debt (including current portion) was \$496.5 million compared to \$513.3 million at December 31, 2021. Total debt is net of unamortized debt discount and debt issuance costs of \$20.4 million and \$13.0 million at December 31, 2022 and 2021, respectively. Total debt as a percentage of total shareholders' equity was 312% as of December 31, 2022 compared to 384% as of December 31, 2021. As of December 31, 2022, we had available capacity to borrow an additional \$48.3 million under our revolving credit facility.

We entered into a new secured Credit Agreement, dated as of December 20, 2021 ("Credit Agreement"), which provides for a \$100.0 million revolving line of credit with a five year maturity and a \$530.0 million term loan with a seven year maturity of which the term loan was funded in full at closing. This Credit Agreement replaced and terminated the Credit Agreement dated December 11, 2017 ("Prior Credit Agreement") under which the Company had borrowings of \$492.0 million on its term loan and \$38.7 million on its revolving line of credit as of December 20, 2021. The Company amended its Credit Agreement with the First Amendment on April 8, 2022 and the Second Amendment on May 27, 2022. For further discussion of both amendments, see Note 12, Financing Arrangements.

The Credit Agreement contains covenants that require, among other items, maintenance of certain financial ratios and also limits our ability to: enter into secured and unsecured borrowing arrangements; issue dividends to shareholders; acquire and dispose of businesses; invest in capital equipment; transfer assets among domestic and international entities; participate in certain higher yielding long-term investment vehicles; and issue certain types of additional shares of our stock which limits our ability to borrow under the credit facility. The primary financial covenant is total net leverage, a ratio of total secured debt (less cash and cash equivalents up to a maximum of \$75.0 million) to total earnings before interest expense, taxes, depreciation, and amortization based on the four fiscal quarters at the testing period.

As of December 31, 2022, we had \$27.4 million borrowings outstanding under our revolving credit facility, \$489.6 million gross borrowings under our term loan, and \$32.4 million borrowings outstanding under letters of credit. We were in compliance with all financial covenants related to the Credit Agreement at December 31, 2022 and we believe it is likely that we will continue to meet such covenants for at least the next twelve months from date of issuance of the financial statements.

The ratio of current assets to current liabilities was 2.2:1 at December 31, 2022 compared to 2.0:1 at December 31, 2021. As of December 31, 2022, cash and cash equivalents totaled \$64.3 million, the majority of which was held in foreign bank accounts. This compares to \$59.9 million of cash and cash equivalents as of December 31, 2021, with balances all substantially held in foreign bank accounts. These funds are considered indefinitely reinvested to be used to expand operations either organically or through acquisitions outside of the United States.

In 2023, we expect to generate positive cash flow from operating activities sufficient to support our capital expenditures and service our debt. Based on our expected cash flows from operations and contractually available borrowings under our credit facility, we expect to have sufficient liquidity to fund working capital needs and future growth over at least the next twelve months from March 15, 2023 the date of filing these 2022 financial statements.

Cash Flow Activities for the Year Ended December 31, 2021 Compared to the Year Ended December 31, 2020

Comparisons between prior year periods can be found in the Company's Annual Report on Form 10-K for the Fiscal Year ended December 31, 2021.

Significant Contractual Obligations and Commercial Commitments

The following summarizes our contractual obligations and commitments as of December 31, 2022.

Purchase obligations were \$157.0 million, of which \$152.6 million is due within one year. Purchase obligations include contracts for raw materials and finished goods purchases, selling and administrative services, and capital expenditures. Additionally, the Company had \$10.0 million of future contractual commitments, primarily including letter of credit fees.

Total lease payments under non-cancellable operating leases as of December 31, 2022 were \$7.9 million in 2023, \$7.4 million in 2024, \$6.3 million in 2025, \$5.8 million in 2026, \$5.0 million in 2027 and \$19.2 million thereafter.

Debt payments due during the next five years as of December 31, 2022 are zero in 2023 through 2025, \$27.4 million in 2026, zero in 2027 and \$489.6 million thereafter.

Interest payments due during the next five years as of December 31, 2022 are \$51.9 million in 2023, \$51.9 million in 2024, \$51.9 million in 2025, \$51.9 million in 2026, \$51.9 million in 2027, \$46.6 million thereafter.

In accordance with authoritative guidance for accounting for uncertainty in income taxes, as of December 31, 2022, we had unrecognized tax benefits of \$2.1 million and \$0.1 million of accrued interest. Approximately \$1.5 million as of December 31, 2022 represents the amount that if recognized would affect the Company's effective income tax rate in future periods. The Company does not expect the unrecognized tax benefits to change over the next 12 months.

In 2023, we expect to make defined benefit plan contributions based on the minimum required funding in accordance with statutory requirements (approximately \$1.0 million in the U.S. and approximately \$3.8 million for our foreign plans). The estimates for plan funding for future periods may change as a result of the uncertainties concerning the return on plan assets, the number of plan participants, and other changes in actuarial assumptions. We anticipate fulfilling these commitments through the generation of cash flow from operations.

In addition to the contractual obligations and commitments described above, we also had other commercial commitments for which we are contingently liable as of December 31, 2022. Other corporate commercial commitments include standby letters of credit of \$32.4 million, in the aggregate, \$16.3 million of which expire in less than one year.

Off-Balance Sheet Arrangements

Through December 31, 2022, we have not entered into any off-balance sheet arrangements or material transactions with unconsolidated entities or other persons that have, or are reasonably likely to have, a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures, or capital resources that is material to investors.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market Risk

In both reporting segments, the Company's performance continues to be adversely impacted by global supply chain constraints, rising inflation including global energy inflation, and volatility in foreign exchange rates and interest rates. In 2021 and into 2022, we faced unexpected difficulties in procuring certain raw material, castings, and components, additional labor constraints due to COVID-19 and a challenging labor market, and inflation on both material and logistics. These challenges continued to evolve in 2022, with inflation levels reaching multi-decade highs. In order to mitigate the impact of these factors on our operations and financial position, we continue to implement actions across the company including, but not limited to: list price increases and surcharges, structural cost out actions, changes in suppliers from which we procure material, and manufacturing productivity through the implementation of the CIRCOR Operating System across the company. Additionally, we continue to monitor and evaluate additional sanctions and export restrictions that may be imposed by the U.S. Government and other governments along with any responses from Russia that could directly affect our supply chain, business partners or customers. The aggregate revenue from customers in Russia and Ukraine for each of the fiscal years ended 2022 and 2021 was less than 1% of consolidated net revenues, primarily related to our Downstream Oil & Gas business in the Industrial reporting segment. Currently we have a pending project in Russia that could result in approximately \$4.0 million reversal of unbilled revenue and other receivables if tighter sanctions or restrictions prevented us from delivering the project and receiving payment. Additionally, the conflict in Russia and Ukraine is likely to adversely impact demand in that region, increase energy costs related to our operations, and negatively impact material cost and availability.

Foreign Currency Exchange Risk

The Company is exposed to certain risks relating to its ongoing business operations including foreign currency exchange rate risk and interest rate risk. During 2019, the Company entered into a cross-currency swap ("cross-currency swap") agreement to hedge against future volatility in exchange rates between the U.S. dollar and the Euro. The cross-currency swap was pursuant to an ISDA Master Agreement with Deutsche Bank AG and provided for early termination if the counterparty ceased to be part of the Company's secured lender group. Concurrent with the closing of the Credit Agreement, the cross-currency swap was terminated in December 2021. For additional information regarding our foreign currency exchange risk refer to Note 12, Financing Arrangements, of the condensed consolidated financial statements included in this Annual Report.

Interest Rate Risk

Loans under our credit facility bear interest at variable rates which reset every 30 to 180 days depending on the rate and period selected by the Company. These loans are subject to interest rate risk as interest rates will be adjusted at each rollover date to the extent such amounts are not repaid. As of December 31, 2022, the interest rate on the Company's term loan portion was 9.884%. In 2018, the Company entered into an interest rate swap to mitigate the inherent rate risk associated with our outstanding variable rate debt. This hedging instrument matured in April 2022 and the Company is currently unhedged against changes in interest rates. Refer to Note 12, Financing Arrangements, of the consolidated financial statements included in this Annual Report.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements and the related notes thereto are listed in Item 15(a)(1) on the Index to Consolidated Financial Statements.

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

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO") (our principal executive officer and principal financial officer, respectively), has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934) as of the end of the period covered by this Annual Report on Form 10-K. The Company's disclosure controls and procedures are designed to provide reasonable assurance that information we disclose in reports that we file or submit under the Securities Exchange Act of 1934 is accumulated and communicated to management, including our principal executive and financial officers, to allow timely decisions regarding disclosure and that such information is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on that evaluation, our CEO and CFO concluded that, as of December 31, 2022, the Company's disclosure controls and procedures were not effective because of the material weaknesses in our internal control over financial reporting described below.

Management's Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined by Rules 13a-15(f) and 15d-15(f) under the Exchange Act). The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

The Company's management assessed the effectiveness of internal control over financial reporting as of December 31, 2022, based upon the framework presented in "Internal Control-Integrated Framework" (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management concluded that the Company's internal control over financial reporting was not effective as of December 31, 2022, due to the material weaknesses discussed below.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

Based on its assessment, Management concluded that deficiencies existed as of December 31, 2022, as the Company did not maintain a sufficient number of finance, accounting and internal controls personnel across the organization to identify and prevent the misstatements that resulted in the restatement of the prior period financial statements.

This material weakness contributed to the following additional material weaknesses detailed below.

a. The Company did not maintain a sufficient level of centralized oversight over smaller reporting locations. Specifically, the Company did not adequately design controls to validate the completeness and accuracy of amounts that were used in controls designed to mitigate the risks of material misstatements within significant accounts of smaller reporting locations. Also, the Company did not design and maintain effective controls over the preparation, review and approval of cash account reconciliations and did not obtain direct access to bank accounts at certain smaller reporting locations.

b. The Company did not maintain a sufficient complement of effective process level controls at smaller reporting locations to validate activity recorded within the trial balances of smaller reporting locations based on criteria established in Internal Control – Integrated Framework issue by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Additionally, the Company did not maintain sufficient level of monitoring of that activity at the segment level.

These material weaknesses resulted in misstatements to the Company's consolidated financial statements across a number of financial statement line items, including but not limited to revenues, net income, goodwill, cash and cash equivalents and other working capital accounts resulting in restatement of the prior period financial statements.

As part of the Company's review of control testing during 2022, the Company determined it did not have effective IT general controls over certain IT applications supporting financial reporting. Governance of IT general controls includes a process to monitor performance of the controls within the IT control environment throughout the year. The material weakness was primarily related to an ineffective governance of IT general controls by the Company. Process-level automated controls and manual controls that were dependent upon the information derived from IT systems were also determined to be ineffective as a result of the IT general control deficiencies.

Remediation Plan for Material Weaknesses in Internal Control over Financial Reporting

The Company has been actively addressing the identified material weaknesses. Actions have been taken to strengthen controls, and further actions are planned including:

- a. The Company is in the process of reassessing its staffing needs and adding personnel in key roles or external resources as necessary, to address the identified control gaps
- b. Redesign monitoring controls to provide more direct and centralized oversight over smaller reporting locations
- c. Implement additional controls targeted to prevent and detect a material misstatement arising at smaller reporting locations including an additional control designed to have Corporate independently review cash account reconciliations and obtain direct access to bank accounts of the Company's smaller reporting locations
- d. Continue training on a regular basis related to internal control over financial reporting for finance, accounting and IT personnel
- e. Enhancing the design, timing and review of IT general controls
- f. Implementing additional monitoring controls by management over the execution and timeliness of the Company's IT general controls

The Company expects that the actions described above and resulting improvements in controls will strengthen its internal control over financial reporting and will address the identified material weaknesses.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdiction that Prevents Inspections

Not applicable.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

Board of Directors

The following table provides information about the board of directors and the detailed information about each individual's qualifications, experience, skills and expertise along with select professional and community contributions can be found below.

Name	Position	Age	Director Since	Audit	Compensation	N&CG*	Independent
Samuel R. Chapin	Director	65	2019	t		l	X
Tina M. Donikowski	Director	63	2017	l	l	t	X
Bruce Lisman	Director	76	2020	l	l		X
Helmuth Ludwig t	Chair	60	2016				X
Tony Najjar**	Director	61	2023				
John (Andy) O'Donnell	Director	74	2011		t	l	X
Jill D. Smith	Director	64	2020	l		l	X

t Chair l Member

*N&CG: Nominating & Corporate Governance Committee

**On March 13, 2023, the Board elected Tony Najjar to a vacant seat, effective March 20, 2023.

Under our amended Articles of Incorporation and By-laws, our board has completed its transition from a classified board to the annual election of all directors. At each annual meeting of stockholders, all directors will stand for election for one-year terms expiring at the next succeeding annual meeting of stockholders.

Samuel R. Chapin. Mr. Chapin has served as a member of the Board since January 2019. Mr. Chapin served as Executive Vice Chairman at the Bank of America Merrill Lynch, a multinational investment bank, from 2010 to his retirement in June 2016. Mr. Chapin joined Merrill Lynch in 1984 as a member of the Mergers and Acquisitions group and he was named a Managing Director in Investment Banking in 1993. Mr. Chapin was named Senior Vice President and head of Merrill Lynch's Global Investment Banking Division in 2001 and was named Vice Chairman in 2003. While at Merrill Lynch and Bank of America Merrill Lynch, Mr. Chapin was responsible for managing relationships with a number of the firm's largest corporate clients. He currently serves on the Board of Directors of PerkinElmer, Inc., and O-I Glass, Inc. and the Board of Trustees at Lafayette College. Mr. Chapin's qualifications to sit on our Board include his experience and significant knowledge of the industrials market with a mastery of strategic M&A accrued over more than 35 years in investment banking.

Tina M. Donikowski. Ms. Donikowski has served as a member of the Board since March 2017. Ms. Donikowski retired from General Electric Company, a diversified industrial company, in October 2015 after 38 years with the company. She served in a number of senior positions during her career at General Electric Company, including most recently as Vice President, Global Locomotive Business, GE Transportation, from January 2013 until her retirement. She currently also serves on the Board of Directors of TopBuild Corp., a leading installer and distributor of insulation and building material products to the U.S. construction industry based in Daytona Beach, Florida; Advanced Energy Industries, Inc., a designer and manufacturer of highly engineered precision power, measurement, and control solutions for mission-critical applications and processes; and Eriez Magnetics, a privately held manufacturer and designer of magnetic, vibratory, and metal detection applications based in Erie, Pennsylvania. Previously she served on the board of Atlas Copco AB, a world-leading provider of sustainable productivity solutions based in Stockholm, Sweden. Ms. Donikowski's qualifications to sit on our Board include her extensive experience in leading technology businesses and her strong operations background.

Bruce Lisman. Mr. Lisman has served as a member of the Board since June 2020. Mr. Lisman retired in 2009 from JP Morgan Chase & Co., a multinational investment firm, where he had served as Chairman of the Global Equities Division. From 1987 to 2008, he was Head or Co-Head of the Global Equity Division at Bear Stearns Companies. Mr. Lisman serves as a director of Myers Industries, Inc., where he is a member of the audit and nominating and governance committees, Associated Capital, where he is a member of the audit committee and chair of the governance committee, and National Life Group, where he serves on the compensation committee, executive committee, and nominating and governance committee. Prior board service includes PC Construction, an engineering and construction company as Chairman from 2013 to 2019, and as a member until 2021, and The Pep Boys, a nationwide auto parts retailer. Mr. Lisman's qualifications to sit on our Board include his financial, global business and leadership expertise.

Helmuth Ludwig. Dr. Ludwig has served as a member of the Board since January 2016. From October 2016 until his retirement in December 2019, he served as Global CIO for Siemens, a leading technology company. He previously served among other roles as CEO of the Siemens Industry Sector in North America from October 2011 to September 2014 and as President of Siemens PLM Software from August 2007 to September 2010 where he is credited for having successfully led the integration of the organization's 50 legal entities and multiple facilities across 26 countries. Earlier in his career, Dr. Ludwig held a number of international assignments at Siemens in Europe, Latin America, and Asia. Dr. Ludwig has served as a member of the board of Hitachi Ltd., Tokyo since July 2020. He teaches as a Professor of Practice for Strategy and Entrepreneurship at Southern Methodist University Cox School of Business in Dallas and is a Board Leadership Fellow and a Certified Director with the National Association of Corporate Directors (NACD). Dr. Ludwig is a known expert and regular speaker at industry conferences on the Internet of Things and "Industry 4.0." Dr. Ludwig's qualifications to sit on our Board include his proven manufacturing leadership skills, extensive international experience, and his success in leading the integration and simplification of a complex global enterprise.

Tony Najjar. Mr. Najjar was named Chief Operating Officer and Interim President and Chief Executive Officer effective January 19, 2022, and President and Chief Executive Officer effective August 10, 2022. He previously served as the President, Aerospace and Defense Group beginning in February 2018. He served as Vice President, Aerospace and Defense in the Advance Flow Solutions Group from October 2016 to February 2018 and Vice President, Sales & Marketing, Aerospace and Defense Group, from April 2015 to October 2016. Before joining CIRCOR, Mr. Najjar served as Programs Manager, Business Development and Mergers & Acquisitions at Rockwell Collins, a multinational manufacturing company, from October 2011 to April 2015. He has spent nearly 36 years in the aerospace and defense industry in engineering, sales, and general management roles, including leadership positions at Rockwell Collins and Kaiser Aerospace. Mr. Najjar's qualifications to sit on our Board include his extensive business and manufacturing leadership and improving the operational performance and profitability of large multinational manufacturing businesses.

John (Andy) O'Donnell. Mr. O'Donnell has served as a member of the Board since November 2011. Until his retirement in January 2014, Mr. O'Donnell had worked at Baker Hughes, an oilfield services company, since 1975. He served as Vice President of Baker Hughes since 1998 and was appointed to Vice President, Office of the Chief Executive Officer in 2012, a role in which he served until his retirement. From 2009 to 2011, Mr. O'Donnell was President, Western Hemisphere Operations of Baker Hughes. He was President of Baker Petrolite Corporation from 2005 to 2009 and President of Baker Hughes Drilling Fluids from 2004 to 2005. He served as Vice President, Business Process Development at Baker Hughes from 1998 to 2002 and as Vice President of Manufacturing at Baker Oil Tools from 1990 to 1998. Mr. O'Donnell also serves on the Board of Directors of Cactus, Inc., where he is a member of its Audit, Compensation, and Nominating and Corporate Governance Committees. Mr. O'Donnell's qualifications to sit on our Board include his experience in international energy markets and leading multinational sales, marketing, service and manufacturing operations.

Jill D. Smith. Ms. Smith has served as a member of the Board since January 2020. Ms. Smith most recently served as President, Chief Executive Officer and Director of Allied Minds plc, an intellectual property commercialization company focused on technology and life sciences from March 2017 until her retirement in June 2019. She previously served as Chairman, Chief Executive Officer and President of DigitalGlobe, Inc., a global provider of satellite imagery products and services, from 2005 to 2011. Ms. Smith started her career as a consultant at Bain & Company where she rose to Partner. She then joined Sara Lee as Vice President and subsequently went on to serve as President and Chief Executive Officer of SRDS, a business-to-business publishing firm and later as President and Chief Executive Officer of eDial, a VoIP collaboration company. Furthermore, she served as Chief Operating Officer of Micron Electronics, and co-founded and led Treacy & Company, a consulting and boutique investment firm. Ms. Smith currently serves on the Boards of Directors of R1 RCM Inc., where she is a member of the Audit and Human Capital Committees, AspenTech, where she is Chair of the Board and Chair of the Nominating and Corporate Governance Committee, and MDA, where she is Chair of the Nominating and Governance Committee. Ms. Smith's qualifications to sit on our Board includes her extensive experience as a technology executive, including as a CEO focused on growing innovative companies.

Management

Our current executive officers and key employees, and their respective ages and positions, are as follows:

Name	Age	Position
Tony Najjar	61	President and Chief Executive Officer
Arjun Sharma	45	Chief Financial Officer and Senior Vice President, Business Development
Jessica Wenzell	48	Senior Vice President, General Counsel & Secretary and Chief People Officer
Joseph Losak II	58	Vice President, Finance, Corporate Controller
Forrest Tiedeman	65	Vice President, Corporate Treasurer

Tony Najjar. Mr. Najjar was named Chief Operating Officer and Interim President and Chief Executive Officer effective January 19, 2022, and President and Chief Executive Officer effective August 10, 2022. He previously served as the President, Aerospace and Defense Group beginning in February 2018. He served as Vice President, Aerospace and Defense in the Advance Flow Solutions Group from October 2016 to February 2018 and Vice President, Sales & Marketing, Aerospace and Defense Group, from April 2015 to October 2016. Before joining CIRCOR, Mr. Najjar served as Programs Manager, Business Development and Mergers & Acquisitions at Rockwell Collins, a multinational manufacturing company, from October 2011 to April 2015. He has spent nearly 36 years in the aerospace and defense industry in engineering, sales, and general management roles, including leadership positions at Rockwell Collins and Kaiser Aerospace. Mr. Najjar holds both a bachelor's degree and a Master of Science degree in Mechanical Engineering from Oklahoma State University and an MBA from Pepperdine University.

Arjun Sharma. Mr. Sharma was appointed as our Interim Chief Financial Officer effective January 1, 2022, and Chief Financial Officer effective August 10, 2022. He continues to serve as our Senior Vice President, Business Development, a position he has held since 2009, overseeing the Company's mergers and acquisitions and strategic planning functions. Prior to joining CIRCOR, Mr. Sharma served as managing director at Global Equity Partners, a venture capital and strategy consulting firm, from January 2009 to September 2009, where he was responsible for executing equity investments and leading client engagements on acquisitions, divestitures, and growth strategy. From 2007 to 2008, he was Director of Mergers and Acquisitions at Textron Inc., a multi-industry company with a global network of aircraft, defense, industrial and finance businesses, where he was responsible for developing the company's M&A strategy and leading acquisition and divestiture transactions. From 2002 to 2007, Mr. Sharma held various positions of increasing responsibility at SPX Corporation, a Fortune 500 multi-industry company, culminating in his appointment as Director of Corporate Development. Mr. Sharma holds a Master of Science degree in Finance from Drexel University and a Bachelor of Commerce degree from Delhi University. Mr. Sharma is a graduate of the PLD program at Harvard Business School.

Jessica Wenzell. Ms. Wenzell was appointed as Chief People Officer effective November 15, 2021 and continues to serve as our Senior Vice President, General Counsel and Secretary, roles she has held since joining CIRCOR in September 2020. Prior to joining CIRCOR, Ms. Wenzell served in executive roles of increasing responsibility at General Electric Company for over 14 years. From January 2018 to August 2020, she was GE's Executive Counsel – Strategic Transactions, leading cross-functional, legal entity carve-out activities for divestitures. Her previous roles at GE included Executive Counsel – Indirect Sourcing & Properties (August 2017 to March 2018); Executive Counsel, Chief Compliance Officer for GE Oil & Gas (August 2013 to July 2017); and General Counsel for GE Measurement & Control (2010 to 2013). Ms. Wenzell began her career at Luce, Forward, Hamilton & Scripps LLP in the Corporate & Securities Practice Group. She received her Bachelor's degree in Political Science from the University of California, San Diego and her J.D. from the University of California, Hastings College of the Law, San Francisco.

Joseph Losak II. Mr. Losak joined CIRCOR as Vice President, Deputy Controller in August 2022 and appointed Vice President, Corporate Controller and Principal Accounting Officer in January 2023. Prior to joining the Company, Mr. Losak worked at Hill International, Inc., a construction management company, where he served as Director of Accounting & Financial Reporting from 2018 to 2022 responsible for overseeing Hill International, Inc.'s accounting and financial reporting functions. He began his career in public accounting and has held various internal audit and corporate finance positions. He is a Certified Public Accountant and received his Bachelor of Arts in Economics from University of Michigan and Master of Business Administration from Pace University in New York.

Forrest Tiedeman. Mr. Tiedeman has served as Vice President and Corporate Treasurer since September 2022. He joined CIRCOR in April 2021 as the Vice President of Tax. He currently leads the Tax and Treasury functions at CIRCOR. Before joining CIRCOR, from November 2013 to November 2020 he served as the Senior Director International Tax at Nuance Communications Inc. and from September 2003 to November 2013 as the Director of Tax at Alere Inc. He is registered in Massachusetts as a Certified Public Accountant and as a licensed lawyer. He is a graduate of Suffolk University Law School and the University of Michigan.

CERTAIN CORPORATE GOVERNANCE MATTERS

Board Committees

Our Board maintains three standing committees: an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee.

Audit Committee. The Audit Committee, which consists of Mr. Chapin, Ms. Donikowski, Mr. Lisman, and Ms. Smith (each of whom has been affirmatively determined by the full Board to be an independent director, as well as meeting the stricter independence standards applicable to audit committee members under NYSE listing standards and the rules of the SEC), oversees the integrity of the Company's financial statements and is directly responsible for the appointment, compensation, retention and oversight of the work of the firm of independent auditors (the "Auditors") that audits the Company's financial statements and performs services related to the audit. Among other responsibilities, the Audit Committee reviews the scope and results of the audit with the Auditors, reviews with management and the Auditors the Company's annual and quarterly operating results, considers the adequacy of the Company's internal accounting procedures and controls and considers the effect of such procedures on the Auditors' independence. The Audit Committee also is responsible for overseeing the Company's internal audit function, the Company's compliance with legal and regulatory requirements and cybersecurity issues, and the review and approval of related party transactions. To satisfy these oversight responsibilities, the Audit Committee separately meets regularly with the Company's Chief Financial Officer, Vice President of Internal Audit, and the Auditors. Pursuant to the requirements of the NYSE, the Audit Committee operates in accordance with a charter (the "Audit Committee Charter"), which is available on the Company's website at www.CIRCOR.com under the "Investors" sub-link. The Company will provide a hard copy of the Audit Committee Charter to stockholders free of charge upon written request to the Corporate Secretary at the Company's corporate headquarters. Each member of the Audit Committee meets the financial literacy requirements of the NYSE and, in addition, the Board has determined that at least one of the Committee's members, Mr. Chapin, is an "audit committee financial expert" under the disclosure standards adopted by the SEC.

Compensation Committee. The Compensation Committee, which consists of Mr. O'Donnell, Ms. Donikowski, and Mr. Lisman (each of whom has been affirmatively determined by the full Board to be an independent director, as well as meeting the stricter independence standards applicable to compensation committee members under NYSE listing standards and the rules of the SEC), sets and oversees the Company's compensation philosophy and policy, reviews and determines the compensation arrangements for the Company's CEO; reviews the recommendations of the CEO and approves the compensation arrangements for all other officers and senior level employees; reviews general compensation levels for other employees as a group; determines the awards to be granted to eligible persons under the Company's 2019 Stock Option and Incentive Plan (as amended, the "2019 Plan"); and takes such other action as may be required in connection with the Company's compensation and incentive plans, including with respect to compensation and risk-management issues. The Compensation Committee has the sole authority from the Board for the appointment, compensation and oversight of the Company's outside compensation consultant.

The Compensation Committee engaged Semler Brossy ("Semler") in the last quarter of the year ended December 31, 2021 as its compensation consultant. In so doing, the Compensation Committee affirmatively determined that Semler is independent and has no conflict of interest as contemplated under rules adopted by the SEC and the NYSE, and has conducted annual reviews to confirm that Semler remains free of conflict per these rules. Semler reports directly to the Compensation Committee and does not provide any additional services to the Company. The executive compensation services provided by Semler include assisting in defining the Company's executive compensation strategy, providing market benchmark information, recommending the composition of the compensation peer group used as a benchmark by the Compensation Committee, advising with respect to the design of both short-term and long-term incentive compensation plans, and summarizing regulatory and governance guidelines. In making its compensation decisions, the Compensation Committee relies significantly on the information provided by Semler.

The Compensation Committee operates in accordance with a charter (the “Compensation Committee Charter”), which is available on the Company’s website at www.CIRCOR.com under the “Investors” sub-link. The Company also will provide a hard copy of the Compensation Committee Charter to stockholders free of charge upon written request to the Corporate Secretary at the Company’s corporate headquarters.

Nominating and Corporate Governance Committee. The Nominating and Corporate Governance Committee, which consists of Ms. Donikowski, Mr. Chapin, Mr. O'Donnell, and Ms. Smith (each of whom has been affirmatively determined by the full Board to be an independent director), is responsible for establishing criteria for selection of new directors, identifying individuals qualified to become directors and recommending candidates to the Board for nomination as directors. In addition, the Nominating and Corporate Governance Committee is responsible for recommending to the Board a set of corporate governance principles applicable to the Company, overseeing the evaluation process of the Board and the evaluation of its committees, recommending to the Board appropriate levels of director compensation and, together with the Audit Committee, monitoring compliance with the Company’s Code of Conduct & Business Ethics. The committee also oversees ESG, including human capital, employee safety and diversity & inclusion initiatives. The Nominating and Corporate Governance Committee operates in accordance with a charter (the “Nominating and Corporate Governance Committee Charter”), which is available on the Company’s website at www.CIRCOR.com under the “Investors” sub-link. The Company also will provide a hard copy of the Nominating and Corporate Governance Committee Charter to stockholders free of charge upon written request to the Corporate Secretary at the Company’s corporate headquarters.

Ad Hoc Committees. From time to time, the Board may establish ad hoc committees and delegate certain of its authority for the purpose of addressing particular matters (including, for example, the approval of financing or credit agreements or other matters that the Board thinks would be appropriate for review by an ad hoc committee). The Board established a special sub-committee on February 4, 2022, to assist with its strategic alternatives review. Mr. Ludwig, Mr. Chapin, and Mr. Lisman serve on the committee.

Executive Session. Independent directors meet at least twice a year in executive session without management, and at such other times as may be requested by any independent director. During Fiscal Year 2022, the Chair of the Board presided at meetings of the Company’s independent directors held in executive session without management. These sessions promote candor and discussion of matters in a setting that is independent of management.

Code of Ethics

In November 2022 the Company’s Board approved a new Code of Conduct & Business Ethics (the “Code of Conduct”). The Company regularly monitors compliance with the Code of Conduct, which applies uniformly to all directors, executive officers, employees, contractors, and vendors. Among other things, the Code of Conduct addresses conflicts of interest, confidentiality, fair dealing, protection and proper use of Company assets, compliance with applicable law (including insider trading and anti-bribery laws), and reporting of illegal or unethical behavior. The Code of Conduct is available on the Company’s website at www.CIRCOR.com under the “Investors” tab and a hard copy will be provided by the Company to any stockholder who requests it by writing to the Company’s Secretary at the Company’s executive offices. In addition, we will post on our website all disclosures that are required by SEC regulations or NYSE listing standards with respect to amendments to, or waivers from, any provision of the Code of Conduct.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our executive officers, directors and the holders of more than 10% of our common stock to file with the SEC initial reports of ownership and reports of changes in ownership of our common stock and other equity securities. To our knowledge, based solely on a review of our records and written representations by the persons required to file these reports, all filing requirements of Section 16(a) were satisfied on a timely basis with respect to Fiscal Year 2022.

Family Relationships

No family relationships exist between any director or executive officer.

Compensation Committee Interlocks and Insider Participation

The members of the Compensation Committee in Fiscal Year 2022 were Mr. O'Donnell, Ms. Donikowski, and Mr. Lisman. None of the Company's executive officers serves as a member of the Board or compensation committee of any entity that has one or more of its executive officers serving as a member of the Company's Compensation Committee. In addition, none of the Company's executive officers serves as a member of the compensation committee of any entity that has one or more of its executive officers serving as a member of the Board.

Item 11. Executive Compensation

Director Compensation

The form and amount of director compensation are reviewed periodically by the Nominating and Corporate Governance Committee, most recently in February 2023. The Nominating and Corporate Governance Committee reviews peer compensation practices of our Peer Group Companies, which are outlined in the Compensation Discussion and Analysis section of this document, as presented by the board's independent compensation consultant, Semler Brossy Consulting Group, and broad survey data concerning director compensation practices, levels, and trends for companies comparable to the Company in revenue, business, and complexity. It also considers the significant amount of time that our non-employee directors spend in fulfilling their duties to the Company as well as the required level of skill to serve on our Board. The Nominating and Corporate Governance Committee recommends changes, if any, to the Board for approval. Employee directors do not receive separate compensation for service as directors.

The Company uses a combination of cash and stock-based incentive compensation to attract and retain qualified candidates to serve as non-employee directors on the Board. Cash compensation is paid quarterly, in arrears. The cash compensation our non-employee directors earned in 2022 is as follows:

Annual Cash Compensation

Annual Retainer (Chair of the Board).....	\$	190,000
Annual Retainer (Board Member).....	\$	75,000
Chair Fee (Audit Committee).....	\$	20,000
Chair Fee (Compensation Committee).....	\$	15,000
Chair Fee (Nominating and Corporate Governance Committee).....	\$	10,000
Committee Membership Fee (per committee).....	\$	5,000

Annual Equity Grant

Our non-employee directors are also eligible to receive an annual equity grant under our 2019 Plan. If a director joins the Board during the middle of the year, the annual equity grant is pro-rated based on the quarter in which the director joins the Board. In 2022, the targeted value of such grant was \$105,000. On August 15, 2022, each director received a grant of 5,840 time-based restricted stock units ("Time RSUs") which becomes vested and settles in shares of common stock on a one-for-one basis one-year from the date of grant, provided the non-employee director is still providing services on the Board. The number of Time RSUs was determined by dividing \$105,000 by \$17.98, which reflects the average closing price of our common stock on the New York Stock Exchange for the last 11 trading days ending on August 12, 2022, rounded up to the nearest whole share.

2022 Director Compensation

The following table shows the compensation our non-employee directors earned for their services in 2022:

Name	Fees Earned in Cash ⁽¹⁾	Stock Awards ⁽²⁾	Total
Samuel Chapin	\$100,000	\$115,282	\$215,282
Tina M. Donikowski	\$95,000	\$115,282	\$210,282
Arthur L. George, Jr.	\$36,173	\$26,839	\$63,012
Bruce Lisman	\$85,000	\$115,282	\$200,282
Helmuth Ludwig	\$190,000	\$115,282	\$305,282

John (Andy) O'Donnell	\$95,000	\$115,282	\$210,282
Jill D. Smith	\$85,000	\$115,282	\$200,282

- (1) The amounts shown in this column reflect the fees earned in Fiscal Year 2022 for Board and committee service. Mr. George resigned from the Board effective July 22, 2022.
- (2) Reflects the grant date fair value of the annual equity grant made in Time RSUs to each of the directors in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718. For a discussion of the assumptions related to the calculation of the amounts in this column, refer to Note 13 Share-Based Compensation, of the consolidated financial statements in this Annual Report on Form 10-K. The grant date fair value of the Time RSUs was based on the Company's previous day closing stock price prior to the grant date. For Mr. George, this value is based on a stock price of \$26.60 in connection with his pro-rated new hire grant on January 26, 2022; for the other directors, this value is based on a stock price of \$19.74 in connection with the annual award granted on August 15, 2022. Mr. George did not participate in the August award due to his resignation on July 22, 2022.

The total number of Time RSUs held by each non-employee director as of December 31, 2022 was 5,840, excluding Mr. George whose 1,009 outstanding RSUs vested and converted to common stock on July 25, 2022 following his resignation.

Deferred Compensation

The Company did not sponsor a compensation deferral program for non-employee directors in 2022. As of December 31, 2022, there were no outstanding deferred compensation balances for non-employee directors.

Reimbursement for Training and Reasonable Related Travel

Each of our directors has a budget of up to \$5,000 USD (plus travel costs) per year for relevant educational training. When possible, directors are encouraged to share training opportunities with other boards that they serve on and to split the costs for such opportunities between those boards and the Company. Each of our non-employee directors are also reimbursed for reasonable travel and other expenses incurred in attending meetings.

Compensation Discussion and Analysis

This Compensation Discussion and Analysis explains the key elements of our executive compensation program and compensation decisions as they relate to the named executive officers ("NEOs") of the Company for Fiscal Year 2022. As a result of various role restructurings over the course of 2022, including the elimination of our Group President roles, the consolidation of our Chief People Officer and General Counsel roles and the consolidation of our Chief Financial Officer and Head of Business Development roles, as of December 31, 2022 we had four active executive officers. These four officers, along with our former President and Chief Executive Officer and former Chief Accounting Officer, comprise our list of NEOs for Fiscal Year 2022, listed below.

Named Executive Officer	Title
Tony Najjar ⁽¹⁾	President and Chief Executive Officer ("CEO")
Arjun Sharma ⁽²⁾	Chief Financial Officer and Senior Vice President, Business Development
Jessica Wenzell	Senior Vice President, General Counsel, Corporate Secretary & Chief People Officer
Forrest Tiedeman ⁽³⁾	Vice President, Treasury and Tax
Scott Buckhout ⁽⁴⁾	Former President and Chief Executive Officer
Amit Goel ⁽⁵⁾	Former Vice President, Finance, Corporate Controller and Chief Accounting Officer

- (1) Mr. Najjar was named President and Chief Executive Officer effective August 10, 2022; previously, he served as Chief Operating Officer and Interim President and Chief Executive Officer with effect from January 19, 2022 and served in the role of President, Aerospace and Defense Group prior to January 19, 2022.
- (2) Mr. Sharma was named Chief Financial Officer effective August 10, 2022; previously, he served as our Interim Chief Financial Officer with effect from January 1, 2022 and continues to serve as our Senior Vice President, Business Development.
- (3) Mr. Tiedeman was appointed as our Treasurer effective October 1, 2022 and continues to serve as our Vice President of Tax.
- (4) Mr. Buckhout terminated employment with CIRCOR on January 19, 2022.
- (5) Mr. Goel terminated employment with CIRCOR on September 9, 2022.

Executive Summary

Our Business: 2022 Performance Overview

CIRCOR is one of the world's leading providers of mission critical flow control products and services for the Industrial and Aerospace & Defense markets. The Company has a product portfolio of market-leading brands serving its customers' most demanding applications. CIRCOR markets its solutions directly and through various sales partners to more than 14,000 customers in approximately 100 countries. The Company has a global presence with approximately 3,060 employees and is headquartered in Burlington, Massachusetts.

We organize our reporting structure into two segments: Aerospace & Defense ("Aerospace & Defense Group") and Industrial ("Industrial Group"). Both the current and prior periods are reported under these two segments.

We believe that the Company's continued focus on growth, margin expansion and deleveraging the balance sheet creates value for shareholders. In the Industrial segment, we continue to focus on leveraging our aftermarket position, value-based pricing, growth and margin expansion. In our Aerospace & Defense segment, we continue to benefit from the rebound of commercial aerospace, new products in defense and hydrogen, and sustaining momentum in our core defense businesses.

Additionally, attracting and retaining talented personnel remains an essential underpinning to the enhancement of our global sales, operations, product management and engineering organizations.

2022 Financial Achievements

The following table highlights certain measures that serve as our compensation performance metrics for our performance-based compensation and the level of achievement of these metrics in 2022 (prior to adjustments as discussed below under *Key Compensation Actions Taken During 2022*):

	(expressed in millions except percentages)						
	Short-Term Incentive Plan Metrics				Long-Term Incentive Plan Metrics		
	Net Sales	Adjusted Operating Income ⁽¹⁾	Adjusted Working Capital % of Sales ⁽²⁾	Free Cash Flow ⁽³⁾	Adjusted Operating Margin ⁽⁴⁾	Adjusted Measurement Cash Flow ⁽⁵⁾	Relative Total Shareholder Return ⁽⁶⁾
CIRCOR (overall including Corporate expenses) ⁽⁷⁾	N/A	\$95.7	N/A	\$(22.7)	11.1%	\$7.4	see note (6)
Chief Operating Officer Functional Leadership Score ⁽⁸⁾	\$822.7	\$119.2	31.5%	N/A	N/A	N/A	N/A

- (1) Adjusted Operating Income ("AOI"), a non-GAAP measure, is defined as GAAP operating income excluding intangible amortization and amortization of fair value step-ups of inventory and fixed assets from acquisitions completed after December 31, 2011, the impact of restructuring-related inventory write-offs, impairment charges and special charges or gains.
- (2) "Adjusted Working Capital % of Sales" or "(AWC % of Sales)": a non-GAAP measure, is defined as the sum of Adjusted Working Capital balances at year-end divided by Net Sales. "Adjusted Working Capital" includes the following accounts: Trade Accounts Receivable, Unbilled Receivables (short and long term), Inventory, Trade Accounts Payable, Customer Advances (short and long term), and Deferred Revenue.
- (3) Free Cash Flow, a non-GAAP financial measure calculated by subtracting GAAP capital expenditures, net of proceeds from asset sales, from GAAP operating cash flow. For the purposes of Short-Term Incentive calculations, the CIRCOR Free Cash Flow results will be adjusted for any restructuring or special charges cash expense that was not contemplated in the Fiscal Year budget.
- (4) Adjusted Operating Margin ("AOM"), a non-GAAP measure, is defined as Adjusted Operating Income divided by Net Sales. Adjusted Operating Income is defined as GAAP operating income excluding intangible amortization and amortization of fair value step-ups of inventory and fixed assets from acquisitions completed after December 31, 2011, the impact of restructuring-related inventory write-offs, impairment charges and special charges or gains.
- (5) "Adjusted Measurement Cash Flow" or "Adjusted MCF" with respect to a fiscal year is calculated by adding the Company's cash provided by operating businesses less Corporate General and Administrative spend for that year. Specifically, Adjusted MCF excludes cash flows from income taxes, corporate special charges, and restructuring costs but includes interest expense.
- (6) "Relative Total Shareholder Return" or "Relative TSR" is calculated by ranking the Company and a list of specified peer companies within the S&P 600 SmallCap Industrial Index from highest to lowest according to their respective TSR and expressing the Company's performance as its corresponding percentile within the group of companies. Results are not yet reportable as the applicable three-year performance periods end in 2024 and 2025.
- (7) Corporate refers to the group of employees that provides services to the Aerospace & Defense and Industrial segments or support management of Company-wide functions.
- (8) Chief Operating Officer Functional Leadership Score is determined based on composite results for our A&D and Industrial segments.

Key Compensation Actions Taken During 2022

The Company's financial results and the overall business environment were considered when determining compensation paid for 2022. Please see *Management's Discussion and Analysis of Financial Condition and Results of Operations* in this Annual Report on Form 10-K for Fiscal Year 2022 for a more detailed description of the Company's financial results.

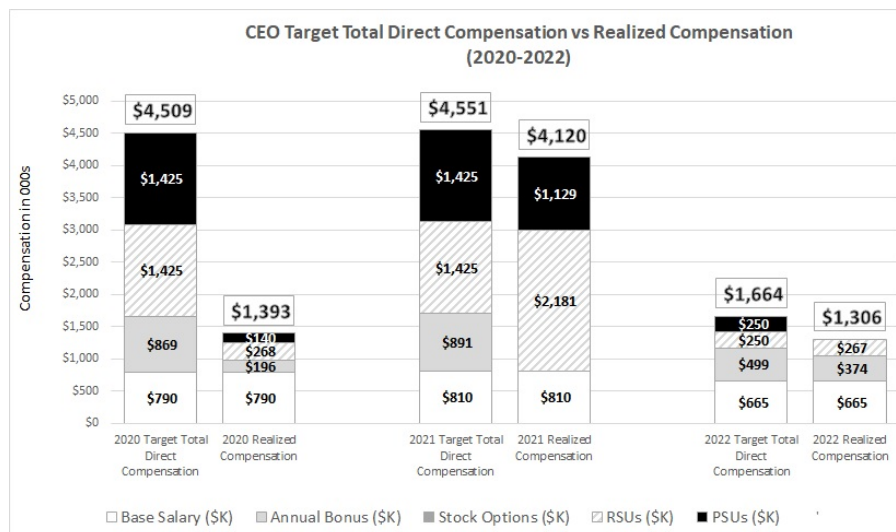
Notable compensation actions taken by the Compensation Committee in 2022 included the following:

- **New Short-Term Incentive Plan Component:** To reflect the organizational changes following Mr. Buckhout's termination, the Compensation Committee created a new component within the Short-Term Incentive Plan (the "STI" plan) to measure the performance of the newly created office of the Chief Operating Officer. Performance for executives associated with this office, which included Mr. Najjar prior to his appointment as President and Chief Executive Officer, is measured based on composite results for our A&D and Industrial segments as measured by AOI, AWC% of Sales, Net Sales results and also CIRCOR AOI results. This component also impacts STI results for Corporate executives, including our NEOs.
- **Retention Incentives for Certain NEOs:** Given the criticality of successfully managing and completing the accounting restatement process related to our Pipeline Engineering business unit, the continued significant uncertainty arising out of our Board's review of potential strategic alternatives and the leadership changes to our CEO and CFO positions, in 2022 the Compensation Committee determined it was necessary to provide certain of our NEOs retention awards to ensure their continued commitment and dedication to the Company during this period.

- **Annual Short-Term Incentives:** The Compensation Committee exercised its discretion to modify the performance targets for determining payouts under the 2022 Short-Term Incentive Plan ("2022 STI Plan"). At the beginning of 2022, when the Compensation Committee set the performance targets for the 2022 STI Plan, the Company had not yet determined the impact of the significant accounting irregularities discovered with respect to its former Pipeline Engineering business unit. As announced in the Form 8-K filed on March 14, 2022, the Pipeline Engineering accounting irregularities occurred over multiple years under the leadership of Mr. Buckhout and other former executives in our Industrial segment. For this reason, the Compensation Committee determined that it was in the best interest of the Company to exclude the Pipeline Engineering business unit for purposes of determining awards under the 2022 STI Plan. Additionally, the Compensation Committee excluded the impact of sale-lease-back transactions in determining 2022 STI Plan results since such transactions, while a net positive for our cash flow and other long-term strategic initiatives, had a negative accounting impact on our AOI STI performance results. These modifications impacted the STI awards for all plan participants, including our NEOs. The 2022 STI Plan results for our NEOs are set forth below under *2022 Short-Term Incentive Plan Results*.
- **Outstanding Long-Term Incentives:** While a certain portion of our stock-based long-term incentive awards ("LTI") were significantly impacted by the recent restatement of our financial results, the Compensation Committee did not modify any of the performance targets or results when determining the number of shares earned under our performance-based restricted stock unit awards ("PSUs"), and as a result the third and final tranche of our 2020 PSUs earned 0% of target shares as set forth below under *Prior Year PSU Results*. The vesting of our 2021 and 2022 PSU awards will be determined following the completion of the three-year performance periods ending in 2024 and 2025, respectively.
- **Compensation Terms for Interim and New Appointments:** We experienced several management transitions during 2022. As a result, the Compensation Committee took actions to put into place compensation packages for interim and new appointments, including Mr. Najjar's appointment to Interim President and Chief Executive Officer in January 2022 and subsequent appointment in August to President and Chief Executive Officer, and similarly, for Mr. Sharma with respect to his appointment to Interim Chief Financial Officer in January and subsequent appointment to Chief Financial Officer in August.
- **Compensation Clawback:** In connection with our restatement of previously filed financial results, the Compensation Committee conducted a review of incentive compensation that was subject to clawback pursuant to our policies. As a result of this review, the Compensation Committee determined that it was in the best interest of the Company to not pay any 2021 STI award to Mr. Buckhout or to our former President, Industrial Group. The Committee also decided to not payout any portion of the last vesting tranche of the 2019 PSU award to any participants, including Messrs. Najjar, Sharma and Buckhout, since prior payouts for earlier vesting tranches of that award would have been reduced had they been determined based on restated award results.

CEO Pay At-A-Glance (Target v. Realized)

The chart below shows target and realized compensation for our CEO for each of the past three years. The years 2020 and 2021 reflect Mr. Buckhout's target and actual realized compensation, and 2022 reflects Mr. Najjar's target and actual realized compensation. In each case, target total direct compensation represents the base salary, target annual bonus, and target annual LTI awards in effect for our CEO as of the end of each such year. Realized compensation represents year-end base salary, annual bonus actually paid in cash (including retention bonus payments, if applicable), the value realized upon the exercise of stock options or vesting of PSUs or RSUs, including RSUs granted under our Management Stock Purchase Plan during each year, plus any special payments. Mr. Buckhout's realized compensation trailed target total direct compensation for each of 2020 and 2021, reflecting the rigor of our goal-setting process for annual bonus and PSU awards and the pay for performance nature of our overall executive compensation program. With regard to 2022, as a result of being newly appointed to the CEO role, Mr. Najjar's target compensation was set at a lower level than Mr. Buckhout's most recent target compensation, and Mr. Najjar's realized compensation reflects the pro-ration of his 2022 STI award between his former position as COO/Interim CEO and his new position as CEO and also reflects the realized value of RSU vestings attributable to prior year equity grants that preceded his promotion to CEO.



Good Compensation Governance

The Compensation Committee continually evaluates the Company's compensation policies and practices to ensure that they are consistent with good governance principles. Highlights of our executive compensation program include:

- **Short-term incentive plans aligned to critical metrics.** The short-term incentive plan is designed to ensure appropriate focus on the respective business units as well as overall corporate performance. Specifically, Corporate NEO bonuses are based 60% on the composite performance results of the A&D and Industrial segments with respect to AOI, AWC % of Sales and net sales goals, and 20% based on CIRCOR AOI and 20% based on CIRCOR Free Cash Flow.
- **Equity vehicle mix for NEOs aligned with long-term objectives.** Our 2022 annual LTI awards for NEOs that sit on our executive leadership team (comprised of Mr. Najjar, Mr. Sharma and Ms. Wenzell) were a mix of 50% PSUs based on a three-year performance period and 50% time-based restricted stock units ("RSUs") that vest upon meeting specified multi-year service requirements, providing both long-term performance and retention incentives in support of our business strategy. Our other NEOs that participated in the 2022 LTI award (Messrs. Tiedeman and Goel) received awards using 100% RSUs to maximize long-term retention incentives. The 2022 LTI awards are described in detail below under *Long-Term Incentive Awards*.
- **TSR performance metric for long-term awards.** The Relative TSR metric that we use for our PSU awards closely aligns the long-term interests of our executive management team with those of our stockholders by formulaically linking award results with shareholder returns as measured over a three-year period.

The table below summarizes our compensation governance practices:

What We Do		What We Do Not Do	
✓	We place the majority of weight on performance-based, at-risk, and long-term compensation.	X	We do not provide any compensation-related tax gross-ups (except in connection with relocation expenses).
✓	We deliver rewards that are based on achieving long-term objectives and the creation of stockholder value.	X	We do not provide significant perquisites.
✓	We target total direct compensation at approximately the market median for our peer group.	X	We do not allow officers or directors to hedge Company stock.
✓	We maintain stock ownership guidelines for our directors and executives, including our CEO and other NEOs.	X	We do not reprice or replace out-of-the-money stock options without stockholder approval.
✓	We have “double-trigger” change in control vesting of cash severance payments and equity awards.	X	We do not have contracts that guarantee employment with any executive (all employment is terminable-at-will).
✓	Our Compensation Committee seeks advice from an independent compensation consultant.		
✓	We maintain a clawback policy with respect to incentive-based cash and equity compensation.		
✓	We cap annual bonus payouts to eliminate potential windfalls for executives.		
✓	We cap the vesting value of TSR-based PSUs to eliminate potential windfalls for executives.		
✓	We encourage executives to invest their cash incentives in the Company through our Management Stock Purchase Plan (MSPP).		

What Guides Our Program

Our Compensation Guiding Principles

The philosophy underlying our executive compensation program is to attract, retain and motivate highly qualified and talented executives and reward the achievement of specific annual, long-term and strategic goals that promote the profitable growth of the Company and enhance stockholder value. To this end, the following principles guide the structure of our program:

- **Link to business priorities and performance.** A significant portion of an executive’s total compensation should be “at risk,” subject to the attainment of certain specific and measurable performance goals and objectives. We select performance metrics that are most directly tied to the creation of enterprise value and that our management team can meaningfully influence. As performance goals are met or exceeded, executives are rewarded commensurately. Conversely, if goals are not met, actual earned compensation will be lower than target compensation.
- **Alignment of executives with stockholders' interests.** Our compensation program should encourage our executives to hold a meaningful amount of equity. In addition, we believe compensation to our executives should be based on a balance of short-term and long-term financial performance factors. This approach also supports our retention strategy and promotes our achievement-oriented culture.
- **Competitiveness of Pay Position.** Target total direct compensation should be competitive with that being offered to individuals holding comparable positions at other public companies with which we compete for executive talent. In general, we position target total direct compensation for our NEOs, as well as each element of total target compensation, to be at or around the median target compensation for executives with similar positions at our peer group companies. When making compensation decisions we also take into consideration other factors such as tenure, performance, and retention risk.
- **Maintenance of Governance Standards.** We believe that maintaining best-practice executive compensation governance standards is in the best interests of our stockholders and executives and critical to the ability to manage risk.

Elements of Compensation

Our compensation philosophy is supported by the following elements of compensation:

Pay Element	How It's Paid	What It Does	How It Links to Performance
Base Salary	Cash (Fixed)	Provides a competitive, fixed rate of pay relative to similar positions in the market and enables the Company to attract and retain critical executive talent	Based on job scope, level of responsibilities, individual performance, experience, tenure and market levels
Short-Term Incentive Plan	Cash (At-Risk)	Focuses executives on achieving annual financial and strategic goals that enhance long-term stockholder value	<ul style="list-style-type: none"> – Tied to achievement of targets relating to AOI, Free Cash Flow, Working Capital and Net Sales – No formulaic payouts for performance below threshold – Award capped at 300% of target value with respect to 2022; cap reduced to 200% for 2023
Long-Term Incentive (LTI) Plan	PSUs	Provides incentives for our executive leadership team to execute on longer-term goals that will increase stockholder returns	<ul style="list-style-type: none"> – Tied to achievement of Relative TSR when compared to peer industrial companies – Vesting follows three-year period based on performance results – Number of shares is capped at 200% of target (100% of target if absolute TSR is negative)
	RSUs	Supports leadership retention strategy	<ul style="list-style-type: none"> – Annual vesting over a three-year period – Paid in CIRCOR shares at vesting

How We Further Foster Stock Ownership and Strengthen Alignment with Stockholders

In order to more closely align the interests of our executives with those of our stockholders, our NEOs are also eligible to participate in the MSPP, which is designed to encourage MSPP eligible participants to invest up to 100% of their own earned incentive compensation in equity of the Company.

The Compensation Committee approves the participants in the MSPP. Participants are entitled to purchase RSUs under the MSPP at a discount of 33% from the fair market value of the Company's Common Stock on the annual grant date using all or a portion of their pre-tax, short-term incentive award. RSUs purchased under the MSPP vest in whole after a three-year period. Any NEO who resigns from the Company (other than due to retirement) prior to vesting may lose the benefits associated with the discounted purchase price of RSUs purchased under the MSPP, as well as any further appreciation in stock price and accrued dividends associated with such RSUs.

Total Pay Mix at Target

A significant portion of our NEOs' compensation is designed "at risk," subject to the attainment of specific and measurable performance goals and objectives or subject to the valuation of the Company's stock price. For example, as shown in the diagram below, 60% of the target total direct compensation of Mr. Najjar, appointed to CEO on August 10, 2022, and 51% of the target total direct compensation of our other NEOs serving at year-end is allocated to a combination of PSUs, RSUs and target bonus; and therefore, based on achieving financial and operating metrics or based on the valuation of the Company's stock price.

CEO Pay Mix at Target



Other NEOs Pay Mix at Target



The above diagram reflects annualized target total direct compensation as of year-end 2022, which we define to include annualized base salaries, target short-term incentive amounts and the target LTI award amounts used to determine the number of target shares underlying PSU and RSU awards.

Strong Governance Practices Utilized in Determining Executive Compensation

The Role of the Compensation Committee. The Compensation Committee oversees the executive compensation program for our NEOs. The Compensation Committee is comprised of independent, non-employee members of the Board. The Committee works very closely with its independent consultant and management to examine the effectiveness of the Company's executive compensation program throughout the year. Attracting and retaining a team of outstanding executives with complementary skills is one of the Company's priorities.

When making decisions regarding the compensation of the NEOs, the Compensation Committee considers information from a variety of sources. The Compensation Committee also regularly assesses our incentive plan measures in light of current business context, relevance to stockholders and alignment with peer company practices. The Compensation Committee analyzes both individual elements, total compensation and pay mix for each of the NEOs that sit on our executive leadership team, while the CEO performs these tasks for our other NEOs and executives. While actual compensation reflects the Company's performance, the Company's goal is for total target compensation, as well as each element of total target compensation, to be at or around the median target compensation for executives with similar positions at our peer group companies (described in further detail below). The Compensation Committee also incorporates flexibility into its compensation programs and into the assessment process to respond to changing business needs, and to take into consideration individual performance, including the relative complexity and strategic importance of specific roles.

In setting meaningful performance goals for our STI Plan, the Compensation Committee carefully considers a number of factors, including the general economic and industry climate, anticipated customer spending, projected revenue from current contracts and renewals and deals in the pipeline. Based on these factors, a range of performance scenarios is developed. Goals are then set at the threshold, target and maximum performance levels with the target goals aligning with the Company's operating plan. CIRCOR strives for alignment between our STI Plan performance targets and our operating plan and the financial guidance we provide externally. In setting performance goals for our LTI Plan, the Compensation Committee considers the same factors as for the STI Plan but over a multi-year timeframe, its long-term objectives and the degree of difficulty in setting extended multi-year financial goals based on the economic and industry climates. We believe achievement of the meaningful performance targets and shareholder return goals that result from this rigorous goal-setting process will drive long-term value creation for our investors.

The Compensation Committee makes all final compensation and equity award decisions regarding those of our NEOs that are part of the Company's executive leadership team, and the CEO makes all final compensation decisions with respect to our other NEOs and executives.

The Role of Management. The CEO reviews his compensation recommendations pertaining to NEOs and other executives with the Committee providing transparency and oversight. Compensation decisions for those of our NEOs that are not part of our executive leadership team and other non-leadership executives are made by the CEO. The CEO does not participate in the deliberations of the Committee regarding his own compensation.

The Role of the Independent Consultant. The Compensation Committee engages an independent compensation consultant to provide expertise on competitive pay practices, program design, and an objective assessment of any inherent risks of any programs. In 2022, the Committee retained Semler Brossy Consulting Group as its independent consultant. Semler Brossy reports directly to the Committee and does not provide any additional services to management. The Committee has conducted an independence assessment of its consultants in accordance with SEC rules and has determined that there are no conflicts of interests.

The Role of Market References - Peer Group Companies. Our executive compensation program considers the compensation practices of companies with which the Company competes or could compete for executive talent. In its review of 2022 executive compensation, the Compensation Committee compared the Company's overall compensation structure (mix of pay) and levels (total annual compensation, as well as each component of their total compensation) for those of our NEOs that are part of the executive leadership team with the peer group companies to the extent appropriate position comparisons are available; compensation for our other NEOs was reviewed by reference to market data for comparable roles as reported in commercial salary surveys and the Company's corresponding internal salary ranges based on job level.

Peer group companies generally have similar business models (e.g., multiple product lines, significant concentration of international sales, manufacturing operations) and are within comparable size ranges (e.g., market capitalization, revenue). For the purposes of setting 2022 compensation, and with the support of its prior compensation consultant in 2021, the Compensation Committee considered the following list of peer group companies (the "Peer Group Companies") which was updated from the prior year:

Peer Group Companies for Setting 2022 Compensation		
Albany International Corp.	Helios Technologies, Inc. ⁽¹⁾	SPX FLOW, Inc. ⁽²⁾
Altra Industrial Motion Corp.	Kadant Inc. ⁽¹⁾	Standex International Corporation
Astrec Industries, Inc. ⁽¹⁾	Kaman Corporation ⁽¹⁾	Tennant Company
Barnes Group Inc.	Mueller Water Products, Inc.	TriMas Corporation
Ducommun Incorporated ⁽¹⁾	Rexnord Corporation	Watts Water Technologies, Inc.
ESCO Technologies, Inc.	SPX Corporation	

(1) This company is one of the five new companies that the Compensation Committee added to our peer group list following its review in 2021, replacing the following companies that were removed from the prior list: Chart Industries, Inc., Enerpac Tool Group Corp., EnPro Industries, Inc., Forum Energy Technologies, Inc., and NN, Inc.

(2) This company became a privately owned company during 2022 and as a result is no longer a component of our peer group.

The Committee also reviewed supplemental market survey data as part of its subjective determination of 2022 target compensation levels for our NEOs. When reviewing market survey data, to the extent available the Compensation Committee relies on size-appropriate general industry survey data based on annual revenue. In its 2022 compensation review, the survey data was sourced from the 2021 Willis Towers Watson General Industry Executive Survey Report.

2022 Stockholder Engagement & Say-on-Pay Results

The Company regularly evaluates its compensation programs and considers the results of its most recent stockholder advisory vote on executive compensation ("say-on-pay"), as well as feedback received directly from stockholders through our ongoing engagement.

At the October 2022 annual meeting of stockholders, we received say-on-pay support of approximately 98%. This result indicated continued support for the Company's executive compensation program. Going forward, we plan to continue to engage with our stockholders and consider their perspectives regarding compensation and governance matters.

2022 Executive Compensation in Detail

As set forth above, the principal elements of the Company's executive compensation program consist of base salary, annual short-term incentives, and long-term incentives. Each of these elements is described in detail below with respect to 2022 compensation.

Base Salary

NEOs' base salaries are generally determined by evaluating factors such as the responsibilities and complexity of the position, the experience and performance of the individual, market data for similar roles, overall company performance and internal equity within the Company.

At the beginning of each fiscal year, the Compensation Committee generally reviews and adjusts the base salaries for each of the Company's executives, with any adjustments to become effective on or about April 1st of that year. Due to the interim appointments made to our Chief Executive Officer and Chief Financial Officer roles in January 2022 and the subsequent permanent appointments to these roles made in August of 2022, among other leadership changes, the Compensation Committee made adjustments to NEO salaries at multiple points during the year. The table below illustrates the total impact of such changes for each NEO, with further details set forth in the corresponding footnotes:

NEO	2021 Year-End Base Salary	2022 Year-End Base Salary	% Change
Tony Najjar ⁽¹⁾	\$396,500	\$665,000	67.7%
Arjun Sharma ⁽²⁾	\$371,000	\$499,000	34.5%
Jessica Wenzell	\$390,000	\$406,000	4.1%
Forrest Tiedeman ⁽³⁾	\$225,000	\$260,000	15.6%
Scott Buckhout ⁽⁴⁾	\$810,000	N/A	
Amit Goel ⁽⁵⁾	\$360,000	N/A	

- (1) Mr. Najjar received a 7.1% salary adjustment in January 2022 in connection with his appointment to Chief Operating Officer (increasing his salary to \$425,000) plus a temporary monthly stipend of \$20,000 in connection with his appointment to Interim Chief Executive Officer (also effective in January 2022). He later received a 56.5% salary increase in August 2022 in connection with his permanent appointment to Chief Executive Officer (coinciding with the cessation of the monthly stipend).
- (2) Mr. Sharma received a temporary biweekly stipend of \$4,500 effective January 2022 in connection with his appointment to Interim Chief Financial Officer, plus a 3.0% salary increase in March 2022 (increasing his salary to \$382,000). He later received a 30.6% salary increase in August 2022 in connection with his permanent appointment to Chief Financial Officer (coinciding with the cessation of the bi-weekly stipend).
- (3) Mr. Tiedeman received a 1.9% merit increase in March 2022 in connection with his services as Vice President, Tax, increasing his salary to \$229,119, and a 13.5% increase in September 2022 in connection his taking on the additional role of Vice President, Treasury.
- (4) Mr. Buckhout terminated employment on January 19, 2022. He received no salary increase in 2022.
- (5) Mr. Goel received a 4.0% merit increase in March 2022, increasing his salary to \$374,400, prior to his termination of employment on September 9, 2022.

The decisions made with respect to Mr. Najjar's and Mr. Sharma's compensation were influenced by the transitional nature of their appointments during a period of significant leadership change following the departures of the former chief financial officer on December 31, 2021 and Mr. Buckhout's departure on January 19, 2022. The Compensation Committee's decisions with respect to (1) Mr. Najjar's salary increase in January 2022, (2) the temporary stipend compensation for Messrs. Najjar and Sharma in January 2022, and (3) the subsequent decisions in August to roll the annualized stipend amounts into base salary upon their permanent appointments to Chief Executive Officer and Chief Financial Officer, respectively, were based on the Committee's assessment of what they viewed as appropriate compensation levels for newly appointed officers in these public company leadership roles. Additional compensation actions were also taken for Messrs. Najjar and Sharma upon their new appointments as discussed further under "*Retention Incentive Compensation*" and "*Other 2022 Compensation Actions*".

The increases to Mr. Sharma's, Ms. Wenzell's, Mr. Tiedeman's and Mr. Goel's salary in March of 2022 was based on merit in connection with prior year performance, and in the case of Mr. Sharma and Ms. Wenzel, such decisions were made in reference to specific peer market data with Mr. Sharma's resulting salary comparing slightly above median and Ms. Wenzell's salary comparing below median.

Short-Term Incentive Plan

Target Award Opportunities. The STI Plan provides our NEOs the opportunity to earn a performance-based annual cash bonus. Actual bonus payouts depend on the achievement of pre-established performance objectives and can range from 0% to 300% of target award amounts (0% to 200% with respect to the 2023 STI Plan), depending on the financial measure. Target annual award opportunities for the NEOs are approved by the Compensation Committee and are intended to be competitive in the market in which the Company competes for talent and reflect the level of responsibility of the role. They are, therefore, set at or around the median for comparable positions in the market. For 2022, target award amounts, which are stated as a percentage of base salary, were as follows:

NEO	Target Award Opportunity (as % of base salary)
Tony Najjar	75%
Arjun Sharma	65%
Jessica Wenzell	60%
Forrest Tiedeman ⁽¹⁾	30%
Scott Buckhout ⁽²⁾	110%
Amit Goel ⁽²⁾	45%

(1) Reflects Mr. Tiedeman's STI target effective September 19, 2022 in connection with his appointment to Vice President, Treasury and Tax. Prior to this appointment, his target was 25% of salary. The 2022 STI award calculation was determined based on the pro-ratio of these target award percentages to reflect the portion of the year that each target was in effect.

(2) Was not eligible to receive any payment under the 2022 STI Plan as a result of termination of employment in 2022.

Performance Measures, Weightings and Goals. Our STI Plan pays participants based on levels of performance against rigorous metrics established by the Compensation Committee. For 2022, STI awards for NEOs were based on specific performance achievements, as calculated based on the following performance measures and weightings:

Performance Measures	Weightings
COO Functional Leadership Result ⁽¹⁾	60%
CIRCOR AOI	20%
CIRCOR Free Cash Flow	20%

(1) Reflects STI Plan results from the table below but excluding the impact of CIRCOR AOI on such results.

For the 2022 STI Plan, the COO Functional Leadership score is determined based on composite results for our A&D and Industrial segments (collectively, "Group Composite") relative to our 2022 financial plan, determined as follows:

Performance Measures	Weight
Group Composite AOI	35%
CIRCOR AOI	30%
Group Composite Adjusted Working Capital % of Sales	20%
Group Composite Net Sales	15%

The table below summarizes the Threshold, Target, Stretch and Above Stretch performance levels and the calculated results for each STI Plan performance measure in effect for our NEOs in 2022. For performance between Threshold, Target, Stretch and Above Stretch, bonus pool funding is determined by linear interpolation.

Measure(1)	(expressed in millions except percentages)					
	Threshold	Target	Stretch	Above Stretch	Achievement Results ⁽²⁾	Adjusted Achievement Results ⁽²⁾⁽³⁾
Group Composite AOI	\$86.0	\$122.8	\$159.7	\$196.5	\$119.2	\$124.9
Group Composite AWC % of Sales	39.4%	27.6%	21.2%	17.3%	31.5%	31.6%
Group Composite Net Sales	\$662.2	\$827.7	\$993.3	\$1,158.8	\$822.7	\$819.5
CIRCOR AOI	\$72.0	\$90.0	\$108.0	\$126.0	\$95.7	\$101.4
CIRCOR Free Cash Flow	\$38.5	\$55.0	\$71.5	\$88.0	\$(22.7)	\$(22.7)
Plan Funding as % of Target Bonus (2)	50.0%	100.0%	200%	300.0%	See table below	See table below

- (1) STI Plan measures are calculated using a set foreign exchange rate. That same rate is used to calculate Achievement Results. The Compensation Committee believes that it is important to use a set exchange rate for metric and result calculations to reduce the impact on the level of achievement of metrics caused by fluctuations in exchange rates, which are beyond the control of our NEOs.
- (2) To achieve funding above Target level with respect to Group Composite AWC% of Sales, Group Composite AOI achievement must be at or above Threshold; to achieve funding above Target level with respect to Group Composite Net Sales, Group Composite AOI achievement must be at or above Target; to achieve funding above Target level with respect to CIRCOR Free Cash Flow, CIRCOR AOI achievement must be at or above Threshold.
- (3) Reflects the adjusted results used to determine final 2022 STI awards for our NEOs. The Compensation Committee determined that 2022 STI Plan results should be calculated excluding the impact of the Pipeline Engineering business, which the Company exited in 2022, and excluding the impact of sales-lease-back transactions that, while aligned with our long-term strategic goals, had an adverse accounting impact to our 2022 AOI results. These adjustments were applied to all participants in the STI Plan.

Based on the outlook at the time the goals were set, the Compensation Committee concluded that these performance goals struck an appropriate balance in providing both a reasonable probability of attainment and sufficient rigor and motivation of superior performance. The Compensation Committee considered the probability of achievement of different levels of performance as well as the uncertainty of the Company's performance in 2022.

2022 Short-Term Incentive Plan Results

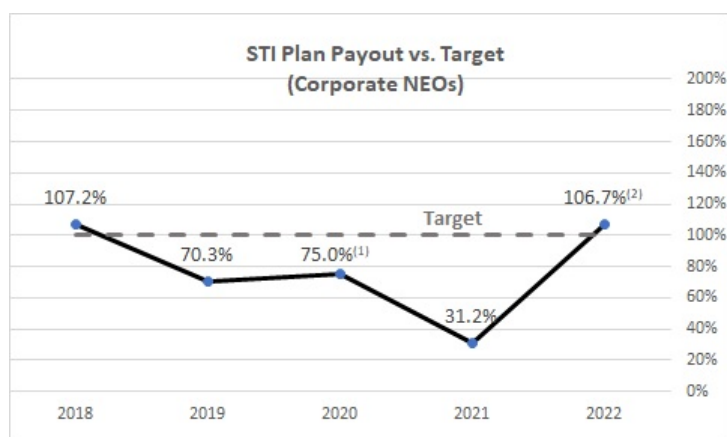
Our NEOs shared in the STI payments based on the approved STI Plan funding results as set forth in the table below:

NEO	STI Plan Alignment	Pro-Rata Factor	Pro-Rated Target STI Amount	STI Plan Funding Result ⁽²⁾	Actual Award (in Dollars)
Tony Najjar ⁽¹⁾	COO Function	60.5%	\$192,997	138.4%	\$267,169
	Corporate	39.5%	\$196,767	106.7%	\$209,915
	Combined Total	100.0%	\$389,764	122.4%	\$477,084
Arjun Sharma	Corporate	100.0%	\$324,350	106.7%	\$346,023
Jessica Wenzell	Corporate	100.0%	\$243,600	106.7%	\$259,877
Forrest Tiedeman ⁽³⁾	Corporate	100.0%	\$63,184	106.7%	\$67,405
Scott Buckhout ⁽⁴⁾	Corporate	N/A	N/A	N/A	\$—
Amit Goel ⁽⁴⁾	Corporate	N/A	N/A	N/A	\$—

- (1) Mr. Najjar's 2022 STI Plan amount reflects a pro-ration between (1) the STI Plan component that he was assigned to and his corresponding salary in connection with his service as Chief Operating Officer and Interim President and Chief Executive Officer up through August 9, 2022 and (2) the STI Plan component he was assigned to and corresponding salary in connection with his service as President and Chief Executive Officer effective August 10, 2022. Each of his STI Plan components was calculated using a target award of 75% of salary.
- (2) Reflects the results of the adjusted STI Plan measures approved by the Compensation Committee, as described in note 3 of the preceding table.
- (3) Mr. Tiedeman's Pro-Rated Target STI Amount reflects the pro-rated increase of his target % of salary from 25% to 30% effective September 19, 2022 in connection with his appointment to Vice President, Treasury and Tax .
- (4) Did not receive any payment under the 2022 STI Plan as a result of his termination of employment in 2022.

Historical Alignment of Performance and STI Plan Results

The chart below depicts our track record of past payouts for Corporate NEOs under our STI Plan over the last five years:



(1) 2020 payout percentage reflects adjustment approved by the Compensation Committee from the actual 28.3% of target achieved.

(2) 2022 payout percentage reflects the actual performance results using the adjusted performance measures approved by the Compensation Committee; without adjustment, the payout percentage would have been 81.1% of target.

Management Stock Purchase Plan ("MSPP")

In connection with our 2022 STI Plan payments, consistent with past practice, some of our NEOs made an advanced election to apply all or a portion of their 2022 STI Plan cash bonus payment towards the purchase of RSUs under the MSPP. The table below outlines the MSPP deferral election made by our NEOs prior to the beginning of 2022.

NEO	2022 Cash Bonus Deferral - Election
Tony Najjar	30%
Arjun Sharma	100%
Jessica Wenzell	10%
Forrest Tiedeman	—%
Scott Buckhout ⁽¹⁾	80%
Amit Goel	—%

(1) Although Mr. Buckhout elected to participate in the MSPP with respect to the 2022 STI payout, he was not eligible to participate in the 2022 STI payment as a result of his termination of employment on January 19, 2022.

Long-Term Incentive Awards

LTI awards are intended to provide executives with a continuing stake in the long-term success of the Company and to align their interests with those of stockholders. LTI awards are also used to attract, retain and motivate executives responsible for the Company's long-term success.

The Compensation Committee evaluates the Long-Term Incentive Plan (the "LTI Plan") annually relative to its objectives as well as practices within the Peer Group Companies. For our 2022 LTI grants, we continued to use Relative TSR as the performance measure for our PSUs, which compares our performance against a peer group of companies within the S&P 600 SmallCap Industrial Index, as described in more detail below. Using Relative TSR aligns our leadership team's compensation with stockholder interests by rewarding for TSR performance above peers and also aligns the three-year cliff performance and vesting periods with peer market practice.

For those of our NEOs that are part of our executive leadership team, comprised of Messrs. Najjar, Sharma and Ms. Wenzell at the time of the 2022 grant, the 2022 LTI Plan included an equal mix of PSUs and time-based RSUs. The Committee believes that using a mix of performance and time-based awards for our leadership team provides balance to the LTI Plan with substantial alignment to shareholder interests with the TSR measure and mitigates retention risk for our NEOs in periods when performance may lag our peers. For our other NEOs, the 2022 LTI Plan awards were delivered using 100% time-based RSUs subject to continued employment with the Company on the date of vesting, creating a strong retention incentive particularly during this period of uncertainty for the Company.

Our annual LTI awards are typically awarded in March shortly following the filing of our annual report for the preceding fiscal year, with our PSU performance period generally set to a three-year period ending on the last day of February preceding the three-year anniversary of the award (the cliff vesting date), and our time-based RSUs set with a graded vesting schedule of one-third on each of the first three anniversaries of the award date. With regard to our 2022 LTI awards granted on August 15, 2022, we modified our vesting schedule slightly as a result of the delayed timing of our annual grant date following the July 2022 filing our 2021 Annual Report on Form 10-K, with the PSU cliff vesting date set to March 15, 2025 (following the three-year performance period ending February 28, 2025) and with our time-based RSU vesting schedule set to one-third on each of August 15, 2023 (the one-year anniversary of the award date and the minimum vesting period allowed for in our LTI Plan), March 15, 2024 and March 15, 2025. The purpose of the modified vesting schedule was to maintain our traditional cadence of LTI vesting dates occurring in the March timeframe, consistent with prior awards.

Target LTI awards for each of our NEOs in 2022 was expressed in dollar amounts and varied based on consideration of factors such as role, level of responsibility, performance, past award history, and market practice for similar roles as it relates to LTI award levels and total target direct compensation:

NEO	Target PSU Award Value ⁽¹⁾	Target RSU Award Value ⁽¹⁾	Total Target LTI Value
Tony Najjar	\$250,000	\$250,000	\$500,000
Arjun Sharma	\$200,000	\$200,000	\$400,000
Jessica Wenzell	\$187,500	\$187,500	\$375,000
Forrest Tiedeman ⁽²⁾	\$—	\$40,000	\$40,000
Scott Buckhout ⁽³⁾	\$—	\$—	\$—
Amit Goel ⁽⁴⁾	\$—	\$150,000	\$150,000

- (1) The number of share units underlying the PSUs and RSUs was determined based on the average per share price of the Company's common stock for the 11 consecutive trading days ending on August 12, 2022, rounding up for any fractional shares. The corresponding grant date fair value of these awards as reported in the Summary Compensation Table and Grants of Plan Based Awards Table differs from the values listed above since we generally account for these types of awards using the closing price of the Company's common stock on the trading day preceding the grant date and, with regard to PSUs, the grant date fair value is determined based on a Monte Carlo simulation that takes into account the probability of all possible stock price outcomes and Relative TSR performance between the start of the performance period (March 1, 2022) and the grant date (August 15, 2022).
- (2) Mr. Tiedeman's target award above was in effect on the award date with respect to his position as Vice President, Tax. His target award was increased to \$60,000, to be effective with the 2023 award cycle, in connection with his additional appointment as Vice President, Treasury, effective October 1, 2022.
- (3) Mr. Buckhout did not participate in the 2022 LTI awards, having terminated employment with CIRCOR prior to the grant date.
- (4) The award for Mr. Goel was subsequently forfeited in connection with his termination of employment on September 9, 2022.

As noted above, the 2022 performance metric for the PSU portion of awards is based on Relative TSR, which measures the Company's return to stockholders in the form of stock price appreciation and assuming reinvestment of any dividends over a three-year period relative to that of other peer industrial companies (the "TSR Peer Group"). The TSR Peer Group is comprised of a custom group of companies listed on the S&P 600 SmallCap Industrial Index, which includes other mid-sized industrial companies that are comparable to the current profile of the Company. Specifically, with respect to the 2022 awards, "S&P 600 SmallCap Industrial Index" means each company that was in the S&P 600 SmallCap Industrial Index as of March 1, 2022 and continues to be a member of such index through February 28, 2025 (and including any companies that become bankrupt or insolvent prior to such date) but excluding companies in the following five industries due to the higher concentration of services in their business mix relative to the Company: Diversified Support Services, Environmental & Facilities Services, Human Resources & Employment Services, Office Services & Supplies, and Research & Consulting Services (collectively, the companies in these five excluded industries are comprised of: ABM Industries Incorporated, Exponent, Inc., Forrester Research, Inc., Harsco Corporation, Healthcare Services Group, Inc., Heidrick & Struggles International, Inc., HNI Corporation, Interface, Inc., KAR Auction Services, Inc., Kelly Services, Inc., Korn Ferry, ManTech International Corporation, Matthews International Corporation, Pitney Bowes Inc., Resources Connection, Inc., TrueBlue, Inc., Unifirst Corporation, and Viad Corp).

Final award value is determined after completion of the three-year performance period (as described below) based on the following schedule, subject in each case to (1) a vesting limit of no more than the number of target shares awarded if absolute TSR over the three year performance period is negative (the "Negative Return Cap") and (2) a limit on the value of shares that can vest, determined as of the last day of the performance period, equal to a maximum of six hundred percent (600%) of the product of (i) the number of target shares awarded, times (ii) the fair market value of a share of Common Stock on the grant date (the "600% Cap"). If the 600% Cap is exceeded, the number of PSUs that would otherwise become earned PSUs will be reduced to the extent necessary to avoid the 600% Cap being exceeded.

Company TSR Relative to the TSRs of the S&P 600 SmallCap Industrial Companies for the Performance Period	Earned Vesting Percentage (% of target shares awarded that will vest)⁽¹⁾⁽²⁾
Below 25th Percentile	0%
25th Percentile	50%
50th Percentile	100%
75th Percentile or Higher	200% (Maximum)

(1) To the extent performance falls between two levels in the table above, linear interpolation shall apply in determining the percentage of the PSUs that are earned.

(2) Subject to the Negative Return Cap and/or the 600% Cap, as applicable, as defined in the preceding paragraph.

As of December 31, 2022, the Company's Relative TSR with respect to its 2022 PSU award from the beginning of the performance period of March 1, 2022 was at the 29th percentile. Final performance results for this award will be measured through February 28, 2025 with vesting set to occur on March 15, 2025.

Prior Year PSU Results

LTI awards made to our executive leadership team in 2021 and 2020 were also delivered in a 50/50 mix of RSUs and PSUs.

2021 PSU Award: The performance criteria for the 2021 PSU awards is based on relative total shareholder return with respect to members of the S&P 600 SmallCap Industrial Index as it was constituted on February 26, 2021 that continue to be members of such index during the three year performance period ending February 29, 2024 but excluding the following companies that the Compensation Committee determined were inappropriate comparisons due to the higher concentration of services in their business mix relative to the Company: Exponent, Inc., Forrester Research, Inc., Heidrick and Struggles International, Inc, Interface, Inc., Kelly Services, Inc., Korn Ferry, Matthews International Corporation, Pitney Bowes, Inc., Resources Connection Inc., True Blue Inc., Unifirst Corporation, US Ecology Inc., and Viad Corp. The final award value of the 2021 PSU award is determined after completion of the three-year performance period using the same earned vesting percentage schedule as set forth above for the 2022 PSU award.

As of December 31, 2022, the Company's Relative TSR with respect to its 2021 PSU award from the beginning of the performance period of February 26, 2021 was below the 25th percentile. Final performance results for this award will be measured through February 29, 2024 with vesting set to occur on March 17, 2024.

2020 PSU Award: The performance criteria for the 2020 PSUs is based on cumulative performance over three years. For each performance year in the three-year performance period, cumulative goals were set for Adjusted MCF and AOM and performance is assessed at the end of each year to determine the number of shares to vest.

The PSUs will vest only if the pre-established goals are met. PSUs that do not vest in years one or two of the performance period due to performance results may vest in a subsequent year up to 100% if the cumulative performance in years two and/or three, as applicable, is 100% of target or above. Performance at threshold achievement level results in .01% of target shares vesting; performance at target achievement level results in 100% of target shares vesting; and performance at maximum achievement level or better results in a maximum of 200% of target shares vesting, in each case subject to interpolation of vesting percentage results should performance results fall between such thresholds.

For the third and final vesting tranche of the PSUs granted in 2020 (reflecting cumulative results for 2020, 2021 and 2022), the Company's performance fell below the threshold for Adjusted MCF and Average AOM resulting in zero shares vesting, as detailed below:

Performance Measures (50/50 weighting)	Performance Range			Actual Performance	% Payout	Shares Earned and Vested
	Threshold	Target	Maximum			
Fiscal Years 2020-2022 Adjusted MCF	\$127.2M	\$159.0M	\$190.8M	\$31.2M	—%	0
Fiscal Years 2020-2022 AOM	11.0%	13.7%	16.4%	8.5%	—%	0

As no shares vested in each of the three vesting tranches, the entire 2020 PSU award was forfeited for all participants, including Messrs. Najjar, Sharma and Buckhout.

2022 Retention Incentive Compensation

2022 presented several challenges to the Company with respect to stabilizing its leadership team during a prolonged period of uncertainty following (1) the termination of our former chief financial officer on December 31, 2021, (2) the termination of our former CEO, Mr. Buckhout, three weeks later in January 2022, (3) the significant work involved with restating our financial statements following the accounting irregularities found in our former Pipeline business segment in early 2022, and (4) the announcement that our Board was to engage in a review of potential strategic alternatives. These events framed many discussions by management and our Compensation Committee regarding retention strategy, including for certain of our NEOs as described below.

In connection with our former chief financial officer's termination of employment on December 31, 2021 and our search for a new chief financial officer, the Compensation Committee approved retention awards for those of our NEOs that were integral to our financial reporting, disclosure and corporate governance processes in early 2022. These awards were made to retain experienced executives to provide continuity of leadership for these important functions through the end of 2022:

- Mr. Sharma, in connection with his appointment to interim Chief Financial Officer effective January 1, 2022, received (1) an additional \$4,500 per bi-weekly pay period during the term of his interim role, (2) payment on his behalf up to \$65,000 towards an executive management education program, (3) a retention bonus installment in the amount of \$95,000 following June 30, 2022, and (4) a second retention bonus installment in the amount of \$45,000 following December 31, 2022.
- Ms. Wenzell, in connection with her General Counsel role, received a retention bonus installment in the amount of \$100,000 following the filing of our 2021 Annual Report on Form 10-K for the fiscal year ended December 31, 2021, and received a second retention bonus installment in the amount of \$50,000 following December 31, 2022.
- Mr. Goel, in connection with his critical role of Chief Accounting Officer, received a retention bonus installment in the amount of \$150,000 following the filing of our 2021 Annual Report on Form 10-K for the fiscal year ended December 31, 2021, and was eligible to receive a second retention bonus installment in the amount of \$100,000 following December 31, 2022 had his employment continued until this date; this second installment was subsequently forfeited by Mr. Goel's upon his resignation from the Company.

Payment of each of the above bonus installments was subject to (1) continued employment, (2) absence of a notice from the executive or from the Company of intent to terminate employment and (3) satisfactory performance through the applicable scheduled installment payment dates and, additionally, payment of the first bonus installment was subject to repayment to the Company in the event of termination of employment for cause prior to December 31, 2022. Mr. Sharma's retention installments, to the extent not already paid, were subject to full payment in the event the Company terminated his employment without cause. Ms. Wenzell's and Mr. Goel's retention installments, to the extent not already paid, were subject to payment on a pro-rata basis in the event the Company provided notice of its intent to terminate employment without cause. In all cases, the retention bonuses, to the extent not already paid, were payable in the event of a qualifying termination of employment in connection with a change in control transaction.

In mid-2022, as a result of the continued volatility at the Company and the Compensation Committee's recognition of the importance of maintaining continuity in the executive leadership team, the Company entered into additional retention agreements with certain of its NEOs:

- In July 2022, the Compensation Committee approved retention awards for Mr. Najjar (\$40,000), Mr. Sharma (\$74,000), Ms. Wenzell (\$78,000) and Mr. Goel (\$52,000), in each case, to be paid in two equal installments on August 31 and November 30 of 2022. The payment terms for Mr. Goel's award was later modified to be an "end of service" award, payable following his September 2022 termination of employment, in recognition of Mr. Goel's efforts in helping the Company through its financial restatements.
- The Company also entered into a retention agreement with Mr. Tiedeman in May of 2022 whereby Mr. Tiedeman received a retention bonus installment in the amount of \$57,500 following the filing of our 2021 Annual Report on Form 10-K for the fiscal year ended December 31, 2021, and is eligible to receive a second retention bonus installment in the amount of \$57,500 following the filing of our 2022 Annual Report on Form 10-K for the fiscal year ended December 31, 2022.

Payment of each of the above bonus installments is subject to (1) continued employment, (2) absence of a notice from the executive of intent to terminate employment and (3) satisfactory performance through the applicable scheduled installment payment dates and, additionally, payment of the first bonus installment was subject to repayment to the Company in the event of termination of employment for cause prior payment of the last installment. In the event of a without cause termination by the Company prior to receiving the last installment, Mr. Tiedeman's award provides for a pro-rata payment and the other awards provided for a full payment. In all cases, the retention bonuses, to the extent not already paid, were payable in the event of a qualifying termination of employment in connection with a change in control transaction.

Other 2022 Compensation Actions

In conjunction with the departure of Mr. Buckhout on January 19, 2022 and the announcement that our Board had initiated a review of potential strategic alternatives in response to multiple inquiries from third parties about a possible transaction, the Compensation Committee and/or the Board took the following additional actions to address the promotions and changes in role and responsibilities for each of Messrs. Najjar and Sharma:

- For Mr. Najjar, in connection with his appointment to Chief Operating Officer and Interim President and Chief Executive Officer effective January 19, 2022, the Board approved (1) an increase in base salary from \$396,500 to \$425,000, (2) an increase in STI target for 2022 from 60% to 65% of base salary, (3) a 2022 LTI grant in the amount of \$500,000, and (4) for his interim role, additional compensation of \$20,000 per month during the term of his interim role and a special \$250,000 RSU grant schedule to vest one year following grant (with vesting accelerated if Mr. Najjar's employment with the Company is terminated for a reason other than for cause) to be granted upon the earlier of the conclusion of his interim role or immediately prior to a change of control event.
- Upon Mr. Najjar's subsequent appointment to President and Chief Executive Officer effective August 10, 2022, the Board approved (1) an increase in base salary from to \$665,000 (equaling the annualized total of his prior salary rate of \$425,000 plus his \$20,000 per month stipend), (2) an increase in STI target for 2022 from 65% to 75% of base salary, retroactive to the beginning of 2022, and (3) continuation of his LTI annual grant target in the amount of \$500,000. The special \$250,000 RSU award referenced in the preceding paragraph was granted on August 15, 2022 in connection with the end of Mr. Najjar's interim role.
- Upon Mr. Sharma's appointment to Chief Financial Officer effective August 10, 2022, the Board approved (1) an increase in base salary to \$499,000 (equaling the annualized total of his prior salary rate of \$382,000 plus his \$4,500 biweekly stipend for his previous appointment to Interim Chief Financial Officer), (2) an increase in STI target for 2022 from 60% to 65% of base salary, retroactive to the beginning of 2022, and (3) continuation of his LTI annual grant target in the amount of \$400,000.

Additionally, in connection with the filing delay of the Company's Annual Report on Form 10-K for the fiscal year ending December 31, 2021 and the corresponding delay in the grant of our 2022 LTI awards, the Compensation Committee conditionally approved the cash settlement of these LTI awards in the event that a change in control transaction was consummated prior to the grant date. This action was taken to provide our executives with a measure of certainty regarding their compensation during a period of significant uncertainty about the future ownership and leadership structure of the Company. Ultimately, upon the grant of our 2022 LTI Awards in August, this conditional approval became irrelevant.

Other Executive Compensation Practices & Policies

Long-Term Incentive Grant Practices

Most LTI awards are granted at the time of the annual grant in the first quarter of the year, although awards may be granted as part of the hiring process or in connection with a change in responsibility. LTI awards granted during the year have a grant date no earlier than the date of approval. Grants for our executive officers are typically reviewed and approved at a regularly scheduled Compensation Committee meeting or by written consent in advance of the individual's employment commencement or promotion date. For these awards, the grant date is the date of the meeting if the individual receiving the grant has already commenced employment. If the individual has not yet commenced employment, the date of grant is the business day following the individual's first day of employment.

For our 2022 annual LTI awards, the grant date occurred later in the year than is typical as a result of the delay in the filing of our 2021 Annual Report on Form 10-K. The annual award was made on August 15, 2022 and the number of share units underlying each award was determined by dividing the award value by the average per share price of the Company's common stock for the 11 consecutive trading days ending on August 12, 2022, rounding up for any fractional shares. The method of averaging share prices over a period of time for determining the number of share units to award was introduced in the first quarter of 2020, in lieu of using the closing price on the grant date, during a highly volatile period in the trading price of our stock. Using this approach ensures that the number of share units awarded is not inflated due the closing price on the grant date.

Stock Ownership Guidelines

To further align the interests of the executive officers of the Company with the interests of the stockholders, the Company has adopted Stock Ownership Guidelines for executive officers. These guidelines establish an expectation that, within a five-year period, each such executive shall achieve and maintain an equity interest in the Company at least equal to a specified multiple of such individual's annual base salary. The applicable multiples are as follows:

Position	Target
Chief Executive Officer	5x annual base salary
Chief Financial Officer	3x annual base salary
Corporate Senior Vice Presidents	2x annual base salary

In calculating an individual's equity interest, credit is given for (i) the value of actual shares of Common Stock owned beneficially, (ii) the before-tax value of all vested stock options and (iii) the before-tax value of all outstanding RSU awards (including those which the individual has received in lieu of bonus compensation). The calculation of an individual's equity interest, however, does not include the value of any outstanding equity awards subject to risk of forfeiture by virtue of performance.

An annual review is conducted by our Nominating and Corporate Governance Committee to assess compliance with the guidelines. As of December 31, 2022, Mr. Sharma met his ownership guideline and Ms. Wenzell was on schedule to meet her guideline with the five year accumulation period. Mr. Najjar, as a result of his promotion to President and Chief Executive Officer with its five-times salary ownership target, was not yet on track to meet this guideline. Mr. Najjar's compensation was scheduled to be reviewed by the Compensation Committee at its next scheduled meeting.

Clawback Policy

Under our clawback policy, in the event of a restatement of the Company's financial results, the Board may recover or require reimbursement of incentive compensation received by a NEO during the three completed fiscal years immediately preceding the date on which we are required to prepare a restatement. In addition, if the Board determines that a NEO engaged in misconduct, then the Board shall take such action as it deems to be in the Company's best interest and necessary to remedy the misconduct or acts/omissions of the NEO and prevent their recurrence, including recovery or required reimbursement of incentive compensation. Misconduct for this purpose includes, but is not limited to, fraudulent, criminal or other willful misconduct, any action or inaction that causes harm, willful and material breach of Company policies, breach of confidentiality obligations or withholding of material information from or misstatement to the Board. Any recoupment under this policy may be in addition to, and shall not otherwise limit, any other remedies that may be available to the Company under applicable law, including disciplinary actions up to and including termination of employment. The Company intends to adopt a revised

clawback policy that complies with the newly adopted Rule 10D-1 under the Securities Exchange Act of 1934 and the listing standards implementing such rule.

In 2022, the Company did encounter an event that triggered a restatement of previously filed financial results. As disclosed in our Form 8-K issued on March 13, 2022 and in connection with accounting irregularities in the financial statements with respect to the Company's now former Pipeline Engineering business unit, the Company issued restated financial statements in July 2022 for the previously issued consolidated financial statements and related disclosures for (i) the years ended December 31, 2018, December 31, 2019 and December 31, 2020 included in its Annual Reports on Form 10-K, (ii) each of the quarterly and year-to-date periods for 2020 and (iii) the quarterly and year-to-date periods for the nine months ended October 3, 2021.

In light of this restatement activity, the Compensation Committee consulted with its advisors to assess if any compensation previously paid to its executives should be recouped given the events that transpired in our Pipeline Engineering business segment. After thoroughly reviewing the facts and circumstances, including the payment amounts that were in scope over the last three years, the Committee determined that it was in the best interest of the Company to not pay any 2021 STI award to Mr. Buckhout, our President and CEO during the restatement periods in question or to our former President, Industrial Group who was also in service during the restatement periods up until his termination of employment in 2021 but who remained eligible to participate in the 2021 STI award payout as a condition of his termination. The Committee also decided to not payout any portion of the last vesting tranche of the 2019 PSU award (covering cumulative performance over the 2019, 2020, and 2021 periods) for any participants (including Messrs. Najjar, Sharma, and Buckhout) since prior payouts for earlier vesting tranches of that award would have been reduced had they been determined based on the restated award results. The Company did not pursue any further recoupments after careful consideration of the amounts involved and the corresponding costs of pursuing recovery.

Insider Trading, Anti-Hedging & Anti-Pledging Policies

We maintain an insider trading policy that prohibits hedging the economic risk of ownership of our stock by all directors, executive officers and certain designated employees. No person who is considered an "insider" of the Company, which includes each of our NEOs and directors, may directly or indirectly sell any securities of the Company that are not owned by the person at the time of the sale (short sale). Such persons also may not purchase or sell puts, calls, options or other derivative instruments in respect of our securities at any time without the approval of the Company's Clearance Officer. We also do not allow officers or directors to pledge Company stock.

Risk Assessment and Mitigation of Compensation Policies and Practices

The Compensation Committee has reviewed our incentive compensation programs, discussed the concept of risk as it relates to our compensation program, considered various mitigating factors and reviewed these items with its various independent consultants. Based on these reviews and discussions, the Compensation Committee does not believe our compensation program creates risks that are reasonably likely to have a material adverse effect on our business.

As part of its ongoing responsibilities, the Compensation Committee has engaged its current consultant, Semler Brossy, to conduct an independent risk assessment of our executive compensation programs in 2023.

Other Benefits

The Company maintains a defined contribution 401(k) plan in which substantially all of our U.S. employees, including our NEOs, are eligible to participate. We also maintain a nonqualified deferred compensation plan to provide benefits, at the Company's discretion, that would otherwise be provided under the qualified 401(k) plan to certain participants but for the imposition of certain maximum statutory limits imposed on qualified plan benefits (for example, annual limits on eligible pay and contributions).

We also provide certain of our NEOs with a limited number of perquisites as part of their compensation arrangements, which we consider to be reasonable and consistent with competitive practice. These perquisites include annual car allowances and financial counseling/tax preparation services, which, in total, comprise a de minimis part of the NEO's target total direct compensation.

Severance and Change in Control Agreements

In order to attract and retain key executives, the Company has entered into severance and change in control agreements with certain of our NEOs, including a special severance agreement entered into with Mr. Buckhout in connection with his termination of employment, as discussed in “*Severance and Other Benefits upon Termination of Employment or Change in Control*.” In instances that we do not enter into specific agreements with our NEOs, we provide severance protection through employee policies.

The agreements and plans are intended to support management continuity and align with market practice. The change in control protections are intended to maintain focus on stockholder value creation in the event of an actual or threatened change in control. Pursuant to Company policy, the Company does not provide tax gross-ups in connection with any compensatory arrangements. As a result, we do not have any change in control agreements or severance plans that provide for tax gross-ups. More detail is provided below in “*Severance and Other Benefits upon Termination of Employment or Change in Control*.”

Deductibility of Executive Compensation

Section 162(m) of the Internal Revenue Code (Section 162(m)) generally disallows a tax deduction to public companies for compensation paid in excess of \$1 million for any fiscal year to a company's chief executive officer or specified other current or former executive officers. The Company has implemented a process to identify this excess compensation amount and to not deduct this amount on the U.S. Federal and State income tax returns.

**SUMMARY OF CASH AND CERTAIN OTHER COMPENSATION AND
OTHER PAYMENTS TO THE NAMED EXECUTIVE OFFICERS**

The following sections provide a summary of cash and certain other amounts earned by the NEOs in Fiscal Year 2022 (and the preceding two fiscal years). We encourage you to read the following tables closely. The narratives preceding the tables and the footnotes accompanying each table are important parts of each table. Also, we encourage you to read this section in conjunction with the Compensation Discussion and Analysis above.

2022 Summary Compensation Table

Name and Principal Position	Year	Salary ⁽¹⁾	Bonus ⁽²⁾	Stock Awards ⁽³⁾	Option Awards	Non-Equity Incentive Plan Compensation ⁽⁴⁾	All Other Compensation ⁽⁵⁾	Total
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Tony Najjar President and Chief Executive Officer (6)	2022	\$ 649,290	\$ 158,097	\$ 778,755	\$ —	\$ 358,987	\$ 15,616	\$ 1,960,745
	2021	\$ 393,846	\$ —	\$ 477,828	\$ —	\$ 90,057	\$ 14,031	\$ 975,762
	2020	\$ 345,962	\$ 79,356	\$ 368,095	\$ —	\$ 128,544	\$ 2,835	\$ 924,792
Arjun Sharma Chief Financial Officer and Senior Vice President, Business Development (7)	2022	\$ 494,212	\$ 252,058	\$ 426,978	\$ —	\$ 262,965	\$ 22,581	\$ 1,458,794
	2021	\$ 368,462	\$ —	\$ 526,926	\$ —	\$ 69,505	\$ 22,401	\$ 987,294
	2020	\$ 315,712	\$ 100,813	\$ 395,605	\$ —	\$ 61,187	\$ 14,342	\$ 887,659
Jessica Wenzell Senior Vice President, General Counsel & Chief People Officer	2022	\$ 402,308	\$ 240,380	\$ 368,287	\$ —	\$ 197,497	\$ 13,168	\$ 1,221,640
	2021	\$ 368,000	\$ —	\$ 279,469	\$ —	\$ 73,064	\$ 13,890	\$ 734,423
Forrest Tiedeman Vice President, Treasury and Tax (8)	2022	\$ 236,483	\$ 73,680	\$ 43,941	\$ —	\$ 51,226	\$ 10,074	\$ 415,404
Scott Buckhout Former President and Chief Executive Officer (9)	2022	\$ 56,077	\$ —	\$ —	\$ —	\$ —	\$ 1,747,436	\$ 1,803,513
	2021	\$ 805,385	\$ —	\$ 3,410,115	\$ —	\$ —	\$ 14,001	\$ 4,229,501
	2020	\$ 754,017	\$ 405,586	\$ 2,193,689	\$ —	\$ 246,164	\$ 3,582	\$ 3,603,038
Amit Goel Former Vice President, Finance, Corporate Controller and Chief Accounting Officer (10)	2022	\$ 263,077	\$ 202,000	\$ 164,691	\$ —	\$ —	\$ 66,326	\$ 696,094

- (1) 2022 Salary figures include stipends paid in the amount of (1) \$143,077 for Mr. Najjar in connection with his tenure as Interim Chief Executive Officer between January 19, 2022 and August 10, 2022 and (2) \$74,250 for Mr. Sharma in connection with his tenure as Interim Chief Financial Officer between January 1, 2022 and August 10, 2022.
- (2) As set forth in the table below, 2022 Bonus figures include the portion of the 2022 STI Plan awards attributable to the Compensation Committee's decision to adjust the performance measures used to determine plan funding as discussed above in "Compensation Discussion and Analysis—2022 Short-Term Incentive Plan Results," whether received in cash or restricted stock units ("RSUs"). The number of RSUs purchased by each NEO, if any, is set forth in Note 4 below.

NEO	Year	Retention Bonus	Bonus Attributable to Adjustment to 2022 STI Plan Performance Measure	Total Bonus Reported
Tony Najjar	2022	\$40,000	\$118,097	\$158,097
	2021	\$—	\$—	\$—
	2020	\$—	\$79,356	\$79,356
Arjun Sharma	2022	\$169,000	\$83,058	\$252,058
	2021	\$—	\$—	\$—
	2020	\$—	\$100,813	\$100,813
Jessica Wenzell	2022	\$178,000	\$62,380	\$240,380
	2021	\$—	\$—	\$—
Forrest Tiedeman	2022	\$57,500	\$16,180	\$73,680
Scott Buckhout	2022	\$—	\$—	\$—
	2021	\$—	\$—	\$—
	2020	\$—	\$405,586	\$405,586
Amit Goel	2022	\$202,000	\$—	\$202,000

- (3) Reflects the grant date fair value of PSUs and time-based restricted stock units (“Time RSUs”), including MSPP RSUs attributable to the 33% discount on restricted stock units purchased under our Management Stock Purchase Plan (MSPP) in 2022 in connection with our 2021 STI Plan. For more details about these grants, please refer to the section below entitled “2022 Grants of Plan-Based Awards.” A discussion of the assumptions used in calculating the amounts in this column may be found in Note 13 (“Share-Based Compensation”) to our audited consolidated financial statements included in this Annual Report on Form 10-K.
- (4) Reflects the amounts earned under our STI Plan by each NEO, whether received in cash or RSUs. Some of our NEOs elected to use all or a portion of their short-term incentive to purchase RSUs under our MSPP. The number of RSUs purchased by each NEO is as follows:

NEO	Year	Percentage of Bonus Used to Purchase RSUs	Amount of Bonus Excluding Retention Bonus	Amount of Non-Equity Incentive Plan Compensation	Amount of Bonus Plus Non-Equity Incentive Plan Compensation	Amount of Bonus and Non-Equity Incentive Compensation Used to Purchase RSUs	Number of RSUs Purchased
Tony Najjar	2022	30%	\$ 118,097	\$ 358,987	\$ 477,084	\$ 143,125	[TBD]
	2021	30%	\$ —	\$ 90,057	\$ 90,057	\$ 27,017	2,040
	2020	30%	\$ 79,356	\$ 128,544	\$ 207,900	\$ 62,370	2,337
Arjun Sharma	2022	100%	\$ 83,058	\$ 262,965	\$ 346,023	\$ 346,023	[TBD]
	2021	100%	\$ —	\$ 69,505	\$ 69,505	\$ 69,505	5,249
	2020	100%	\$ 100,813	\$ 61,187	\$ 162,000	\$ 162,000	6,072
Jessica Wenzell	2022	10%	\$ 62,380	\$ 197,497	\$ 259,877	\$ 25,988	[TBD]
	2021	—%	\$ —	\$ 73,064	\$ 73,064	\$ —	0
Forrest Tiedeman	2022	—%	\$ 16,180	\$ 51,226	\$ 67,406	\$ —	0
Scott Buckhout	2022	70%	\$ —	\$ —	\$ —	\$ —	0
	2021	70%	\$ —	\$ —	\$ —	\$ —	0
	2020	70%	\$ 405,586	\$ 246,164	\$ 651,750	\$ 456,225	17,100
Amit Goel	2022	—%	\$ —	\$ —	\$ —	\$ —	0

Under our MSPP, the purchase price for RSUs is 67% of the closing price of our Common Stock on the date of grant. The grant date fair value of the portion of MSPP RSUs attributable to the 33% discount have been included under the Stock Awards column as additional compensation to NEOs. The total number of RSUs to be purchased in connection with the 2022 STI Plan will be determined by dividing the dollar amount of the bonus indicated in the above table by 67% of the closing price of our Common Stock on the grant date, scheduled to occur following the filing of this 2022 Annual Report on Form 10-K. For the 2021 STI Plan, the total number of RSUs purchased was determined by dividing the dollar amount of the bonus indicated in the above table by \$13.24, which is 67% of the closing price of our Common Stock on August 15, 2022. For the 2020 STI Plan, the total number of RSUs purchased was determined by dividing the dollar amount of the bonus indicated in the above table by \$26.68, which is 67% of the closing price of our Common Stock on March 16, 2021. The actual number of RSUs purchased under the MSPP may be reduced to pay for tax withholding. Although Mr. Buckhout elected to participate in the MSPP with respect to the 2021 and 2022 STI payouts, no MSPP award was granted since he did not receive a 2021 or 2022 STI payment.

- (5) See “2022 All Other Compensation Table” for specific items in this category.
- (6) Mr. Najjar was named President and Chief Executive Officer effective August 10, 2022; previously, he served as Chief Operating Officer and Interim President and Chief Executive Officer with effect from January 19, 2022 and served in the role of President, Aerospace and Defense Group prior to January 19, 2022.
- (7) Mr. Sharma was named Chief Financial Officer effective August 10, 2022; previously, he served as our interim Chief Financial Officer with effect from January 1, 2022 and continues to serve as our Senior Vice President, Business Development.
- (8) Mr. Tiedeman was appointed as our Vice President of Treasury effective October 1, 2022 and continues to serve as our Vice President of Tax.
- (9) Mr. Buckhout terminated employment with CIRCOR on January 19, 2022.
- (10) Mr. Goel terminated employment with CIRCOR on September 9, 2022. The equity awards granted to Mr. Goel in 2022 and disclosed in column (e) of the Summary Compensation Table were forfeited

2022 All Other Compensation Table

Name	Perquisites and Other Personal Benefits (1)	Tax Preparation and Financial Planning	Life Insurance Premiums (2)	Payments Relating to Employee Savings Plan (3)	Other (4)	Total
Tony Najjar	\$296	\$2,448	\$672	\$12,200	\$—	\$15,616
Arjun Sharma	\$8,696	\$1,013	\$672	\$12,200	\$—	\$22,581
Jessica Wenzell	\$296	\$—	\$672	\$12,200	\$—	\$13,168
Forrest Tiedeman	\$178	\$—	\$437	\$9,459	\$—	\$10,074
Scott Buckhout	\$25	\$—	\$56	\$2,243	\$1,745,112	\$1,747,436
Amit Goel	\$296	\$—	\$672	\$10,595	\$54,762	\$66,325

- (1) The amounts shown in this column reflect, as applicable, the cost of group disability insurance that provides for higher coverage levels than generally available to other employees, plus, in the case of Mr. Sharma, his annual car allowance of \$8,400.
- (2) The amounts shown in this column reflect group term life insurance premiums paid on behalf of each NEO.
- (3) The amounts shown in this column reflect Company matching contributions earned in 2022 with respect to each NEO's 401(k) account of up to 4.0% of eligible compensation, subject to the limits imposed by IRS regulations.
- (4) For Mr. Buckhout, the amount shown in this column reflects severance in the amount of \$1,701,000, subsidized COBRA payments in the amount of \$23,737, and \$20,375 for accrued vacation. For Mr. Goel, the amount includes consulting fees paid to Mr. Goel following his termination of employment in the amount of \$25,800 and \$27,158 for accrued vacation.

2022 Grants of Plan-Based Awards

The following table summarizes the grant of plan-based awards made to our NEOs in 2022.

Name	Type of Award (1)	Grant Date	Approval Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards (2)			Estimated Future Payouts Under Equity Incentive Plan Awards (3)			All Other Stock Awards: Number of Shares of Stock or Units (#)	Grant Date Fair Value of Stock and Option Awards (\$) (4) (5)
				Thresh-hold (\$)	Target (\$)	Maxi-mum (\$)	Thresh-hold (#)	Target (#)	Maxi-mum (#)		
(a)		(b)		(c)	(d)	(e)	(f)	(g)	(h)	(i)	(l)
Tony Najjar	STI			194,882	389,764	1,169,292	—	—	—	—	—
	PSU	8/15/2022	8/8/2022	—	—	—	6,953	13,905	27,810	—	216,501
	Time RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	13,905	274,485
	Special RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	13,905	274,485
	MSPP RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	673	13,285
Arjun Sharma	STI			162,175	324,350	973,050	—	—	—	—	—
	PSU	8/15/2022	8/8/2022	—	—	—	5,562	11,124	22,248	—	173,201
	Time RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	11,124	219,588
	MSPP RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	1,732	34,190
Jessica Wenzell	STI			121,800	243,600	730,800	—	—	—	—	—
	PSU	8/15/2022	8/8/2022	—	—	—	5,215	10,429	20,858	—	162,380
	Time RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	10,431	205,908
Forrest Tiedeman	STI			31,592	63,184	189,552	—	—	—	—	—
	Time RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	2,226	43,941
Scott Buckhout	STI	—	—	445,500	891,000	2,673,000	—	—	—	—	—
Amit Goel	STI			84,240	168,480	505,440	—	—	—	—	—
	Time RSU	8/15/2022	8/8/2022	—	—	—	—	—	—	8,343	164,691

- (1) Type of Award:
 "STI" refers to cash awards that are subject to performance conditions under the STI Plan
 "PSU" refers to RSU awards that are subject to performance conditions
 "Time RSU" refers to RSU awards that are subject to time-based vesting only
 "Special RSU" refers to Mr. Najjar's award issued in connection with his service as Interim Chief Executive Officer, which is scheduled to vest on the one-year anniversary of the award date or earlier in the event of termination of employment without cause.
 "MSPP RSU" refers to the portion of Time RSU awards granted under our Management Stock Purchase Plan (MSPP) that are attributable to the 33% discounted purchase price. Messrs. Najjar and Sharma elected to use a portion of the short-term incentive bonus awarded under our 2021 STI Plan to purchase Time RSUs at a price equal to 67% of the closing price of our Common Stock on the date of grant. See footnote (3) to the "Summary Compensation Table" for a description of the actual amount of annual bonus earned by each of the NEOs, the corresponding amount of each NEO's bonus that was used to purchase RSUs and the total number of RSUs purchased.
 The Time RSU, PSU, and MSPP RSU awards were granted under our LTI Plan. See Summary Compensation Table and the footnotes thereto for additional information on these types of awards.
- (2) The amounts in these columns indicate the threshold, target and maximum performance bonus amounts payable under our STI Plan prior to deducting any amounts the NEO elected to use to purchase RSUs under the MSPP. The potential bonus amounts payable under the STI Plan are based on the achievement of specific financial performance metrics. The NEOs would receive a bonus payout equal to 50% of their target bonus at the threshold level of performance and 300% of their target bonus at the maximum level of performance. If none of the threshold performance metrics are met, no bonus would be payable to the NEOs under the STI Plan unless otherwise determined by the Compensation Committee.
- (3) The amounts in these columns indicate the threshold, target and maximum number of shares that the NEO could receive if an award payout is achieved under the PSUs. These potential share amounts are based on achievement of relative total shareholder return goals compared to a specified index of small-sized industrial companies during the performance period beginning on March 1, 2022 and ending on February 28, 2025. The NEO would receive 50% of the target number of shares at the threshold level of performance and 200% of the target number of shares at the maximum level of performance. If the threshold performance target is not met, then our NEOs will not receive any shares.
- (4) The amounts in this column reflect the aggregate grant date fair values of the PSUs reflected in column (g) and Time RSUs, Special RSUs and MSPP RSUs reflected in column (i), each calculated in accordance with accounting guidance.
- (5) Included in this column is the grant date fair value of the target number of PSUs granted to each NEO, which we consider to be the probable outcome of the performance conditions as of the grant date. The following table shows for each NEO the grant date fair value of the target number of PSUs granted to each such officer that is included in the Summary Compensation Table and the grant date fair value of the maximum number of PSUs.

NEO	Target Number of PSUs	Grant Date Fair Value of Target Number of PSUs	Maximum Number of PSUs	Grant Date Fair Value of Maximum Number of PSUs
Tony Najjar	13,905	\$216,501	27,810	\$433,002
Arjun Sharma	11,124	\$173,201	22,248	\$346,401
Jessica Wenzell	10,429	\$162,380	20,858	\$324,759
Forrest Tiedeman	—	\$—	—	\$—
Scott Buckhout	—	\$—	—	\$—
Amit Goel	—	\$—	—	\$—

The target number of PSUs awarded in 2022 is earned if our relative total shareholder return goals are achieved during the performance period beginning on March 1, 2022 and ending on February 28, 2025. The maximum number of PSUs that can be earned is two times the target number of PSUs. See "Long Term Equity Incentives" in "Compensation Discussion and Analysis" for more details.

Outstanding Equity Awards at 2022 Fiscal Year-End

Name	Type of Award (1)	Option Awards						Stock Awards			
		Number of Securities Underlying Unexercised Options Exercisable (#)(2)	Number of Securities Underlying Unexercised Options Unexercisable (#) (2)	Equity Incentive Plan Awards: Number of Securities Underlying unexercised unearned options (#)	Option Exercise Price (\$)	Option Expiration Date	Award Grant Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested (\$)(3)	Equity Incentive Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)(3)
(a)		(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
Tony Najjar	Option	2,730	—	—	\$38.89	2/23/2023	2/23/2016	—	—	—	—
	Option	1,449	—	—	\$60.99	2/27/2024	2/27/2017	—	—	—	—
	Option	1,704	—	—	\$42.62	3/05/2025	3/05/2018	—	—	—	—
	Option	4,224	—	—	\$33.63	3/04/2026	3/04/2019	—	—	—	—
	Time RSU	—	—	—	—	—	3/27/2020	2,802	\$67,136 (4)	—	—
	MSPP RSU	—	—	—	—	—	3/17/2021	2,337	\$55,995 (5)	—	—
	PSU	—	—	—	—	—	3/17/2021	—	—	2,692	\$64,500 (6)
	Time RSU	—	—	—	—	—	3/17/2021	3,590	\$86,016 (4)	—	—
	MSPP RSU	—	—	—	—	—	8/15/2022	2,040	\$48,878 (5)	—	—
	PSU	—	—	—	—	—	8/15/2022	—	—	13,905	\$333,164 (7)
Arjun Sharma	Time RSU	—	—	—	—	—	8/15/2022	13,905	\$333,164 (8)	—	—
	Time RSU	—	—	—	—	—	8/15/2022	13,905	\$333,164 (9)	—	—
	Option	8,406	—	—	\$38.89	2/23/2023	2/23/2016	—	—	—	—
	Option	5,943	—	—	\$60.99	2/27/2024	2/27/2017	—	—	—	—
	Option	2,760	—	—	\$42.62	3/05/2025	3/05/2018	—	—	—	—
	Option	5,280	—	—	\$33.63	3/04/2026	3/04/2019	—	—	—	—
	Time RSU	—	—	—	—	—	3/27/2020	3,203	\$76,744 (4)	—	—
	MSPP RSU	—	—	—	—	—	3/17/2021	6,072	\$145,485 (5)	—	—
	PSU	—	—	—	—	—	3/17/2021	—	—	2,692	\$64,500 (6)
	Time RSU	—	—	—	—	—	3/17/2021	3,590	\$86,016 (4)	—	—
Jessica Wenzell	MSPP RSU	—	—	—	—	—	8/15/2022	5,249	\$125,766 (5)	—	—
	PSU	—	—	—	—	—	8/15/2022	—	—	11,124	\$266,531 (7)
	Time RSU	—	—	—	—	—	8/15/2022	11,124	\$266,531 (8)	—	—
	Time RSU	—	—	—	—	—	11/9/2020	579	\$13,873 (4)	—	—
	PSU	—	—	—	—	—	3/17/2021	—	—	1,683	\$40,313 (6)
	Time RSU	—	—	—	—	—	3/17/2021	2,244	\$53,766 (4)	—	—
	PSU	—	—	—	—	—	8/15/2022	—	—	10,429	\$249,879 (7)
	Time RSU	—	—	—	—	—	8/15/2022	10,431	\$249,927 (8)	—	—
	Time RSU	—	—	—	—	—	8/12/2021	662	\$15,862 (4)	—	—
	Time RSU	—	—	—	—	—	8/15/2022	2,226	\$53,335 (8)	—	—
Scott Buckhout (10)	—	—	—	—	—	—	—	—	—	—	—
Amit Goel (10)	—	—	—	—	—	—	—	—	—	—	—

- (1) Type of Award:
 "Time RSU" refers to RSU awards that are subject to time-based vesting only
 "PSU" refers to RSU awards that are subject to performance conditions
 "Option" refers to stock option awards that are subject to time-based vesting
 "MSPP RSU" refers to RSU awards subject to time-based vesting pursuant to our Management Stock Purchase Plan
 Each of these awards was granted under our 2014 or 2019 Stock Option and Incentive Plans.
- (2) The Options listed in these columns were granted pursuant to our 2014 Stock Option and Incentive Plan and vest ratably 33% per year generally beginning on the first anniversary from such date and have a seven-year term.
- (3) The amounts shown in these columns reflect the market value of unvested RSUs calculated by multiplying the number of such unvested RSUs by \$23.96, the closing price of our Common Stock on December 30, 2022.

- (4) The amounts reflect the unvested portion of long-term incentive grants in the form of Time RSUs pursuant to our 2019 Stock Option and Incentive Plan and generally vest ratably over a three-year period, beginning on the first anniversary of the date of grant.
- (5) The amounts reflect the unvested portion of MSPP RSUs pursuant to the MSPP provisions allowing executives to receive RSUs in lieu of a specified percentage or dollar amount of their short-term incentive cash bonus. Such MSPP RSUs vest in whole on the date that is three years from the date of the grant, provided that the NEO is then employed with the Company, at which time they convert into shares of Common Stock and are issued to the executive unless the executive has selected a longer deferral period. For example, awards with a grant date of March 17, 2021 vest on March 17, 2024. To the extent that an executive does not earn a vested benefit when terminating employment before the scheduled vesting date, the unvested MSPP RSUs are cancelled and the Company returns the corresponding annual incentive cash bonus used to purchase those MSPP RSUs plus interest at the one-year U.S. Treasury bill rate. If all of the unvested MSPP RSUs disclosed in the table above were cancelled on December 31, 2022 due to an NEO's voluntary resignation, the amount that would be required to be returned to each NEO is as follows: Mr. Najjar \$83,305; and Mr. Sharma \$215,755. In the event of retirement, disability or an involuntary termination for any reason prior to the third anniversary of the grant date, the NEO vests in a pro-rata amount of the MSPP RSUs based on number of full years that the NEO was employed by the Company after the grant date divided by three, and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus with interest. See the tables for each NEO under the heading "Severance and Other Benefits Upon Termination of Employment or Change of Control" for an estimate of these amounts.
- (6) The amounts reflect the unvested portion of long-term incentive grants in the form of PSUs pursuant to our 2019 Equity Incentive Plan in connection with the 2021 PSU award. Such grants are subject to relative total shareholder return conditions during the performance period beginning on February 26, 2021 and ending on February 29, 2024 and reflect the threshold amount of the award (one-half of target award).
- (7) The amounts reflect the unvested portion of long-term incentive grants in the form of PSUs pursuant to our 2019 Equity Incentive Plan in connection with the 2022 PSU award. Such grants are subject to relative total shareholder return conditions during the performance period beginning on March 1, 2022 and ending on February 28, 2025 and reflect the target amount of the award.
- (8) The amounts reflect the unvested portion of long-term incentive grants in the form of Time RSUs pursuant to our 2019 Stock Option and Incentive Plan and vest one-third on August 15, 2023, one-third on March 15, 2024, and one-third on March 15, 2025.
- (9) The amounts reflect the unvested portion of Mr. Najjar's special long-term incentive grant in the form of Time RSUs pursuant to our 2019 Equity Incentive Plan and awarded in connection with Mr. Najjar's assignment as Interim Chief Executive Officer. This grant is scheduled to vest on the one-year anniversary of the grant date.
- (10) Messrs. Buckhout and Goel terminated employment in 2022 and had no outstanding awards as of December 31, 2022.

2022 Options Exercises and Stock Vested

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)	Number of Shares Acquired on Vesting (#)(1)	Value Realized on Vesting (\$)(2)
(a)	(b)	(c)	(d)	(e)
Tony Najjar(3)	—	—	10,276	\$267,025
Arjun Sharma(4)	—	—	12,230	\$318,189
Jessica Wenzell(5)	—	—	1,701	\$38,819
Forrest Tiedeman(6)	—	—	331	\$5,783
Scott Buckhout(7)	—	—	48,593	\$1,143,078
Amit Goel(8)	—	—	1,346	\$32,142

- (1) With respect to shares acquired upon vesting of RSUs, NEOs have shares withheld to pay associated income taxes. The number of shares reported represents the gross number prior to withholding of such shares. In certain cases, the actual receipt of shares underlying vested RSUs may have been deferred pursuant to a previous election made by the NEO. This table reports the number of shares vested regardless of whether distribution actually was made.
- (2) The amounts shown in this column reflect the value realized upon vesting of Time RSUs, PSUs, and MSPP RSUs determined by multiplying the number of share units that vested (prior to withholding of any shares to pay associated income taxes) and the closing price of our Common Stock on the day prior to vesting, or, in the case of vestings triggered by termination of employment, the closing price on the day of vesting. The amounts reported include the value of MSPP RSUs that were purchased with the following Short-Term Incentive award amounts earned prior to 2022: \$116,792 for Mr. Najjar, \$149,022 for Mr. Sharma, and \$439,076 for Mr. Buckhout.
- (3) Mr. Najjar had 5,183 MSPP RSUs and 496 RSUs vest on March 4, 2022 with a price of \$25.78, 2,802 RSUs vest on March 27, 2022 with a price of \$27.75, and 1,795 RSUs vest on April 17, 2022 with a price of \$23.88.
- (4) Mr. Sharma had 6,612 MSPP RSUs and 620 RSUs vest on March 4, 2022 with a price of \$25.78, 3,203 RSUs vest on March 27, 2022 with a price of \$27.75, and 1,795 RSUs vest on April 17, 2022 with a price of \$23.88.
- (5) Ms. Wenzell had 1,122 RSUs vest on April 17, 2022 with a price of \$23.88 and 579 RSUs vest on November 9, 2022 with a price of \$20.77.
- (6) Mr. Tiedeman had 331 RSUs vest on September 12, 2022 with a price of \$17.47.
- (7) Mr. Buckhout had 12,991 MSPP RSUs and 35,602 RSUs vest on January 19, 2022 with a price of \$23.67.
- (8) Mr. Goel had 1,346 RSUs vest on April 17, 2022 with a price of \$23.88.

2022 Nonqualified Deferred Compensation

The Company sponsors a nonqualified deferred compensation plan (the "nonqualified 401(k) excess plan") to provide benefits that would have otherwise been provided to participants in our 401(k) plan but for the imposition of certain maximum statutory limits imposed on qualified plans, such as annual limits on eligible pay and contributions. The Company also may, in its discretion, make the company contributions to the plan but only with respect to compensation in excess of the annual limit of eligible pay. In 2022, the Company elected not to make company contributions to the nonqualified 401(k) excess plan. Contributions made to the nonqualified 401(k) excess plan are invested in a rabbi trust, at the discretion of the plan participants, in one or more mutual funds selected by the plan participants.

The same mutual funds that we make available under our 401(k) plan are also available under the nonqualified 401(k) excess plan and there are no minimum or guaranteed rates of return to the participants on such investments. Distributions from the plan are made in lump sum, in the case of an in-service distribution, or lump sum or annual installments, as elected by participants, in connection with a participant's separation from service.

As discussed above, our MSPP allows our NEOs to defer the payment of their short-term incentive compensation in the form of RSUs for a deferral period of three years. In general, if the grantee's employment terminates before the end of the deferral period for reasons other than retirement, the MSPP RSUs will be settled in shares of our common stock upon termination of employment. If the grantee retires before the end of the deferral period, the MSPP RSUs will be settled in shares of our common stock at the end of the deferral period. During the deferral period, any dividends that would otherwise be paid on the deferred MSPP RSUs accumulate in cash and will be paid out at the same time that the deferred MSPP RSUs are settled. Information regarding short-term incentive compensation that was used to purchase MSPP RSUs is set forth in the Outstanding Equity Awards at 2022 Fiscal Year-End Table.

Under either deferred compensation arrangement, if a distribution is made on account of separation from service, the distribution will be delayed by six months if the participant is considered a specified employee within the meaning of Section 409A of the Internal Revenue Code.

The following table outlines employee and employer contributions to the nonqualified 401(k) excess plan for Fiscal Year 2022. The table also includes earnings or losses during Fiscal Year 2022, and the year-end balances as of December 31, 2022.

Name (a)	Item	Executive Contributions in Last FY (1) (b)	Registrant Contributions in Last FY (c)	Aggregate Earnings/(Loss) in Last FY (2) (d)	Aggregate Withdrawals/ Distributions (e)	Aggregate Balance at Last FYE (3) (f)
Tony Najjar	Excess 401K	\$—	\$—	\$—	\$—	\$—
Arjun Sharma	Excess 401K	\$—	\$—	\$(25,350)	\$—	\$70,690
Jessica Wenzell	Excess 401K	\$—	\$—	\$—	\$—	\$—
Forrest Tiedeman	Excess 401K	\$—	\$—	\$—	\$—	\$—
Scott Buckhout	Excess 401K	\$11,215	\$—	\$(40,121)	\$221,141	\$—
Amit Goel	Excess 401K	\$—	\$—	\$—	\$—	\$—

- (1) These amounts are included in 2022 salary as reported in the Summary Compensation Table.
- (2) These amounts are excluded from the Summary Compensation Table.
- (3) For Mr. Sharma, this figure includes \$50,123 that has been reported in the Summary Compensation Tables of prior year Proxy Statements.

SEVERANCE AND OTHER BENEFITS UPON TERMINATION OF EMPLOYMENT OR CHANGE IN CONTROL

To achieve our compensation objective of attracting, retaining and motivating qualified executives, we believe that we need to provide our executive officers with severance and change in control protections that are competitive with the protections offered by our Peer Group Companies. Offering our executive officers these payments and benefits facilitates the operation of our business, allows them to better focus their time, attention and capabilities on our business, assists us in recruiting and motivating executive officers, provides for a clear and consistent approach to managing involuntary departures with mutually understood separation benefits and aligns with market practice. The following section describes our severance and change in control agreements for our NEOs employed with us at year-end along with estimated payments if their employment had terminated with us as of December 31, 2022. With regard to NEOs who departed during 2022, the summary below sets forth the actual amounts that they received in connection termination of employment. Other benefits that our NEOs would be entitled to irrespective of termination of employment or change in control, such as previously vested equity awards and non-qualified deferred compensation, are described above.

Severance Agreements

Certain of our NEOs have entered into an agreement providing severance benefits if he or she resigns from the Company for good reason or if the Company terminates him or her other than for cause (the "Severance Agreements"). Messrs. Najjar, Sharma, Buckhout and Ms. Wenzell each are (or were in the case of terminated NEOs) party to such a Severance Agreement (collectively referred to as "participating" NEO's in this section). In such circumstances, Mr. Buckhout's Severance Agreement entitled him to a lump sum payment equal to (i) his then-current base salary and (ii) his target short-term incentive compensation in effect during the fiscal year in which the termination occurs. In the same circumstances, each of Messrs. Najjar's and Sharma's and Ms. Wenzell's Severance Agreement entitles him or her to a lump sum payment equal to his or her then-current base salary and short-term incentive compensation for the fiscal year in which the termination occurs, to the extent that performance goals are met for that year, prorated based on the date of termination of employment. In addition, for each participating NEO, the Severance Agreements provide that the Company will continue to subsidize the cost for medical coverage (if COBRA coverage is elected) in the same proportion it did on the date of termination for up to 12 months following termination.

To receive the benefits described above, each such participating NEO must execute a general release of claims in a manner satisfactory to the Company within 21 days of the termination of employment. Each of the participating NEOs listed in the above paragraph also has agreed to comply with non-competition and non-solicitation obligations lasting for the term of employment and one year following termination as consideration for the severance benefits.

The Severance Agreements continue to apply after a change in control. No benefits, however, are payable under the Severance Agreements if severance benefits become payable under the Change in Control Agreements, as described below.

In addition to the Severance Agreements, the company also entered into a special agreement with Mr. Buckhout in connection with his termination of employment ("Special Termination Agreement"). Mr. Buckhout's Special Termination Agreement, entered into between the parties on January 28, 2022 in connection with his termination of employment on January 19, 2022, is substantially the same as Mr. Buckhout's Severance Agreement described above except that it provides for acceleration of vesting (but not the timing of payment) of his two RSU vesting tranches that were otherwise scheduled to vest in March and April of 2022 (a combined total of 35,602 RSUs). Mr. Buckhout's Special Termination Agreement also confirmed his eligibility to participate in the 2021 STI Plan (payment amount was \$0) and the PSU vesting on December 31, 2021 pursuant to his 2019 PSU award (zero shares vested due to performance results). All other outstanding equity awards, deferred compensation benefits and earned but unused vacation balances were settled in accordance with the underlying terms of the applicable award agreements and plan documents.

Severance Plan

Those of our NEOs that are not otherwise covered under an individual Severance Agreement are eligible for severance benefits pursuant to the Company's severance policy. Mr. Tiedeman is eligible, and Mr. Goal was eligible before his termination of employment, to receive severance in an amount equal to six-months of salary in connection with a termination by the Company due to a work force reduction or job elimination or in connection with a decision to participate in an exit incentive program offered by the Company. Participants must agree to a release of claims against the Company as a condition to receiving any such severance benefits. All other outstanding equity awards, deferred compensation benefits and earned but unused vacation balances would be settled in accordance with the underlying terms of the applicable award agreements and plan documents.

Change in Control Agreements

Certain of our NEOs have entered into an agreement providing benefits in the event of a change in control of the Company (the “Change in Control Agreements”). Messrs. Najjar, Sharma, Buckhout and Goel and Ms. Wenzell each are (or were in the case of terminated NEOs) party to such a Change in Control Agreement (collectively referred to as “participating” NEOs in this section). The term of each Change in Control Agreement is one year subject to annual one-year extensions unless there is a notice of non-renewal. Each of the Change in Control Agreements provides enhanced severance benefits if, within two years following a change of control, such participating NEO’s employment is terminated by the Company without cause or he or she resigns from the Company for good reason. In such circumstances, the Change in Control Agreement entitles each such NEO to a lump sum payment equal to two times (i) the greater of his or her (a) then-current base salary, (b) salary immediately prior to the change in control or (c) salary immediately prior to the announcement of the change in control if such announcement occurs in a different year than the change in control and (ii) the greater of (a) his or her target annual bonus in effect during the fiscal year in which the termination occurs and (b) the average annual bonuses paid or payable for the three fiscal years ended prior to termination of employment or, if greater, the three fiscal years ended prior to the change in control (or, in each case, a lesser period for which annual bonuses were payable). Such payment is payable on the first payroll date after a release of claims becomes irrevocable, subject to a later payment date of up to six months and one-day following termination of employment, in the event required by Section 409A of the Internal Revenue Code.

The Change in Control Agreements also provide for (i) a pro-rated payment of annual bonus for the performance year in which termination of employment occurs based on actual performance through such termination date and payable at the same time as bonuses are paid to other senior executives, (ii) payments equal to the value of up to 24 months of COBRA premiums (if COBRA coverage is elected) to facilitate continuation of medical coverage, with the first 18 months payable in monthly installments and the remaining six months, if applicable, paid in a lump sum following the 18-month anniversary of termination of employment if COBRA coverage were maintained for the full 18 months and (iii) the accelerated vesting of certain equity-based awards in connection with a termination of employment without cause or for good reason (a “qualifying termination”) as further detailed below.

The treatment of equity awards are governed by the Change in Control Agreements as follows:

- For equity awards that are subject only to service conditions, awards will vest upon a change in control only in the event the surviving entity does not assume or continue the awards or provide substitute awards of similar value. If such awards are assumed or substituted and a qualifying termination of employment subsequently occurs within two years of the change in control event, any unvested portion of such awards will immediately vest.
- For equity awards that are subject to achievement of performance criteria, if the change in control event is also a “change in the ownership of a corporation” or a “change in the ownership of a substantial portion of a corporation’s assets” (as set forth in Treas.Reg. 1.409A-3(i)(5)), then any such award (i) will, to the extent not otherwise subject to substantial risk of forfeiture, immediately vest on a pro-rated basis based on the greater of (a) the target number of shares underlying the award or (b) the number of shares determined based on actual performance between the beginning of the performance period and the event date) or (ii) if such award is otherwise subject to a substantial risk of forfeiture, it may be replaced with a substitute award of restricted stock of the successor entity of equal value to the target number of performance shares (or, if greater, the number of shares determined based on actual performance between the beginning of the performance period and change in control date) with vesting to occur on the second anniversary of the change in control if the change in control occurs within the first 12 months of the applicable performance period or on the first anniversary of the change in control date if the change in control occurs after the first 12 months of the applicable performance period, or, if earlier, immediate vesting upon a qualifying termination of employment.

A “change in control” for purposes of the Change in Control Agreements means any of the following: (i) acquisition of 50% or more of the voting power of the Company’s then outstanding securities; (ii) consummation of a consolidation or merger of the Company that results in stockholders owning less than 50% voting shares of the consolidated or merge entity (or its ultimate parent corporation, if any), (iii) stockholders of the Company approve a complete liquidation or dissolution of the Company or there is consummation of a sale or similar transaction of substantially all of the assets of the Company; or (iv) failure of incumbent directors for any reason to constitute at least a majority of the Board. In each case above, such event must also constitute a change in ownership or effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, within the meaning of Section 409A(a)(2)(A)(v) of the Internal Revenue Code and U.S. Treasury Regulation Section 1.409A-3(i)(5).

As noted above, the participating NEOs would not be entitled to benefits under the Severance Agreements in connection with any termination from the Company with respect to which benefits under the Change in Control Agreements would be payable. Each of the participating NEOs listed above also has agreed to comply with non-competition and non-solicitation provisions lasting for the term of employment and one year following termination as consideration for the change in control benefits.

Change In Control Severance Pay Plan

Those of our NEOs that are not otherwise covered under an individual Change in Control Agreement are eligible for enhanced severance benefits in the event of a qualifying termination following a change in control pursuant to the Company's Change in Control Severance Pay Plan ("CIC Severance Plan"). Mr. Tiedeman is eligible for coverage under this plan. The CIC Severance Plan provides benefits if, within one year following a change in control, a participant is terminated by the Company without cause or he or she resigns from the Company for good reason, in either case within the twelve-month period following a Change in Control (a "Qualifying Termination"). In such circumstances, the plan provides, in the case of Mr. Tiedeman, payments equal to:

- the sum of (x) 100% of annual salary at the rate in effect on the date of a Qualifying Termination (or, if greater, at the rate in effect immediately before the Change in Control) and (y) 100% of target bonus for the then current calendar year in which such Qualifying Termination occurs, or if such target bonus amount has not yet been established for such year, 100% of the target bonus amount for the calendar year immediately prior to the calendar year in which the Qualifying Termination occurs, plus
- a lump sum cash payment equal to the sum of (x) any bonus amount that had been awarded for a completed calendar year but not yet paid as of the date of a Qualifying Termination and (y) with respect to the calendar year during which a Qualifying Termination occurs, an amount equal to the product of (i) the target bonus for such year, or if such target amount has not yet been established for such year, the target bonus amount for the calendar year immediately prior to the calendar year in which the Qualifying Termination occurs, and (ii) a fraction, the numerator of which equals the number of days from and including the first day of the calendar year during which the Qualifying Termination occurred through and including the date of Qualifying Termination, and the denominator of which is 365, plus
- a monthly payment during a period of up to 12 months (or such shorter period if coverage commences under a subsequent employer's health care plan) equal to the COBRA premium for the covered employee's level of coverage in effect at the time of a Qualifying Termination under the Company's group health plans but reduced by the monthly amount that the employee would pay for such coverage if they were an active employee, plus
- the vesting of any outstanding equity awards that vest solely on the basis of continued employment with the Company shall be accelerated solely by reason of a Change in Control only if the surviving corporation or acquiring corporation following a Change in Control refuses to assume or continue these awards or to substitute similar equity awards for those outstanding immediately prior to the Change in Control. If such equity awards are so continued, assumed or substituted and the employee incurs a Qualifying Termination within the twelve month period following the Change in Control, then the vesting and exercisability of all such unvested equity awards will be accelerated in full.

Such payments are generally payable on the first regular payroll cycle following the one-month anniversary of the Qualifying Termination (or, if later, in the first regular payroll cycle after a release of claims becomes irrevocable, or if applicable with respect to a performance bonus payment amount that has yet to be determined, the date on which such bonus payments are regularly scheduled, and in each case subject to a later payment date of up to six months and one-day following termination of employment, in the event required by Section 409A of the Internal Revenue Code.

A "change in control" for purposes of the CIC Severance Plan means any of the following:

(i) acquisition of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company's then outstanding voting securities, provided, however, that no Change in Control will be deemed to have occurred as a result of a change in ownership percentage resulting solely from an acquisition of securities by the Company or a transaction described in clause (a) of paragraph (ii) below; or

(ii) there is consummated a merger of the Company with any other business entity, other than (a) a merger which would result in the securities of the Company generally entitled to vote in the election of directors of the Company outstanding immediately prior to such merger continuing to represent (either by remaining outstanding or by being converted into such securities of the surviving entity or any parent thereof), in combination with the ownership of any trustee or other fiduciary holding such securities under an employee benefit plan of the Company or any subsidiary at least 50% (fifty percent) of the

combined voting power of the voting securities of the Company or such surviving entity or any parent thereof outstanding immediately after such merger, generally entitled to vote in the election of directors of the Company or such surviving entity or any parent thereof and, in the case of such surviving entity or any parent thereof, of a class registered under Section 12 of the Securities Exchange Act of 1934, as amended (the “Act”), or (b) a merger effected to implement a recapitalization of the Company (or similar transaction) in which no new Person is or becomes a beneficial owner, directly or indirectly, of the Company’s then outstanding voting securities; or

(iii) the stockholders of the Company approve a plan of complete liquidation or dissolution of the Company or there is consummated the sale or disposition by the Company of all or substantially all of (1) the Company’s assets on a consolidated basis in one or a series of transactions with one or more parties or (2) either one of the Company’s externally reporting segments, other than a sale or disposition by the Company of all or substantially all of the Company’s assets to an entity or entities where the outstanding securities generally entitled to vote in the election of directors of the Company immediately prior to the transaction continue to represent (either by remaining outstanding or by being converted into such securities of the surviving entity or entities or any parent(s) thereof) fifty percent (50%) or more of the combined voting power of the outstanding voting securities of any such entity or entities generally entitled to vote in such entity’s election of directors immediately after such sale and of a class registered under Section 12 of the Act; or

(iv) Incumbent Directors (as defined below) cease for any reason, to constitute at least a majority of the Board.

Employees receiving benefits under the CIC Severance Plan would not be entitled to benefits under any other severance plan or severance agreements of the Company. Additionally, plan coverage is contingent upon (i) covered employee executing and delivering to the Company a general release of claims following the date of a Qualifying Termination and (ii) covered employee executing and delivering to the Company a restrictive covenants and cooperation agreement, including non-disparagement and non-disclosure agreements, and agreement to non-solicitation of Company employees for a period of twelve (12) months following the termination of employment for any reason.

Illustration of Potential Payments upon Termination of Employment

The following tables list the estimated amounts that Messrs. Najjar, Sharma and Tiedeman and Ms. Wenzell would have become entitled to in the event of a termination from the Company or change in control of the Company had such termination or change in control occurred on December 31, 2022. Assumptions used in preparing these estimates are set forth in the footnotes to each table. These tables do not include amounts that are otherwise earned and vested prior to a termination of employment or a change in control, such as vested stock options or nonqualified deferred compensation, amounts payable under disability or life insurance coverages.

Tony Najjar Severance and Other Benefits

	Involuntary Without Cause or Voluntary Resignation With Good Reason Within Two Years Following Change in Control		Involuntary Other Than For Cause or Voluntary Resignation With Good Reason at Any Other Time		Involuntary For Cause or Voluntary Resignation Without Good Reason		Change in Control Without a Termination of Employment ("Single Trigger")		Retirement		Death or Disability	(13)
	12/31/2022		12/31/2022		12/31/2022		12/31/2022		12/31/2022		12/31/2022	
Cash Severance	\$ 2,327,500	(1)	\$ 665,000	(6)	—		—		—		—	
Pro-Rated Bonus	—	(2)	—	(2)	—		—		—		—	
Health Benefits	\$ 48,939	(3)	\$ 16,896	(7)	—		—		—		—	
Value of accelerated restricted stock units	\$ 1,386,517	(4)	\$ 416,468	(8)	—	(9)	—	(10)	\$ 365,793	(11)	\$ 1,364,949	(12)
Total Value:	\$ 3,762,956	(5)	\$ 1,098,364		—		\$ —		\$ 365,793		\$ 1,364,949	

- (1) This amount reflects payment to Mr. Najjar that would equal two times his (i) then-current base salary and (ii) then-effective target short-term incentive compensation.
- (2) Payment would equal Mr. Najjar's then-effective target short-term incentive compensation, to the extent that performance goals were met, prorated based on the date of resignation or termination (no amount is illustrated in this example since the bonus had been earned as of December 31, 2022 as reflected in the Summary Compensation Table in the "Bonus and Non-Equity Incentive Plan Compensation" columns).
- (3) This amount reflects payments to Mr. Najjar that would equal the cost of continued health insurance for a period of two years for Mr. Najjar and any covered spouse and dependents. 75% of this amount would be paid in equal monthly installments over the 18-month period following the date of termination with each installment payment conditioned on qualification for coverage under COBRA and the remaining 25% would be paid in a lump sum following the 18-month anniversary of employment termination if healthcare coverage is still in effect under COBRA.
- (4) This amount reflects the incremental value to which Mr. Najjar would be entitled due to the immediate vesting of all unvested RSUs including MSPP RSUs and the target number of PSUs assuming target performance results using the closing stock price of \$23.96 on December 30, 2022.
- (5) These amounts do not reflect a 20% excise tax under Section 4999 of the Internal Revenue Code that may apply depending upon the facts and circumstances in the event of a change in control. This estimate also does not reflect that payments are subject to being reduced in certain circumstances to avoid this tax.
- (6) This amount reflects payment to Mr. Najjar that would equal his then-current base salary
- (7) This amount reflects payments to Mr. Najjar that would equal the cost of continued health insurance for a period of one- year for Mr. Najjar and any covered spouse and dependents based on the same cost sharing percentage in effect for the health insurance plans prior to termination of employment. This amount would be divided into monthly installments with each installment payment conditioned on qualification for coverage under COBRA.
- (8) This amount reflects the incremental value to which Mr. Najjar would be entitled due to the full accelerated vesting of his special RSU award granted in 2022 in connection with his appointment to Interim Chief Executive Officer plus the pro-rata vesting of the MSPP RSUs (based on number of full years that he was employed by the Company after the grant date divided by three) using the closing stock price of \$23.96 on December 30, 2022, and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate.
- (9) An executive who voluntarily resigns prior to attaining 55 years of age and completing at least five years of service is entitled to receive a return of short-term incentive cash bonuses used to purchase MSPP RSUs plus interest at the one-year U.S. Treasury bill rate. See footnote (5) to the Outstanding Equity Awards table for the amounts that would be returned to Mr. Najjar due to a voluntary resignation on December 31, 2022. In the event of any involuntary termination, regardless of the reason for it, the executive vests in a pro-rata amount of the MSPP RSUs (based on number of full years that the executive was employed by the Company after the grant date divided by three), and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate. The value of the shares and cash that would be returned to Mr. Najjar upon an involuntary termination on December 31, 2022 would be \$83,305. This amount is included in the amount disclosed under "Involuntary Other Than For Cause or Voluntary Resignation With Good Reason at Any Other Time" above.
- (10) As of December 31, 2022, none of Mr. Najjar's unvested awards were subject to single trigger vesting.
- (11) This amount reflects the incremental value to which Mr. Najjar would be entitled due to (a) pro-rata vesting of the MSPP RSUs (based on number of full years that the executive was employed by the Company after the grant date divided by three) and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate, (b) pro-rata vesting of all other unvested RSUs (based on number of days that the executive was employed by the Company during the vesting period), and (c) pro-rata vesting of all unvested PSUs determined for each award based on number of months that the executive was employed by the Company after the grant date divided by the number of months in the applicable performance period, based on actual performance results and paid on the originally scheduled vesting date. This amount assumes final performance results equal the performance results attained as of December 31, 2022 and is valued using the closing stock price of \$23.96 on December 30, 2022.
- (12) This amount reflects the incremental value to which Mr. Najjar would be entitled due to (a) pro-rata vesting of the MSPP RSUs (based on number of full years that the executive was employed by the Company after the grant date divided by three) and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate, (b) the immediate vesting of all other unvested RSUs, and (c) immediate vesting of all unvested PSUs assuming target performance results, in each case using the closing stock price of \$23.96 on December 30, 2022.
- (13) "Disability" for this purpose means qualifying for receipt of long-term disability benefits under the Company's long-term disability plan as in effect from time to time.

Arjun Sharma
Severance and Other Benefits

	Involuntary Without Cause or Voluntary Resignation With Good Reason Within Two Years Following Change in Control		Involuntary Other Than For Cause or Voluntary Resignation With Good Reason at Any Other Time		Involuntary For Cause or Voluntary Resignation Without Good Reason		Change in Control Without a Termination of Employment ("Single Trigger")		Death or Disability	(12)
	12/31/2022		12/31/2022		12/31/2022		12/31/2022		12/31/2022	
Cash Severance	\$ 1,646,700	(1)	\$ 499,000	(6)	—		—		—	
Pro-Rated Bonus	—	(2)	—	(2)	—		—		—	
Health Benefits	\$ 55,314	(3)	\$ 24,462	(7)	—		—		—	
Value of accelerated restricted stock units	\$ 1,096,074	(4)	\$ 215,755	(8)	—	(9)	—	(10)	\$ 1,040,578	(11)
Total Value:	\$ 2,798,088	(5)	\$ 739,217		—		\$ —		\$ 1,040,578	

- (1) This amount reflects payment to Mr. Sharma that would equal two times his (i) then-current base salary and (ii) then-effective target short-term incentive compensation.
- (2) Payment would equal Mr. Sharma's then-effective target short-term incentive compensation, to the extent that performance goals were met, prorated based on the date of resignation or termination (no amount is illustrated in this example since the bonus had been earned as of December 31, 2022 as reflected in the Summary Compensation Table in the "Bonus" and "Non-Equity Incentive Plan Compensation" columns).
- (3) This amount reflects payments to Mr. Sharma that would equal the cost of continued health insurance for a period of two years for Mr. Sharma and any covered spouse and dependents. 75% of this amount would be paid in equal monthly installments over the 18-month period following the date of termination with each installment payment conditioned on qualification for coverage under COBRA and the remaining 25% would be paid in a lump sum following the 18-month anniversary of employment termination if healthcare coverage is still in effect under COBRA.
- (4) This amount reflects the incremental value to which Mr. Sharma would be entitled due to the immediate vesting of all unvested RSUs including MSPP RSUs and the target number of PSUs assuming target performance results (including PSUs that had not met the performance threshold to vest as of December 31, 2022 but that remain eligible for future vesting) using the closing stock price of \$23.96 on December 30, 2022.
- (5) These amounts do not reflect a 20% excise tax under Section 4999 of the Internal Revenue Code that may apply depending upon the facts and circumstances in the event of a change of control. This estimate also does not reflect that payments are subject to being reduced in certain circumstances to avoid this tax.
- (6) This amount reflects payment to Mr. Sharma that would equal his then-current base salary
- (7) This amount reflects payments to Mr. Sharma that would equal the cost of continued health insurance for a period of one year for Mr. Sharma and any covered spouse and dependents based on the same cost sharing percentage in effect for the health insurance plans prior to termination of employment. This amount would be divided into monthly installments with each installment payment conditioned on qualification for coverage under COBRA.
- (8) This amount reflects the incremental value to which Mr. Sharma would be entitled due to pro-rata vesting of the MSPP RSUs (based on number of full years that he was employed by the Company after the grant date divided by three) using the closing stock price of \$23.96 on December 30, 2022, and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate.
- (9) (10) An executive who voluntarily resigns prior to attaining 55 years of age and completing at least five years of service is entitled to receive a return of short-term incentive cash bonuses used to purchase MSPP RSUs plus interest at the one-year U.S. Treasury bill rate. See footnote (5) to the Outstanding Equity Awards table for the amounts that would be returned to Mr. Sharma due to a voluntary resignation on December 31, 2022. In the event of any involuntary termination, regardless of the reason for it, the executive vests in a pro-rata amount of the MSPP RSUs (based on number of full years that the executive was employed by the Company after the grant date divided by three), and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate. The value of the shares and cash that would be returned to Mr. Sharma upon an involuntary termination on December 31, 2022 would be \$215,755. This amount is reflected in the amount disclosed under "Involuntary Other Than For Cause or Voluntary Resignation With Good Reason at Any Other Time" above.
- (10) As of December 31, 2022, none of Mr. Sharma's unvested awards were subject to single trigger vesting.
- (11) This amount reflects the incremental value to which Mr. Sharma would be entitled due to (a) pro-rata vesting of the MSPP RSUs (based on number of full years that the executive was employed by the Company after the grant date divided by three) and the remaining unvested MSPP RSUs would be cancelled for a return of the corresponding bonus plus interest at the one-year U.S. Treasury bill rate, (b) the immediate vesting of all other unvested RSUs, and (c) immediate vesting of all unvested PSUs assuming target performance results, in each case using the closing stock price of \$23.96 on December 30, 2022.
- (12) "Disability" for this purpose means qualifying for receipt of long-term disability benefits under the Company's long-term disability plan as in effect from time to time.

Jessica Wenzell
Severance and Other Benefits

	Involuntary Without Cause or Voluntary Resignation With Good Reason Within Two Years Following Change in Control		Involuntary Other Than For Cause or Voluntary Resignation With Good Reason at Any Other Time		Involuntary For Cause or Voluntary Resignation Without Good Reason		Change in Control Without a Termination of Employment ("Single Trigger")		Death or Disability	(8)
	12/31/2022		12/31/2022		12/31/2022		12/31/2022		12/31/2022	
Cash Severance	\$ 1,299,200	(1)	\$ 406,000	(6)	—		—		—	
Pro-Rated Bonus	—	(2)	—	(2)	—		—		—	
Health Benefits	\$ 66,448	(3)	\$ 25,324	(7)	—		—		—	
Value of accelerated restricted stock units	\$ 648,070	(4)	—		—		—	\$ 648,070	(4)	
Total Value:	\$ 2,013,718	(5)	\$ 431,324		—	\$ —	\$ —	\$ 648,070		

- (1) This amount reflects payment to Ms. Wenzell that would equal two times her (i) then-current base salary and (ii) then-effective target short-term incentive compensation.
- (2) Payment would equal Ms. Wenzell's then-effective target short-term incentive compensation, to the extent that performance goals were met, prorated based on the date of resignation or termination (no amount is illustrated in this example since the bonus had been earned as of December 31, 2022, as reflected in the Summary Compensation Table in the "Bonus" and "Non-Equity Incentive Plan Compensation" columns).
- (3) This amount reflects payments to Ms. Wenzell that would equal the cost of continued health insurance for a period of two years for Ms. Wenzell and any covered spouse and dependents. 75% of this amount would be paid in equal monthly installments over the 18-month period following the date of termination with each installment payment conditioned on qualification for coverage under COBRA and the remaining 25% would be paid in a lump sum following the 18-month anniversary of employment termination if healthcare coverage is still in effect under COBRA.
- (4) This amount reflects the incremental value to which Ms. Wenzell would be entitled due to the immediate vesting of all unvested RSUs using the closing stock price of \$23.96 on December 30, 2022.
- (5) These amounts do not reflect a 20% excise tax under Section 4999 of the Internal Revenue Code that may apply depending upon the facts and circumstances in the event of a change in control. This estimate also does not reflect that payments are subject to being reduced in certain circumstances to avoid this tax.
- (6) This amount reflects payment to Ms. Wenzell that would equal her then-current base salary.
- (7) This amount reflects payments to Ms. Wenzell that would equal the cost of continued health insurance for a period of one year for Ms. Wenzell and any covered spouse and dependents based on the same cost sharing percentage in effect for the health insurance plans prior to termination of employment. This amount would be divided into monthly installments with each installment payment conditioned on qualification for coverage under COBRA.
- (8) "Disability" for this purpose means qualifying for receipt of long-term disability benefits under the Company's long-term disability plan as in effect from time to time.

Forrest Tiedeman
Severance and Other Benefits

	Involuntary Without Cause or Voluntary Resignation With Good Reason Within One Year Following Change in Control		Involuntary Other Than For Cause at Any Other Time		Involuntary For Cause or Voluntary Resignation		Change in Control Without a Termination of Employment ("Single Trigger")		Death or Disability	(9)
	12/31/2022		12/31/2022		12/31/2022		12/31/2022		12/31/2022	
Cash Severance	\$ 338,000	(1)	\$ 130,000	(7)	—		—		—	
Pro-Rated Bonus	—	(2)	—		—		—		—	
Health Benefits	\$ 8,189	(3)	—		—		—		—	
Accelerated retention award payments	\$ 57,500	(4)	\$ 43,730	(8)	—		—		—	
Value of accelerated restricted stock units	\$ 69,196	(5)	—		—		—	\$ 69,196	(5)	
Total Value:	\$ 472,885	(6)	\$ 173,730		—	\$ —	\$ —	\$ 69,196		

- (1) This amount reflects payment to Mr. Tiedeman that would equal one times his (i) then-current base salary and (ii) then-effective target short-term incentive compensation.
- (2) Payment would equal Mr. Tiedeman's then-effective target short-term incentive compensation, prorated based on the date of resignation or termination (no amount is illustrated in this example since the bonus earned as of December 31, 2022 exceeded target, as reflected in the Summary Compensation Table in the "Bonus" and "Non-Equity Incentive Plan Compensation" columns).
- (3) This amount reflects payments to Mr. Tiedeman that would equal the cost of continued health insurance for a period of one year for Mr. Tiedeman and any covered spouse and dependents based on the same cost sharing percentage in effect for the health insurance plans prior to termination of employment. This amount would be divided into monthly installments with each installment payment conditioned on qualification for coverage under COBRA.
- (4) This amount reflects the accelerated retention payment to which Mr. Tiedeman would be entitled if he experienced a qualifying termination of employment in connection with a change in control on December 31, 2022.
- (5) This amount reflects the incremental value to which Mr. Tiedeman would be entitled due to the immediate vesting of all unvested RSUs using the closing stock price of \$23.96 on December 30, 2022.
- (6) These amounts do not reflect a 20% excise tax under Section 4999 of the Internal Revenue Code that may apply depending upon the facts and circumstances in the event of a change in control. This estimate also does not reflect that payments are subject to being reduced in certain circumstances to avoid this tax.
- (7) This amount reflects payment to Mr. Tiedeman that would equal 50% of his then-current base salary.
- (8) This amount reflects the pro-rated retention payment to which Mr. Tiedeman would be entitled if his employment was terminated by the Company other than for cause on December 31, 2022.
- (9) "Disability" for this purpose means qualifying for receipt of long-term disability benefits under the Company's long-term disability plan as in effect from time to time.

Scott Buckhout

Severance and Other Benefits

In connection with Mr. Buckhout's termination of employment and as described in Exhibit 10.38 to CIRCOR's 2021 Annual Report on Form 10-K, he received benefits and payments that included: (1) severance in the amount of \$1,701,000, (2) subsidized healthcare coverage by way of monthly payments towards COBRA premiums, totaling \$23,737 in 2022, (3) cash payment in the amount of \$20,375 for earned but unused vacation, (4) accelerated vesting of 35,602 RSUs that were otherwise scheduled to vest in March 2022, and (5) in connection with his participation in the MSPP and pursuant to its terms, vesting of 12,991 MSPP RSUs plus a cash payment in the amount of \$556,420 representing the return of prior year short-term incentive cash bonuses used to purchase MSPP RSUs plus interest at the applicable one-year U.S. Treasury bill rate. The payments referenced in (1), (2), and (3) above were made pursuant to Mr. Buckhout's Severance Agreement with the Company and are reflected in the *Summary Compensation Table* above; the payments referenced in (4) and (5) above are attributable to compensation awards granted before 2022 that were reported in prior year Summary Compensation Tables. No payment was made to Mr. Buckhout with respect to his participation in the 2021 or 2022 STI Plans and no shares vested in connection with the last vesting tranche of his 2019 PSU award granted May 14, 2019.

Amit Goel

Severance and Other Benefits

With regard to payments made to Mr. Goel's in connection with his termination of employment on September 9, 2022, the only payments made to him were: (1) his end-of-service bonus in the amount of \$52,000 in recognition of his contributions to CIRCOR in restating its financial statements, filing the 2021 Form 10-K and filing the Q1 2022 Form 10-Q, (2) payment in the amount of \$27,158 for earned but unused vacation, and (3) consulting fees in the amount of \$25,800 for post-termination consulting services, in each case as reflected in the *Summary Compensation Table* above.

CEO PAY RATIO

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act, we are required to disclose the median of the annual total compensation of our employees (excluding our CEO), the annual total compensation of our principal executive officer, and the ratio of these two amounts.

There have been no significant changes in our employee population or employee compensation arrangements in our last completed fiscal year that we believe would significantly impact our pay ratio disclosure. Accordingly, we are using the same median employee as we used for purposes of our Fiscal Year 2020 pay ratio disclosure. We used December 31, 2020 as the date for identifying our median employee as it corresponded to the end of our fiscal year. As of December 31, 2020, we employed 3,263 employees globally. We included all of our full-time employees (but not the CEO), part-time employees and consultants (other than those whose pay was determined by a third party) in our analysis, and we identified our median employee by ranking total compensation based on employees' base pay on December 31, 2020. We use base pay as a reasonable alternative measure for annual total compensation since our incentive and equity plans do not have broad participation across our employee population. Adjustments were made to annualize the compensation for full-time and part-time employees who were not employed for all of 2020. We did not apply any cost-of-living adjustments as part of the calculation. Using this methodology, our median employee was determined to be a full-time employee.

The 2022 annual compensation of our median employee was \$68,608, calculated in accordance with the rules applicable to the Summary Compensation Table found in this Annual Report on Form 10-K. For 2022, both Mr. Buckhout and Mr. Najjar served non-concurrently in capacity as our CEO, and their combined 2022 annual compensation was \$3,764,258, including Mr. Buckhout's severance pay, as disclosed in the Summary Compensation Table. Our estimate of the ratio of Messrs. Buckhout and Najjar's combined annual total compensation to the median of the annual total compensation of all other employees is 55-to-1.

Mr. Najjar served in the capacity of either Interim Chief Executive Officer or Chief Executive Officer from January 19, 2022 through the end of 2022. When calculated relative to Mr. Najjar's 2022 annual compensation as set forth in the Summary Compensation Table (\$1,960,745), the ratio of his compensation to the above referenced median annual total compensation of all other employees is 29-to-1.

The SEC's rules for identifying the median compensated employee and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies to apply certain exclusions and make reasonable estimates and assumptions that reflect their employee populations and compensation practices. Given the different methodologies that various public companies will use to determine their estimates of pay ratio, including different methodologies, exclusions, estimates and assumptions allowed under SEC rules, and different employment and compensation practices among companies, the ratio reported above should not be used as a basis for comparison between CIRCOR and other companies.

Compensation Committee Report

The Compensation Committee has reviewed and discussed the Compensation Discussion and Analysis for Fiscal Year 2022 with management. Based on such review and discussions, the Compensation Committee recommended to the Board that the Compensation Discussion and Analysis be included in this Annual Report on Form 10-K.

Submitted by the Compensation Committee of the Board

*John (Andy) O'Donnell
Tina M. Donikowski
Bruce M. Lisman*

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

EQUITY COMPENSATION PLAN INFORMATION

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights		Weighted-average exercise price of outstanding options, warrants and rights		Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(1)	(b)	(2)	(c)
Equity compensation plans approved by security holders	407,631	(1)	\$44.62	(2)	1,247,421
Equity compensation plans not approved by security holders	—		\$—	(2)	N/A
Total	407,631		\$44.62		1,247,421

(1) Reflects 41,310 stock options and 1,338 restricted stock units granted under the Company's 2014 Stock Option and Incentive Plan, and 364,983 restricted stock units granted under the Company's 2019 Stock Option and Incentive Plan.

(2) The weighted-average exercise price does not take into account the shares issuable upon vesting of outstanding restricted stock units, which have no exercise price.

Principal Stockholders

The following table sets forth certain information regarding beneficial ownership of our common stock as of March 10, 2023, by:

- all persons known by us to beneficially own more than 5% of our common stock;
- each of our current directors;
- our NEOs included in the Summary Compensation Table appearing in this Proxy Statement; and
- all current directors and executive officers as a group.

The number of shares beneficially owned by each stockholder is determined under rules issued by the SEC and includes voting or investment power with respect to securities. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power and includes any shares as to which the individual or entity has the right to acquire beneficial ownership within 60 days after March 31, 2023, through the exercise of any stock option, RSU or other right. The inclusion in this Annual Report of such shares, however, does not constitute an admission that the named stockholder is a direct or indirect beneficial owner of such shares. As of March 10, 2023, a total of 20,365,293 shares of our common stock were outstanding.

Unless otherwise indicated below, to our knowledge, all persons listed below have sole voting and investment power with respect to their shares of common stock except, to the extent authority is shared by spouses under applicable law.

Name of Beneficial Owner ⁽¹⁾	Shares of Common Stock Beneficially Owned	
	Number ⁽²⁾	Percent ⁽²⁾
BlackRock, Inc. ⁽³⁾	3,196,920	15.7
T. Rowe Price Associates, Inc. ⁽⁴⁾	2,635,158	12.9
Gabelli Entities ⁽⁵⁾	2,168,490	10.7
Royce & Associates, LP ⁽⁶⁾	1,444,240	7.1
Segall Bryant & Hamill, LLCs ⁽⁷⁾	1,357,094	6.7
The Vanguard Group ⁽⁸⁾	1,292,582	6.4
Scott Buckhout ⁽⁹⁾	86,305	*
Samuel R. Chapin	10,994	*
Tina Donikowski	15,396	*
Arthur L. George, Jr. ⁽¹⁰⁾	—	*
Bruce Lisman	8,797	*
Helmuth Ludwig	27,120	*

Tony Najjar	31,493	*
John (Andy) O'Donnell	35,368	*
Arjun Sharma	65,013	*
Jill D. Smith	7,871	*
Forrest Tiedeman	432	
Jessica W. Wenzell	1,545	*
All current executive officers and directors as a group (ten)	204,029	1.0

* Less than 1%.

- (1) The address of each stockholder in the table is c/o CIRCOR International, Inc., 30 Corporate Drive, Suite 200, Burlington, MA 01803, except that the address of BlackRock, Inc. is 55 East 52nd Street, New York, NY 10055; the address of T. Rowe Price Associates, Inc. is 100 E. Pratt Street, Baltimore, MD 21202; the address of The Vanguard Group is 100 Vanguard Blvd., Malvern, PA 19355; the address of the Gabelli Entities (as defined in Footnote 6) is One Corporate Center, Rye, NY 10580; the address of Royce & Associates is 745 Fifth Avenue, New York, NY 10151.
- (2) The number of shares of Common Stock outstanding used in calculating the percentage for each listed person and the directors and executive officers as a group includes the number of shares of Common Stock underlying stock options held by such person or group that are exercisable, and RSUs that vest within 60 days after March 31, 2023, but excludes shares of Common Stock underlying stock options or RSUs held by any other person. Amounts in the table include: 10,107 options for Mr. Najjar and 22,389 options for Mr. Sharma.
- (3) The information is based on a Schedule 13G filed with the SEC on January 26, 2023 on behalf of BlackRock, Inc. ("BlackRock"). According to the filing, BlackRock has sole investment discretion over 3,196,920 shares and sole voting authority over 3,163,656 shares. The firm does not have the authority to vote 33,264 of the reported shares.
- (4) This information is based on a Schedule 13G/A filed with the SEC on February 14, 2023, on behalf of T. Rowe Price Investment Management, Inc. ("Price Investment") and T. Rowe Price Small-Cap Value Fund, Inc. ("T. Rowe Small Cap"). According to the filings, Price Investment has sole investment discretion over 2,635,158 shares and sole voting authority over 957,958 shares. T. Rowe Small Cap has sole voting authority over 1,654,843 shares. Price Investment does not serve as custodian of the assets of any of its clients; in each instance, only the client or the client's custodian or trustee bank has the right to receive dividends paid with respect to, and proceeds from the sale of, such securities. The ultimate power to direct the receipt of dividends paid with respect to, and the proceeds from the sale of, such securities, is vested in the individual and institutional clients which Price Investment serves as an investment adviser. Any and all discretionary authority which has been delegated to Price Investment may be revoked in whole or in part at any time. Not more than 5% of the class of such securities is owned by any one client subject to the investment advice of Price Investment. With respect to securities owned by any one of the registered investment companies sponsored by Price Investment which it also serves as investment adviser (the "T. Rowe Price Funds"), only the custodian for each of such T. Rowe Price Funds has the right to receive dividends paid with respect to, and proceeds from the sale of, such securities. No other person is known to have such right, except that the shareholders of each such T. Rowe Price Fund participate proportionately in any dividends and distributions so paid.
- (5) The information is based on Schedules 13F-HR and 13F-HR/A filed with the SEC on February 13, 2023 and February 15, 2023, respectively (the "13F-HR Filings"), on behalf of Mario J. Gabelli and various entities which Mr. Gabelli directly or indirectly controls or for which he acts as chief investment officer including, but not limited to, Gabelli Funds, LLC, GAMCO Asset Management Inc., Gabelli & Company Investment Advisors, Inc., Teton Advisors, Inc., GGCP, Inc., GAMCO Investors, Inc., and Associated Capital Group, Inc. According to the 13F-HR Filings, Gabelli Funds, LLC, GAMCO Investors, Inc., Teton Advisors, Inc., and Gabelli & Company Investment Advisors, Inc. beneficially owned 665,083, 1,372,404, 62,000, and 69,003 shares, respectively.
- (6) The information is based on the Schedule 13G/A filed with the SEC on January 23, 2023 on behalf of Royce & Associates LP ("Royce Associates"). According to the filing, Royce Associates has sole investment discretion and sole voting authority over 1,444,240 shares.
- (7) The information is based on a Form 13G filed with the SEC on February 13, 2023 on behalf of Segall Bryant & Hamill, LLC. According to the filing, Segall Bryant & Hamill has sole investment discretion over 1,357,094 shares and sole voting authority over 1,026,012 shares.
- (8) The information is based on a Schedule 13G/A filed with the SEC on February 9, 2023 on behalf of The Vanguard Group. According to the filing, The Vanguard Group has sole investment discretion over 1,256,404 shares, shared investment discretion over 36,178 shares, and shared voting authority over 18,434 shares. The firm does not have the authority to vote 1,274,148 of the reported shares.
- (9) Mr. Buckhout terminated his employment with the Company on January 19, 2022 and information provided is as of that date.
- (10) Arthur L. George, Jr. joined the Board of Directors on January 26, 2022 and resigned on July 22, 2022, due to health reasons.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Director Independence

The Board, upon consideration of all relevant facts and circumstances and upon recommendation of the Nominating and Corporate Governance Committee, has affirmatively determined that each of Mr. Chapin, Ms. Donikowski, Mr. Lisman, Mr. Ludwig, Mr. O'Donnell and Ms. Smith is independent of the Company. In evaluating the independence of each director, the

Board applied the standards and guidelines set forth in the applicable Securities and Exchange Commission (“SEC”) and New York Stock Exchange (“NYSE”) regulations in determining that each director has no material relationship with the Company, directly or as a partner, stockholder or affiliate of an organization that has a relationship with the Company. The bases for the Board’s determination include, but are not limited to, the following:

- No director is an employee of the Company, or its subsidiaries or affiliates.
- No director has an immediate family member who is an officer of the Company or its subsidiaries or has any other current or past material relationship with the Company.
- No director receives, or in the past three years, has received, any compensation from the Company other than compensation for services as a director.
- No director has a family member who has received any compensation during the past three years from the Company.
- No director, during the past three years, has been affiliated with, or had an immediate family member who has been affiliated with, a present or former internal or external auditor of the Company.
- No executive officer of the Company serves on the compensation committee or the board of directors of any corporation that employs a director or a member of any director’s immediate family.
- No director is an officer or employee (or has an immediate family member who is an officer or employee) of an organization that sells products and services to, or receives products and services from, the Company in excess of the greater of \$1 million or 2% of such organization’s consolidated gross revenues in any fiscal year.

Related Party Transactions

The Company’s Board of Directors has adopted a Related Party Transactions Policy that requires that any proposed transaction involving the Company or a subsidiary of the Company in which a director or executive officer has direct economic or beneficial interest shall be reviewed and approved by the Audit Committee of the Board.

Since the beginning of Fiscal Year 2022, the Company was not a participant in any transaction in which the amount involved exceeded \$120,000 and in which an executive officer, director, director nominee or 5% stockholder (or their immediate family members) had a material direct or indirect interest, and no such person was indebted to the Company.

Item 14. Principal Accounting Fees and Services

The following table summarizes the fees we incurred for professional services provided by Ernst & Young, LLP for fiscal year 2022 and 2021, for audit, tax and other services:

Auditor Fees (\$ in Thousands)

Fiscal Year	2022	2021
Audit Fees ⁽¹⁾	\$ 5,800	\$ 6,400
Tax Fees ⁽²⁾	154	29
All Other Fees ⁽³⁾	8	8
Total	\$ 5,962	\$ 6,437

(1) For the professional services rendered for the audit of the Company’s annual financial statements, for review of the financial statements included in the Company’s quarterly reports on Form 10-Q, for conducting of the independent auditor’s obligations relative to attestation of internal controls under Section 404 of the Sarbanes-Oxley Act of 2002, and performing local statutory audits. The 2021 amount also includes incremental professional services rendered for the restatement of the Company’s financial statements as described within.

(2) The tax services performed in 2022 consisted of tax compliance and advisory services and tax services performed in 2021 consisted of tax compliance services.

(3) All other fees consisted of fees for an accounting research tool.

Audit Committee Pre-Approval

The Audit Committee’s policy is to pre-approve all audit and non-audit services provided by the independent auditors. These services may include audit services, audit-related services, tax services and other services. Pre-approval generally is provided for up to one year and any pre-approval is detailed as to the particular service or category of services and generally is subject to a specific budget. The Audit Committee has delegated pre-approval authority to its Chair when expediting of services is necessary. The independent auditors and management report annually to the Audit Committee regarding the extent of services provided by the independent auditors in accordance with this pre-approval, and the fees for the services performed.

Part IV

Item 15. Exhibits, Financial Statement Schedules

(a)(1) Financial Statements

Topic	Page Number
Report of Independent Registered Public Accounting Firm (PCAOB ID:42)	86
Consolidated Balance Sheets	90
Consolidated Statements of Operations	91
Consolidated Statements of Comprehensive Income (Loss)	92
Consolidated Statements of Cash Flows	93
Consolidated Statements of Shareholders' Equity	94
Notes to Consolidated Financial Statements	95

Report of Ernst & Young LLP (PCAOB ID: 42) dated March 15, 2023 on the Company's financial statements filed as a part hereof for the fiscal year ended December 31, 2022, and 2021 and on the Company's internal control over financial reporting as of December 31, 2022 is included in this Annual Report on Form 10-K. The independent registered public accounting firm's consent with respect to this report appears in Exhibit 23.1 of this Annual Report on Form 10-K.

(a)(2) Exhibits

Unless otherwise indicated, references to exhibits in the table below being incorporated by reference are made in each case with respect to filings of the Company, SEC File No. 001-14962.

Exhibit No.	Description and Location
2.1	Share Purchase Agreement, dated April 15, 2015, between the Company and affiliates and Schroedahl-ARAPP Spezialarmaturen GmbH & Co. KG and affiliates, incorporated herein by reference to Exhibit 2.1 to the Company's Form 8-K filed with the SEC on April 15, 2015
2.2	Agreement and Plan of Merger dated October 12, 2016 by and among the Company, Downstream Holding, LLC, Downstream Acquisition LLC, and Sun Downstream, LP., incorporated herein by reference to Exhibit 2.1 to the Company's Form 8-K filed with the SEC on October 14, 2016
2.3	Purchase Agreement, dated as of September 24, 2017, by and between Colfax Corporation and the Company, incorporated herein by reference to Exhibit 2.1 to the Company's Form 8-K filed with the SEC on September 25, 2017
2.4	Quota Purchase Agreement, dated as of July 13, 2019, as amended by Amendment No. 1 to the Quota Purchase Agreement, dated as of July 26, 2019, between CEP Holdings Sarl and P&P Flow Control AG, incorporated herein by reference to Exhibit 2.1 of the Company's Form 8-K, filed with the SEC on August 1, 2019
2.5	Asset Purchase Agreement, dated as of August 30, 2019, by and among Spence Engineering Company, Inc., Leslie Controls, Inc., Emerson Process Management Regulator Technologies, Inc. and the Company (for certain enumerated provisions), incorporated herein by reference to Exhibit 2.1 of the Company's Form 8-K, filed with the SEC on September 6, 2019
2.6	Amended and Restated Securities Purchase Agreement, dated as of January 31, 2020, by and among CIRCOR Dovianus Holdings B.V., CIRCOR Aerospace, Inc., the Company and Crane Co., incorporated herein by reference to Exhibit 2.1 of the Company's Form 8-K, filed with the SEC on February 5, 2020
2.7	Securities Purchase Agreement, dated as of June 5, 2020, by and between CIRCOR Energy Products, LLC and Rheinsee 765. V V GmbH (Renamed into "MS Valves GmbH"), incorporated herein by reference to Exhibit 2.1 to the Company's Form 8-K, filed with the SEC on June 23, 2020
3.1	Amended and Restated Certificate of Incorporation of the Company, incorporated herein by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2020
3.2	Fourth Amended and Restated By-Laws, incorporated herein by reference to Exhibit 3.1 to the Company's Form 8-K, filed with the SEC on Sept 28, 2022
4.1**	Description of Securities Registered under Section 12 of the Exchange Act

- [10.1](#) Credit Agreement, dated as of December 11, 2017, by and among the Company, as borrower, certain subsidiaries of the Company, as guarantors, the lenders from time to time party thereto, Deutsche Bank AG New York Branch, as term loan administrative agent and collateral agent, SunTrust Bank, as revolver administrative agent, swing line lender and a letter of credit issuer, Deutsche Bank Securities Inc. and SunTrust Robinson Humphrey, Inc., as joint-lead arrangers and joint-bookrunners, and Citizens Bank, N.A. and HSBC Securities (USA) Inc. as co-managers incorporated herein by reference to Exhibit 10.2 to the Company's Form 8-K, filed with the SEC on December 12, 2017
- [10.2](#) Amendment No. 2. to the Credit Agreement, dated as of February 19, 2020, by and among the Company, certain domestic subsidiaries of the Company, as guarantors, the lenders party thereto, Deutsche Bank AG New York Branch, as term loan administrative agent and as collateral agent and Trust Bank (formerly known as SunTrust Bank), as revolver administrative agent, incorporated herein by reference to Exhibit 10.56 to the Company's Form 10-K, filed with the SEC on March 31, 2020
- [10.3](#) Amendment No. 3 to the Credit Agreement, dated as of February 26, 2020, by and among the Company, certain domestic subsidiaries of the Company, as guarantors, the lenders party thereto, Deutsche Bank AG New York Branch, as term loan administrative agent and as collateral agent and Trust Bank (formerly known as SunTrust Bank), as revolver administrative agent, incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on February 28, 2020
- [10.4](#) Amendment No. 4 to the Credit Agreement, dated as of May 18, 2020, by and among the Company, Inc., certain domestic subsidiaries of the Company, as guarantors, the lenders party thereto, Deutsche Bank AG New York Branch, as term loan administrative agent and as collateral agent and Truist Bank (formerly known as SunTrust Bank), as revolver administrative agent, incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on May 22, 2020
- [10.9§](#) CIRCOR International, Inc. Amended and Restated Management Stock Purchase Plan dated as of January 1, 2017, incorporated herein by reference to Exhibit 10.8 to the Company's Form 10-K, filed with the SEC on March 1, 2018
- [10.10§](#) Form of Indemnification Agreement entered into by the Company and its directors and certain of its officers incorporated herein by reference to Exhibit 10.12 to the Company's Form 10-K, filed with the SEC on March 12, 2003
- [10.12§](#) Severance Agreement, dated as of April 9, 2013, between the Company and Scott A Buckhout, incorporated herein by reference to Exhibit 10.4 to the Company's Form 8-K, filed with the SEC on April 15, 2013
- [10.13§](#) CIRCOR International, Inc. 2014 Stock Option and Incentive Plan (the "2014 Stock Option and Incentive Plan") incorporated herein by reference to Exhibit A to the Company's Definitive Proxy Statement, filed with the SEC on March 21, 2014
- [10.14§](#) First Amendment to 2014 Stock Option and Incentive Plan, dated February 12, 2014, incorporated herein by reference to Exhibit 10.36 to the Company's Form 10-K, filed with the SEC on February 18, 2015
- [10.15§](#) Form of Non-Qualified Stock Option Agreement for Employees under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.34 of the Company's Form 10-K, filed with the SEC on February 21, 2017
- [10.16§](#) Form of Restricted Stock Unit Agreement for Employees under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.35 of the Company's Form 10-K, filed with the SEC on February 21, 2017
- [10.17§](#) Form of Performance-Based Restricted Stock Unit Agreement for Employees under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.1 of the Company's Form 10-Q, filed with the SEC on May 14, 2019
- [10.18§](#) Form of Management Stock Purchase Plan Restricted Stock Unit Agreement for Employees and Directors under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.2 of the Company's Form 10-Q, filed with the SEC on May 14, 2019
- [10.19§](#) Form of Non-Qualified Stock Option Agreement for Employees under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.3 of the Company's Form 10-Q, filed with the SEC on May 14, 2019
- [10.20§](#) Form of Restricted Stock Unit Agreement for Employees under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.4 of the Company's Form 10-Q, filed with the SEC on May 14, 2019
- [10.21§](#) Form of Restricted Stock Unit Agreement for Directors under the 2014 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.5 of the Company's Form 10-Q, filed with the SEC on May 14, 2019
- [10.22§](#) CIRCOR International, Inc. 2019 Stock Option and Incentive Plan (the "2019 Stock Option and Incentive Plan"), incorporated herein by reference to Exhibit 99.1 to the Company's Form 8-K, filed with the SEC on May 14, 2019
- [10.23§](#) Form of Performance-Based Restricted Stock Unit Agreement for Employees under the 2019 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.1 of the Company's Form 10-Q, filed with the SEC on August 1, 2019

<u>10.24§</u>	Form of Updated Performance-Based Restricted Stock Unit Agreement under the 2019 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.8 to the Company's Form 10-Q, filed with the SEC on June 1, 2020
<u>10.25§</u>	Form of 2020 Special One Year Restricted Stock Unit Agreement under the 2019 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.9 to the Company's Form 10-Q, filed with the SEC on June 1, 2020
<u>10.26§</u>	Form of Restricted Stock Unit Agreement for Employees under the 2019 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.10 to the Company's Form 10-Q, filed with the SEC on June 1, 2020
<u>10.27§</u>	Form of Restricted Stock Unit Agreement for Directors under the 2019 Stock Option and Incentive Plan, incorporated herein by reference to Exhibit 10.11 to the Company's Form 10-Q, filed with the SEC on June 1, 2020
<u>10.28§</u>	First Amendment to the Amended and Restated Management Stock Purchase Plan, incorporated herein by reference to Exhibit 10.2 of the Company's Form 10-Q, filed with the SEC on November 13, 2019
<u>10.29§</u>	Offer Letter, dated March 28, 2020, between the Company and Abhishek Khandelwal, incorporated herein by reference to Exhibit 10.4 to the Company's Form 10-Q, filed with the SEC on June 1, 2020
<u>10.30§</u>	Form of Inducement Restricted Stock Unit Agreement between the Company and Abhishek Khandelwal, incorporated herein by reference to Exhibit 99.1 to the Company's Registration Statement on Form S-8, File No. 333-237554, filed with the SEC on April 2, 2020
<u>10.31§</u>	Form of Amended and Restated Executive Change in Control Agreement, incorporated herein by reference to Exhibit 10.5 to the Company's Form 10-Q, filed with the SEC on August 7, 2020
<u>10.32§</u>	Form of Severance Agreement between the Company and each of its executive officers other than Scott A. Buckhout, incorporated herein by reference to Exhibit 10.32 to the Company's 2020 Form 10-K, filed with the SEC on March 15, 2021
<u>10.33§</u>	Form of Restrictive Covenants Agreement between the Company and each of its executive officers, incorporated herein by reference to Exhibit 10.33 to the Company's 2020 Form 10-K, filed with the SEC on March 15, 2021
<u>10.34</u>	Credit Agreement, dated as of December 20, 2021, by and among the Company, as borrower, certain subsidiaries of the Company, as guarantors, the lenders from time to time party thereto, Truist Bank, as administrative agent, collateral agent, swing line lender and a letter of credit issuer, and Truist Securities, Inc., Citizen Bank, N.A. and Keybank Capital Markets Inc. as joint lead arrangers and joint bookrunners incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on December 22, 2022
<u>10.35§</u>	Separation Agreement and Release, dated July 5, 2021, between the Company and Sumit Mehrotra, incorporated herein by reference to Exhibit 10.35 to the Company's 2021 Form 10-K, filed with the SEC on July 26, 2022
<u>10.36§</u>	Executive Retention Agreement, dated January 14, 2022, between the Company and AJ Sharma incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on January 19, 2022.
<u>10.37§</u>	Executive Retention Agreement, dated January 14, 2022, between the Company and Jessica W. Wenzell, incorporated herein by reference to Exhibit 10.37 to the Company's 2021 Form 10-K, filed with the SEC on July 26, 2022
<u>10.38§</u>	Agreement and Release, dated January 19, 2022 between the Company and Scott A. Buckhout, incorporated herein by reference to Exhibit 10.38 to the Company's 2021 Form 10-K, filed with the SEC on July 26, 2022
<u>10.39</u>	Letter from PricewaterhouseCoopers LLP to the SEC, dated June 5, 2020, incorporated herein by reference to Exhibit 16.1 to the Company's Form 8-K, filed with the SEC on June 5, 2020
<u>10.40§</u>	CIRCOR International, Inc. 2019 Stock Option and Incentive Plan, as amended, incorporated herein by reference to Exhibit 99.1 to the Company's Form 8-K, filed with the SEC on May 28, 2021
<u>10.41</u>	Amendment No. 1 to Credit Agreement, dated as of April 8, 2022, by and among CIRCOR International, Inc., as borrower, the other credit parties party thereto, each lender and letter of credit issuer from time to time party thereto and Truist Bank, as administrative agent and collateral agent, incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on April 13, 2022
<u>10.42</u>	Amendment No. 2 to Credit Agreement, incorporated herein by reference to Exhibit 10.1 to the Company's Form 8-K, filed with the SEC on May 31, 2022
<u>21**</u>	Schedule of Subsidiaries of CIRCOR International, Inc.
<u>23.1**</u>	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm
<u>31.1**</u>	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>31.2**</u>	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>32**</u>	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

- 101 The following financial statements from CIRCOR International, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2022, as filed with the SEC on March 15, 2023, formatted in XBRL (eXtensible Business Reporting Language), as follows:
- (i) Consolidated Balance Sheets as of December 31, 2022 and 2021
 - (ii) Consolidated Statements of Operations for the years ended December 31, 2022, 2021, and 2020
 - (iii) Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2022, 2021, and 2020
 - (iv) Consolidated Statements of Cash Flows for the years ended December 31, 2022, 2021, and 2020
 - (v) Consolidated Statements of Shareholders' Equity for the years ended December 31, 2022, 2021, and 2020
 - (vi) Notes to the Consolidated Financial Statements

* The Company hereby agrees to provide the Commission, upon request, copies of any omitted exhibits or schedules to this exhibit required by Item 601(b)(2) of Regulation S-K.

** Filed with this report.

*** Furnished with this report.

§ Indicates management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CIRCOR INTERNATIONAL, INC.

By: /s/ Tony Najjar
Tony Najjar
President and Chief Executive Officer

Date: March 15, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Tony Najjar</u> Tony Najjar	President and Chief Executive Officer (Principal Executive Officer)	March 15, 2023
<u>/s/ Arjun Sharma</u> Arjun Sharma	Chief Financial Officer and Senior Vice President, Business Development (Principal Financial Officer)	March 15, 2023
<u>/s/ Joseph C. Losak, II</u> Joseph C. Losak, II	Vice President and Corporate Controller (Principal Accounting Officer)	March 15, 2023
<u>/s/ Helmuth Ludwig</u> Helmuth Ludwig	Chair of the Board of Directors	March 15, 2023
<u>/s/ Samuel R. Chapin</u> Samuel R. Chapin	Director	March 15, 2023
<u>/s/ Tina M. Donikowski</u> Tina M. Donikowski	Director	March 15, 2023
<u>/s/ Bruce M. Lisman</u> Bruce M. Lisman	Director	March 15, 2023
<u>/s/ John A. O'Donnell</u> John A. O'Donnell	Director	March 15, 2023
<u>/s/ Jill D. Smith</u> Jill D. Smith	Director	March 15, 2023

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of CIRCOR International, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of CIRCOR International, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), cash flows and shareholders' equity for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated March 15, 2023, expressed an adverse opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the account or disclosure to which it relates.

Goodwill Impairment Assessment for the Industrial Reporting Unit

Description of the Matter

As discussed in Note 9 to the consolidated financial statements, the Company's consolidated goodwill balance was \$119.8 million as of December 31, 2022. The goodwill associated with the Industrial reporting unit amounted to \$62.5 million as of December 31, 2022. Management performs an impairment assessment at the reporting unit level on an annual basis as of the Company's October month end or more frequently if circumstances warrant. In completing its annual goodwill impairment assessment, the Company measures the fair value of the Industrial reporting unit using an income approach based on the present value of future cash flows. The Company corroborated the valuations that arose from the discounted cash flow approach by performing both a market multiple valuation and by reconciling the aggregate fair value of its reporting units to its market capitalization at the time of the assessment. The fair value of each reporting unit was compared to the respective carrying value as of the date of the assessment.

Auditing management's goodwill impairment assessment for the Industrial reporting unit was complex and judgmental due to the significant estimation required in determining the fair value of the reporting unit. In particular, the fair value estimates were sensitive to significant assumptions such as the rate of revenue growth and the discount rate which contemplate business, market and overall economic conditions

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process to complete its goodwill impairment assessment. Our procedures included testing management's controls over the review of the Industrial reporting unit's valuation model, including review of the significant assumptions discussed above.

To test the estimated fair value of the Company's Industrial reporting unit, with the support of our valuation specialists, we performed audit procedures that included, among others, assessing the valuation methodologies used by the Company and testing the significant assumptions and the completeness and accuracy of underlying data used by management in its assessment. We compared the rate of revenue growth to management's internal projections and historical results, current and forecasted industry and economic trends, analyst reports, and forecasted peer company information. With the assistance of our valuation specialists, we evaluated the selection of the discount rate by developing a range of independent estimates and comparing those to the rate selected by management. We also involved our valuation specialists to evaluate the market approach, including evaluating the reasonableness of the selected comparable publicly traded companies and the resulting market multiples calculation. In addition, we assessed the historical accuracy of management's estimates and performed sensitivity analyses over the significant assumptions to evaluate the changes in the fair value of the reporting unit that would result from changes in the assumptions. We tested management's reconciliation of the fair value of the reporting units to the market capitalization of the Company.

We have served as the Company's auditor since 2020.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 15, 2023

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of CIRCOR International, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited CIRCOR International Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the 2013 framework) (the COSO criteria). In our opinion, because of the effect of the material weaknesses described below on the achievement of the objectives of the control criteria, CIRCOR International, Inc. (the Company) has not maintained effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment. Management has identified three material weaknesses related to the Company's financial statement close process and a material weakness related to information technology general controls and automated controls for significant IT applications and manual controls dependent upon the information derived from the impacted IT applications.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), cash flows and shareholders' equity for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "consolidated financial statements"). These material weaknesses were considered in determining the nature, timing and extent of audit tests applied in our audit of the 2022 consolidated financial statements, and this report does not affect our report dated March 15, 2023, which expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 15, 2023

CIRCOR INTERNATIONAL, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	December 31,	
	2022	2021
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 64,275	\$ 59,924
Trade accounts receivable, net	109,754	100,149
Inventories	139,786	123,343
Prepaid expenses and other current assets	117,766	110,749
Total Current Assets	431,581	394,165
PROPERTY, PLANT AND EQUIPMENT, NET	141,141	154,461
OTHER ASSETS:		
Goodwill	119,847	122,906
Intangibles, net	256,338	303,476
Deferred income taxes	512	756
Lease right-of-use assets, net	42,491	21,139
Other assets	20,777	22,395
TOTAL ASSETS	\$ 1,012,687	\$ 1,019,298
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	\$ 78,778	\$ 83,382
Accrued expenses and other current liabilities	84,510	81,998
Accrued compensation and benefits	30,817	26,551
Short-term borrowings and current portion of long-term debt	—	1,611
Total Current Liabilities	194,105	193,542
Long-term debt	496,534	511,694
Deferred income taxes	18,238	21,721
Pension liability, net	85,968	120,881
Long-term lease liabilities	38,480	17,715
OTHER NON-CURRENT LIABILITIES	20,316	20,029
COMMITMENTS AND CONTINGENCIES (Note 16 and 17)		
SHAREHOLDERS' EQUITY:		
Preferred stock, \$0.01 par value; 1,000,000 shares authorized; — shares issued and outstanding	—	—
Common stock, \$0.01 par value; 29,000,000 shares authorized; 21,736,911 and 21,633,131 shares issued at December 31, 2022 and 2021, respectively	218	217
Additional paid-in capital	456,102	454,852
Accumulated deficit	(178,693)	(198,081)
Common treasury stock, at cost (1,372,488 shares at December 31, 2022 and 2021)	(74,472)	(74,472)
Accumulated other comprehensive loss	(44,109)	(48,800)
Total Shareholders' Equity	159,046	133,716
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$ 1,012,687	\$ 1,019,298

The accompanying notes are an integral part of these consolidated financial statements.

CIRCOR INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Net revenues	\$ 786,919	\$ 758,667	\$ 765,219
Cost of revenues	529,832	528,291	533,005
Gross profit	257,087	230,376	232,214
Selling, general and administrative expenses	213,294	224,927	223,386
Goodwill impairment charges	—	10,500	138,078
Special and restructuring (recoveries) charges, net	(19,013)	24,272	(34,303)
Operating income (loss)	62,806	(29,323)	(94,947)
Other expense (income):			
Interest expense, net	44,886	32,365	34,219
Other income, net	(5,747)	(3,826)	(1,594)
Total other expense, net	39,139	28,539	32,625
Income (loss) from continuing operations before income taxes	23,667	(57,862)	(127,572)
Provision for income taxes	4,279	5,182	55,902
Income (loss) from continuing operations, net of tax	19,388	(63,044)	(183,474)
Income (loss) from discontinued operations, net of tax	—	1,406	(35,140)
Net Income (loss)	\$ 19,388	\$ (61,638)	\$ (218,614)
Basic Income (loss) income per common share:			
Basic from continuing operations	\$ 0.95	\$ (3.12)	\$ (9.18)
Basic from discontinued operations	\$ —	\$ 0.07	\$ (1.76)
Net Income (loss)	\$ 0.95	\$ (3.05)	\$ (10.94)
Diluted Income (loss) income per common share:			
Diluted from continuing operations	\$ 0.95	\$ (3.12)	\$ (9.18)
Diluted from discontinued operations	\$ —	\$ 0.07	\$ (1.76)
Net Income (loss)	\$ 0.95	\$ (3.05)	\$ (10.94)
Weighted average common shares outstanding:			
Basic	20,350	20,201	19,982
Diluted	20,427	20,201	19,982

The accompanying notes are an integral part of these consolidated financial statements.

CIRCOR INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Net Income (loss)	\$ 19,388	\$ (61,638)	\$ (218,614)
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(12,455)	(4,372)	4,466
Interest rate swap adjustments (1)	(688)	6,398	1,196
Other net changes in post-retirement liabilities and assets - recognized actuarial gains (loss) (2)	17,834	38,303	(13,846)
Other comprehensive income (loss), net of tax	4,691	40,329	(8,184)
COMPREHENSIVE INCOME (LOSS)	\$ 24,079	\$ (21,309)	\$ (226,798)

(1) Net of an income tax effect of \$(2.5) million, \$0.0 million, and \$0.5 million for the years ended December 31, 2022, 2021 and 2020, respectively.

(2) Net of an income tax effect of \$0.0 million, \$0.0 million, and \$0.0 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

CIRCOR INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
OPERATING ACTIVITIES			
Net Income (loss)	\$ 19,388	\$ (61,638)	\$ (218,614)
Income (loss) from discontinued operations, net of income taxes	—	1,406	(35,140)
Income (Loss) from continuing operations, net of tax	19,388	(63,044)	(183,474)
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:			
Depreciation	19,691	22,854	20,401
Amortization	36,360	42,304	43,662
Change in provision for bad debt expense	(813)	1,213	6,274
Write down of inventory	2,606	3,364	4,272
Compensation expense of share-based plans	1,880	5,252	5,488
Loss on debt extinguishment	4,977	8,693	—
Amortization of debt issuance costs	3,645	3,996	7,460
Deferred income tax (benefit) provision	(3,709)	(2,992)	46,774
Goodwill impairment charges	—	10,500	138,078
Other impairment charges	8,011	—	—
Loss (gain) on sale of businesses	—	1,919	(54,429)
Gain on sale of real estate	(47,977)	—	—
Loss on deconsolidation charges	4,675	—	—
Changes in operating assets and liabilities, net of effects of acquisitions and divestitures:			
Trade accounts receivable	(9,649)	(6,308)	26,211
Inventories	(26,299)	(6,974)	4,366
Prepaid expenses and other assets	(22,218)	(23,665)	(29,255)
Accounts payable, accrued expenses and other liabilities	8,611	15,820	(43,748)
Net cash (used in) provided by continuing operations	(821)	12,932	(7,920)
Net cash used in discontinued operations	—	(2,484)	(14,561)
Net cash (used in) provided by operating activities	(821)	10,448	(22,481)
INVESTING ACTIVITIES			
Additions of property, plant and equipment	(21,988)	(14,747)	(12,222)
Proceeds from the sale of property, plant and equipment	104	2	(322)
Proceeds from beneficial interest of factored receivables	4,484	2,047	2,957
Proceeds from sale of real estate	54,945	—	—
Proceeds from sale of business	—	9,993	165,540
Net cash provided by (used in) continuing investing activities	37,545	(2,705)	155,953
Net cash used in discontinued investing activities	—	—	(11,658)
Net cash provided by (used in) investing activities	37,545	(2,705)	144,295
FINANCING ACTIVITIES			
Proceeds from long-term debt	219,266	734,612	219,000
Payments of long-term debt	(227,041)	(729,551)	(352,916)
Net change in short-term borrowings	(1,573)	(374)	372
Equipment financing	894	—	—
Proceeds from the exercise of stock options	—	151	118
Withholding tax payments on net share settlements on equity rewards	(1,311)	(4,209)	(713)
Payment of debt issuance costs	(16,701)	(12,157)	—
Net cash used in financing activities	(26,466)	(11,528)	(134,139)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(4,908)	(3,448)	3,878
INCREASE (DECREASE) IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	5,350	(7,233)	(8,447)
Cash, cash equivalents and restricted cash at beginning of year	61,374	68,607	77,054
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH AT END OF YEAR	\$ 66,724	\$ 61,374	\$ 68,607
Supplemental Disclosure of Cash Flow Information:			
Cash paid for income taxes	\$ 8,622	\$ 7,264	\$ 11,085
Cash paid for interest	\$ 42,795	\$ 31,430	\$ 33,993

The accompanying notes are an integral part of these consolidated financial statements.

CIRCOR INTERNATIONAL, INC.
CONSOLIDATED STATEMENT OF SHAREHOLDERS' EQUITY
(in thousands)

	Common Stock		Additional Paid-in Capital	Retained Earnings (Accumulated deficit)	Accumulated Other Comprehensive (Loss) Income	Treasury Stock	Total Shareholders' Equity
	Shares	Amount					
BALANCE AT DECEMBER 31, 2019	19,912	\$ 213	\$ 446,657	\$ 82,414	\$ (80,945)	\$ (74,472)	\$ 373,867
Net income (loss)	—	—	—	(218,614)	—	—	(218,614)
Cumulative effect adjustment related to adoption of ASC (326)	—	—	—	(222)	—	—	(222)
Other comprehensive income (loss), net of tax	—	—	—	—	(8,184)	—	(8,184)
Stock options exercised	3	—	118	—	—	—	118
Conversion of restricted stock units	86	1	239	—	—	—	240
Share-based plan compensation	—	—	5,714	—	—	—	5,714
BALANCE AT DECEMBER 31, 2020	20,001	\$ 214	\$ 452,728	\$ (136,423)	\$ (89,129)	\$ (74,472)	\$ 152,919
Net income (loss)	—	—	—	(61,638)	—	—	(61,638)
Other comprehensive income (loss), net of tax	—	—	—	—	40,329	—	40,329
Other	—	—	—	(21)	—	—	(21)
Stock options exercised	5	—	151	—	—	—	151
Conversion of restricted stock units	255	3	(3,279)	—	—	—	(3,276)
Share-based plan compensation	—	—	5,252	—	—	—	5,252
BALANCE AT DECEMBER 31, 2021	20,261	\$ 217	\$ 454,852	\$ (198,081)	\$ (48,800)	\$ (74,472)	\$ 133,716
Net income (loss)	—	—	\$ —	19,388	—	—	19,388
Other comprehensive income (loss), net of tax	—	—	—	—	4,691	—	4,691
Stock options exercised	—	—	—	—	—	—	—
Conversion of restricted stock units	103	1	(630)	—	—	—	(629)
Share-based plan compensation	—	—	1,880	—	—	—	1,880
BALANCE AT DECEMBER 31, 2022	20,364	\$ 218	\$ 456,102	\$ (178,693)	\$ (44,109)	\$ (74,472)	\$ 159,046

The accompanying notes are an integral part of these consolidated financial statements.

CIRCOR INTERNATIONAL, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Description of Business

CIRCOR International, Inc. (“CIRCOR” or the “Company”) designs, manufactures and distributes a broad array of flow and motion control products and certain services to a variety of end-markets for use in a wide range of applications to optimize the efficiency and/or ensure the safety of flow control systems. CIRCOR has a global presence and operates major manufacturing facilities in North America, Western Europe, Morocco, India and China.

As of December 31, 2022, the Company organized its business segment reporting structure into two segments: CIRCOR Aerospace & Defense (“Aerospace & Defense”) and CIRCOR Industrial (“Industrial”). Refer to Note 18, Business Segment and Geographical Information, for further information about the segments.

In January 2020, the Company completed the sale of the non-core Instrumentation and Sampling (“I&S”) business to Crane Co. for \$169.1 million in cash, net of working capital adjustments. The I&S business manufactured fittings, regulators, sampling systems and valves. The disposal group did not meet the criteria to be classified as a discontinued operation.

As of March 29, 2020, the Company experienced a significant decline in its market capitalization below its consolidated book value. As a result, management concluded that there was a goodwill and an indefinite-lived intangible asset impairment triggering event for the Company in the first quarter of 2020. Through its impairment analysis, the Company determined that goodwill in its Industrial segment was impaired and recognized a \$138.1 million impairment. See Note 9, Goodwill and Other Intangibles Assets, for additional information on the goodwill impairment.

In June 2020, the Company completed the disposition of its Distributed Valves (“DV”) business at a cost of \$10.8 million inclusive of working capital adjustments, while also retaining certain liabilities related to the business. The DV business was a long-cycle upstream oil and gas engineered valve business. This disposal group met the criteria to be classified as held for sale and a discontinued operation, and was recorded as such within the comparative consolidated financial statements for the year ended December 31, 2019. For more information on the discontinued operations and held for sale transactions, see Note 3, Discontinued Operations.

In December 2021, the Company refinanced its term loan and revolving line of credit facility. See Note 12, Financing Arrangements for additional information on the refinancing.

In the fourth quarter of 2021, the Company recorded a goodwill impairment charge in the amount of \$10.5 million as a result of the Company’s annual impairment assessment. See Note 9, Goodwill and Other Intangibles Assets, for additional information on the goodwill impairment.

Throughout this Annual Report on Form 10-K, unless otherwise indicated, amounts and activity are presented on a continuing operations basis.

As described in its Current Report on Form 8-K filed with the Securities and Exchange Commission (“SEC”) on March 14, 2022, the Company announced that it had discovered accounting irregularities in its Pipeline Engineering business unit, and that the Audit Committee engaged external advisors to conduct a review into the irregularities.

As further described in the Explanatory Note in its 2021 Annual Report and Note 2 and Note 23 in Item 8 of the 2021 Annual Report, the discovery of accounting irregularities and investigation in its Pipeline Engineering business unit resulted in the Company restating its financial statements for prior periods. The restatement of prior period financial statements included the annual periods of 2020 and 2019, interim and year to date periods for 2020 and interim and year to date periods for the nine months ended October 3, 2021.

On April 14, 2022, the Company placed the Catterick, UK entity of the Pipeline Engineering business into Administration under the U.K. Insolvency Act of 1986 and the Insolvency (England and Wales) Rules 2016 (IR 2016). The loss of control triggered deconsolidation which effect is described in Note 5 Special and Restructuring (Recoveries) Charges, Net.

COVID-19

The COVID-19 pandemic continues to impact the global economy, resulting in rapidly changing market and economic conditions. The effects of the COVID-19 pandemic continue to negatively impact the Company’s results of operations, cash flows and financial position. The Company’s consolidated financial statements presented herein reflect management’s estimates and assumptions regarding the effects of COVID-19 as of the date of the consolidated financial statements.

(2) Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). The consolidated financial statements include the accounts of CIRCOR and its subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation. The results of companies acquired or divested are included in the consolidated financial statements from the date of acquisition or up to the date of disposal.

Use of Estimates

The preparation of these financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying disclosures. Some of the more significant estimates, some of which are impacted by management's estimates and assumptions regarding the effects of the COVID-19 pandemic, relate to recoverability of goodwill and indefinite-lived trade names, estimated total costs for ongoing long-term revenue contracts where transfer of control occurs over time, allowance for credit losses, inventory valuation, share-based compensation, amortization and impairment of long-lived assets, income taxes (including valuation allowance), fair value of disposal group, pension benefit obligations, penalty accruals for late shipments, asset valuations, and product warranties. While management believes that the estimates and assumptions used in the preparation of the financial statements are appropriate, actual results could differ materially from those estimates.

Revenue Recognition

The Company recognizes revenue to depict the transfer of control to the Company's customers in an amount reflecting what the Company expects to be entitled to in exchange for performance obligations. In order to apply this revenue recognition principle, the Company applies the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when, or as, a performance obligation is satisfied. See Note 4, Revenue Recognition for further information.

Revenues relating to point in time contracts are recognized when the customer obtains control of the product, which is generally at the time of shipping. Revenues and costs on certain long-term contracts are recognized on the percentage-of-completion method measured on the basis of costs incurred to estimated total costs for each contract. This method is used because management considers it to be the best available measure of progress towards completion on these contracts. Revenues and costs on contracts are subject to changes in estimates throughout the duration of the contracts, and any required adjustments are made in the period in which a change in estimate becomes known. Unbilled receivables for net revenues recognized in excess of the amounts billed for active projects are recognized as contract assets on the balance sheet.

The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. Shipping and handling costs invoiced to customers are recorded as components of revenues and the associated costs are recorded as cost of revenues. The Company recognizes revenue net of sales returns, rebates, penalties, and discounts. Accounts receivable allowances include sales returns and the allowance for credit losses. The Company monitors and tracks the amount of product returns and reduces revenue at the time of shipment for the estimated amount of such future returns, based on historical experience.

Allowance for Credit Losses

The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses or doubtful accounts based upon expected losses, its historical experience, expectation of changes in risk of loss and any specific customer collection issues that it has identified. Account balances are charged off against the allowance when the Company believes it is probable the receivable will not be recovered.

The following table presents changes in the accounts receivables allowance for doubtful accounts for the years ended December 31 (in thousands):

Description	Balance at Beginning of Period	Additions (Reductions)		Deductions (1)	Balance at End of Period
		Charged to Costs and Expenses	Charged to Other Accounts		
Year ended					
December 31, 2022					
Deducted from asset account:					
Allowance for doubtful accounts	\$ 10,781	\$ (813)	\$ (881)	\$ (832)	\$ 8,255
Year ended					
December 31, 2021					
Deducted from asset account:					
Allowance for doubtful accounts	\$ 10,596	\$ 1,213	\$ (608)	\$ (420)	\$ 10,781
Year ended					
December 31, 2020					
Deducted from asset account:					
Allowance for doubtful accounts	\$ 3,948	\$ 6,274	\$ 999	\$ (625)	\$ 10,596
(1) Uncollectible accounts written off, net of recoveries.					

(1) Uncollectible accounts written off, net of recoveries.

During 2021 the Company recorded a charge for allowance against contract assets of \$4.4 million which is also the ending balance of allowance against contract assets as of December 31, 2021.

Goodwill

Goodwill is measured as the excess of the cost of acquisition over the sum of the amounts assigned to identifiable tangible and intangible assets acquired less liabilities assumed. The Company performs an impairment assessment for goodwill at the reporting unit level on an annual basis as of the end of its October month end or more frequently if circumstances warrant. Its annual impairment assessment requires a comparison of the fair value of each of its reporting units to the respective carrying value. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired. If the carrying value of a reporting unit is greater than its fair value, an impairment loss will be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. Additionally, the Company will consider the income tax effect from any tax-deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss.

Determining the fair value of a reporting unit is subjective and requires the use of significant estimates and assumptions. With the assistance of an independent third-party appraisal firm, the Company estimates the fair value of its reporting units using an income approach based on the present value of future cash flows. It believes this approach yields the most appropriate evidence of fair value. The Company also utilizes the comparable company multiples method and market transaction fair value method to validate the fair value estimate using the income approach. The key assumptions utilized in its discounted cash flow model includes estimates of the rate of revenue growth and the discount rate based on a weighted average cost of capital. Any unfavorable material changes to these key assumptions could potentially impact its fair value determinations.

For additional information, see Note 9, Goodwill and Other Intangible Assets.

Cost of Revenues

Cost of revenues primarily reflects the costs of manufacturing and preparing products for sale and, to a much lesser extent, the costs of performing services. Cost of revenues is primarily comprised of the cost of materials, outside processing, inbound freight, production, direct labor and overhead including indirect labor, which are expenses that directly result from the level of production activity at a manufacturing site. Additional expenses that directly result from the level of production activity at a manufacturing site include purchasing and receiving costs, inspection costs, warehousing costs, internal transfer costs, utility expenses, property taxes, amortization of inventory step-up from revaluation at the date of acquisition, depreciation of production building and equipment assets, warranty costs, salaries and benefits paid to plant manufacturing management and maintenance supplies.

Inventories

Inventories are stated at the lower of cost or net realizable value. Where appropriate, standard cost systems are utilized for purposes of determining cost; the standards are adjusted as necessary to ensure they approximate actual cost. Cost is generally determined on the first-in, first-out ("FIFO") basis. The Company typically analyzes its inventory aging and projected future usage on a quarterly basis to assess the adequacy of its inventory valuation reserve, which primarily consists of obsolescence and net realizable value estimates. These estimates are measured either on an item-by-item basis or higher-level inventory grouping and determined based on the difference between the cost of the inventory and estimated net realizable value. The provision for inventory valuation reserves is a component of the Company's cost of revenues. Assumptions about future demand are among the primary factors utilized to estimate net realizable value. At the point of the loss recognition, a new, lower-cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. Only subsequent inventory transactions via sale or disposal would then release the established inventory reserve.

If there were to be a sudden and significant decrease in demand for its products, significant price reductions, or a higher incidence of inventory obsolescence for any reason, including a change in technology or customer requirements, the Company could be required to increase its inventory valuation reserves, which could adversely affect its gross profits.

Legal Contingencies

The Company is currently involved in various legal claims and legal proceedings, some of which may involve substantial dollar amounts. Periodically, the Company reviews the status of each significant matter and assesses its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount can be estimated, it accrues a liability for the estimated loss. The determination of probability and the determination as to whether exposure can be reasonably estimated requires management estimates. Because of uncertainties related to these matters, accruals are based on the best information available at the time. As additional information becomes available, the Company reassesses the potential liability related to its pending claims and litigation and may revise its estimates. Such revisions in the estimates of the potential liabilities could have a material adverse effect on its business, results of operations and financial position.

For more information see Note 16, Contingencies, Commitments and Guarantees.

Indefinite-Lived Intangible Assets

Indefinite-lived intangible assets, such as trade names, are generally recorded and valued in connection with a business acquisition. For these assets, the Company performs a qualitative assessment on an annual basis to determine if it is more likely than not the asset is impaired ("Step 0" test). These assets are reviewed at least annually for impairment as of the October month end, or more frequently if facts and circumstances warrant. For any that fail the Step 0 test, the Company performs an impairment assessment at the asset level utilizing a fair value calculation. The Company has the option to bypass the qualitative assessment for an indefinite lived intangible asset in any period and proceed directly to the quantitative impairment test. Determining the fair value is subjective and requires the use of significant estimates and assumptions. With the assistance of an independent third-party appraisal firm, the Company estimates the fair value using the relief from royalty method. The significant assumptions that are used to determine the estimated fair value for indefinite-lived intangible assets are forecasted revenue growth rates, the assumed royalty rates and the market-participant discount rates.

For more information see Note 9, Goodwill and Other Intangible Assets.

Other Long-Lived Assets

In accordance with ASC Topic 360, Plant, Property, and Equipment, the Company performs impairment analyses of long-lived asset groups whenever events and circumstances indicate impairment. If indicators are present, it performs a recoverability test by comparing the sum of the undiscounted future cash flows specific to the asset group to its carrying value. If the recoverability test fails (sum of undiscounted cash flows are less than the asset group's carrying value), it then determines the fair value of the asset group and recognizes an impairment loss if the carrying value exceeds the estimated fair value.

For more information, see Note 8, Property, Plant and Equipment.

Post-Retirement Benefits

Pensions and other post-retirement benefit obligations and net periodic benefit costs are actuarially determined and are affected by several assumptions including the discount rate, mortality, and the expected long-term return on plan assets. Changes in assumptions and differences from actual results will affect the amounts of net periodic benefit cost recognized in future periods. These assumptions may also effect the amount and timing of future cash contributions.

As required in the recognition and disclosure provisions of ASC Topic 715, *Compensation - Retirement Benefits*, the Company recognizes the over-funded or under-funded status of defined benefit post-retirement plans in its balance sheet, measured as the difference between the fair value of plan assets and the benefit obligations (the projected benefit obligation for pension plans and the accumulated post-retirement benefit obligation for other post-retirement plans). The change in the funded status is the net of the recognized net periodic benefit cost, cash contributions to the trust/benefits paid directly by the Company and recognized changes in other comprehensive income. Other comprehensive income changes are due to new actuarial gains and losses, new plan amendments and the amortizations of amounts in the net periodic benefit cost.

Unrecognized actuarial gains and losses in excess of the 10% corridor (defined as the threshold above which gains or losses need to be amortized) are being recognized for all plans over the weighted average expected remaining service period of the employee group unless substantially all participants are inactive in which case the average remaining lifetime of covered participants is used. Unrecognized actuarial gains and losses arise from several factors including changes in the benefit obligations from actuarial experience and assumption changes, as well as the difference between expected returns and actual returns on plan assets.

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry-forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance is recognized if the Company anticipates that it is more likely than not that it may not realize some or all of a deferred tax asset.

In accordance with the provisions of ASC Topic 740, *Income Taxes*, the Company initially recognizes the financial statement effect of a tax position when, based solely on its technical merits, it is more likely than not (a likelihood of greater than fifty percent) that the position will be sustained upon examination by the relevant taxing authority. Those tax positions failing to qualify for initial recognition are recognized in the first interim period in which they meet the more likely than not standard, are resolved through negotiation or litigation with the taxing authority, or upon expiration of the statute of limitations. De-recognition of a tax position that was previously recognized occurs when an entity subsequently determines that a tax position no longer meets the more likely than not threshold of being sustained.

If future results of operations exceed the Company's current expectations, its existing tax valuation allowances may be adjusted, resulting in future tax benefits. Alternatively, if future results of operations are less than expected, future assessments may result in a determination that some or all of the deferred tax assets are not realizable. Consequently, the Company may need to establish additional tax valuation allowances for a portion or all of the gross deferred tax assets, which may have a material adverse effect on its results of operations.

Under ASC Topic 740, *Income Taxes*, only the portion of the liability that is expected to be paid within one year is classified as a current liability. As a result, liabilities expected to be resolved without the payment of cash (e.g., due to the expiration of the statute of limitations) or are not expected to be paid within one year are classified as non-current. It is the Company's policy to record estimated interest and penalties as income tax expense, and tax credits as a reduction in income tax expense.

With respect to global intangible low-taxed income ("GILTI"), the Company has adopted a policy to account for this provision as a period cost.

For additional information, see Note 10, Income Taxes.

Share-Based Compensation

Share-based compensation costs are based on the grant date fair value estimated in accordance with the provisions of ASC Topic 718, *Accounting for Share Based Payments*, and these costs are recognized over the requisite vesting period. The Black-Scholes option pricing model is used to estimate the fair value of each stock option at the date of grant. Black-Scholes utilizes assumptions related to volatility, the risk-free interest rate, the dividend yield and employee exercise behavior. Expected volatilities utilized in the model are based on the historic volatility of the Company's stock price. The risk-free interest rate is derived from the U.S. Treasury Yield curve in effect at the time of the grant. The model incorporates exercise and post-vesting service termination assumptions based on an analysis of historical data.

For additional information, see Note 13, Share-Based Compensation.

Assets Held for Sale

The Company classifies assets and liabilities (disposal groups) to be sold as held for sale in the period in which all of the following criteria are met: management, having the authority to approve the action, commits to a plan to sell the disposal group; the disposal group is available for immediate sale in its present condition subject to terms customary for sales of such disposal groups; an active program to locate a buyer and other actions required to complete the plan to sell the disposal group have been initiated; the sale of the disposal group is probable, and transfer of the disposal group is expected to qualify for recognition as a completed sale within one year; the disposal group is being actively marketed for sale at a price that is reasonable in relation to its current fair value; and actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

The Company initially measures a disposal group that is classified as held for sale at the lower of its carrying value or fair value less any costs to sell. Any loss resulting from this measurement is recognized in the period in which the held for sale criteria are met. Conversely, gains are not recognized on the sale of a disposal group until the date of sale. The Company assesses the fair value of a disposal group, less any costs to sell, each reporting period it remains classified as held for sale and reports any subsequent changes as an adjustment to the carrying value of the disposal group, as long as the new carrying value does not exceed the carrying value of the disposal group at the time it was initially classified as held for sale.

Upon determining that a disposal group meets the criteria to be classified as held for sale, the Company reports the assets and liabilities of the disposal group, if material, as separate line items on the consolidated statements of financial position.

Environmental Compliance and Remediation

Environmental expenditures that relate to current operations are expensed or capitalized as appropriate. Expenditures that relate to existing conditions caused by past operations, which do not contribute to current or future revenue generation, are expensed. Expenditures that meet the criteria of "Regulated Operations" are capitalized. Liabilities are recorded when environmental assessments and/or remedial efforts are probable and the costs can be reasonably estimated. In accordance with ASC Topic 450, Contingencies, estimated costs are based upon current laws and regulations, existing technology and the most probable method of remediation.

Foreign Currency and Foreign Currency Contracts

The Company's international subsidiaries operate and report their financial results using local functional currencies. Accordingly, all assets and liabilities of these operations are translated into United States ("U.S.") dollars using exchange rates in effect at the end of the relevant periods. Income statement accounts such as revenues and cost of revenues are translated at the average rate of exchange prevailing during the period. The resulting translation adjustments are presented as a separate component of accumulated other comprehensive loss. The Company does not provide for U.S. income taxes on foreign currency translation adjustments since it does not provide for such taxes on undistributed earnings of foreign subsidiaries.

The Company is exposed to certain risks relating to its ongoing business operations including foreign currency exchange rate risk. From time to time the Company uses derivative instruments to manage foreign currency risk on certain business transactions denominated in foreign currencies. To the extent the underlying transactions hedged are completed, these forward contracts do not subject the Company to significant risk from exchange rate movements because they offset gains and losses on the related foreign currency denominated transactions. These forward contracts do not qualify as hedging instruments and, therefore, do not qualify for fair value or cash flow hedge treatment. Any gains and losses on the forward contracts are recognized as a component of other expense in its consolidated statements of operations.

The Company is subject to exchange rate related gains or losses resulting from foreign currency denominated transactions. Its net foreign exchange (gains) / losses recorded for the years ended December 31, 2022, 2021, and 2020 were \$(2.2) million, \$0.9 million, and \$1.7 million, respectively and are included in other (income) expense in the consolidated statements of operations.

Earnings Per Common Share

Basic earnings per common share is calculated by dividing net income by the number of weighted average common shares outstanding. Diluted earnings per common share is calculated by dividing net income by the weighted average common shares outstanding and assumes the conversion of all dilutive securities when the effects of such conversion would not be anti-dilutive.

Earnings per common share and the weighted average number of shares used to compute net earnings per common share, basic and assuming full dilution, are reconciled below (in thousands, except per share data):

	Year Ended December 31,								
	2022			2021			2020		
	Net Income	Shares	Per Share Amount	Net (Loss)	Shares	Per Share Amount	Net (Loss)	Shares	Per Share Amount
Basic EPS	\$ 19,388	20,350	\$ 0.95	\$ (61,638)	20,201	\$ (3.05)	\$ (218,614)	19,982	\$ (10.94)
Dilutive securities, principally common stock awards	—	77	—	—	—	—	—	—	—
Diluted EPS	\$ 19,388	20,427	\$ 0.95	\$ (61,638)	20,201	\$ (3.05)	\$ (218,614)	19,982	\$ (10.94)

Certain stock options to purchase common shares and restricted stock units ("RSUs") were anti-dilutive. There were 43,515 anti-dilutive stock options, RSUs, and RSU MSPs for the year ended December 31, 2022 with exercise (grant) prices ranging from \$26.84 to \$60.99. There were 596,753 anti-dilutive stock options, RSUs and RSU MSPs for the year ended December 31, 2021 with exercise prices ranging from \$32.76 to \$60.99. There were 663,986 anti-dilutive stock options and RSUs for the year ended December 31, 2020 with exercise prices ranging from \$33.63 to \$71.56.

Cash and Cash Equivalents

The Company's cash equivalents are invested in time deposits of financial institutions, and it has established guidelines relative to credit ratings, diversification and maturities that are intended to maintain safety and liquidity. Cash equivalents include highly liquid investments with maturity periods of three months or less when purchased.

Restricted Cash

Restricted cash represents cash that is legally restricted as to withdrawal or usage and includes amounts required to be maintained in relation to bank guarantees in certain jurisdictions. Restricted cash is classified within prepaid expenses and other current assets on the consolidated balance sheets.

Other Assets

Other assets in the accompanying consolidated balance sheets include deferred debt issuance costs associated with the Company's revolving credit facility, tax receivable, non-current contract assets and other certain assets.

Fair Value

ASC Topic 820, *Fair Value Measurement*, defines fair value and includes a framework for measuring fair value and disclosing fair value measurements in financial statements. Fair value is a market-based measurement rather than an entity-specific measurement. The fair value hierarchy makes a distinction between assumptions developed based on market data obtained from independent sources (observable inputs) and the reporting entity's own assumptions (unobservable inputs). This hierarchy prioritizes the inputs into three broad levels as follows:

Level One: Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets.

Level Two: Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in inactive markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

Level Three: Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

Fair value information for those assets and liabilities, including their classification in the fair value hierarchy, is included in: Note 12, Financing Arrangements along with Derivative Financial Instruments, and Note 15, Retirement Plans (for assets held in trust).

Certain pension plan asset investments are measured at fair value using the net asset value per share (or its equivalent) practical expedient (the "NAV"). The carrying amounts of cash and cash equivalents, restricted cash, trade receivables and trade payables approximate fair value because of the short maturity of these financial instruments. Cash equivalents are carried at cost which approximates fair value at the balance sheet date and is a Level 1 financial instrument.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation is generally provided on a straight-line basis over the estimated useful lives of the assets, which typically range from 3 to 40 years for buildings and improvements, 1 to 10 years for manufacturing machinery and equipment, and 3 to 7 years for computer equipment and software. Motor vehicles and furniture and fixtures are typically depreciated over 5 years. Leasehold improvements are amortized on a straight-line basis over the shorter of the lease term or estimated useful life of the asset. Repairs and maintenance costs are expensed as incurred.

The Company reports depreciation of property, plant and equipment in cost of revenue and selling, general and administrative expenses based on the nature of the underlying assets. Depreciation primarily related to equipment used in the production of inventory is recorded in cost of revenues. Depreciation related to selling and administrative functions is reported in selling, general and administrative expenses.

See Note 8, Property, Plant and Equipment for additional information.

Research and Development

Research and development expenditures, including certain engineering costs, are expensed when incurred and are included in selling, general and administrative expenses. Research and development expenditures for the years ended December 31, 2022, 2021, and 2020 were \$7.7 million, \$7.6 million, and \$8.4 million, respectively.

Sale of Receivables

The Company has an active receivables purchasing agreement with a bank whereby the Company can sell selected account receivables and receive between 90% to 100% of the purchase price upfront, net of applicable discount fee, and the residual amount as the receivables are collected.

During 2022, the Company sold a total of \$46.6 million in receivables under the program, receiving \$46.2 million in cash of which \$0.9 million related to prior year. The outstanding purchase price component of \$1.1 million was recorded in prepaid expenses and other current assets on the consolidated balance sheet at December 31, 2022. During 2021, the Company sold a total of \$38.1 million in receivables under the program, receiving \$38.0 million in cash of which \$0.8 million related to prior year. The outstanding purchase price component of \$0.9 million was recorded in prepaid expenses and other current assets on the consolidated balance sheet at December 31, 2021.

New Accounting Standards

Changes to U.S.GAAP are typically established by the Financial Accounting Standards Board ("FASB") in the form of Accounting Standards Updates (ASUs") to the FASB's Accounting Standards Codification ("ASC"). The Company considers the applicability and impact of all ASUs, and based on its assessment, determined that any recently issued or proposed ASUs not listed below are either not applicable to the Company or adoption will have minimal impact on its consolidated financial statements.

Recently Adopted Accounting Standards

In March 2020, the FASB issued Accounting Standards Update ("ASU") 2020-04, Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting. This guidance contains optional expedients and exceptions for applying GAAP to contract modifications, hedging relationships, and other areas or transactions that are impacted by reference rate reform (i.e., by the transition of LIBOR and other interbank offered rates to alternative reference interest rates). The new standard was effective upon issuance and generally can be applied to applicable contract modifications through December 31, 2022. The Company adopted the standard as of January 1, 2021, and intends to apply the provisions of this standard to contract modifications if and when applicable. The adoption of the standard did not have a material impact on the Company's consolidated financial statements..

(3) Discontinued Operations

During the second quarter of 2020, the Company completed the sale of its DV business to MS Valves GmbH for negative \$8.3 million and a working capital adjustment of negative \$2.0 million at the time of closing. The transaction is subject to an earnout of 50% of net profit (only if positive) from closing through December 31, 2022. The Company had agreed to provide certain transition services for six to twelve months, depending on the nature of the services. As part of transaction the Company retained certain supplier and lease liabilities and responsibility for shutting down DV's Mexico manufacturing facility. The Company recognized a loss of \$21.6 million in 2020 from the sale of DV, including costs to sell and working capital adjustments.

During 2021, the Company continued to settle certain retained liabilities related to the sale of its DV business. During the third quarter of 2021, the Company recognized a gain of \$2.7 million related to an extinguished liability for the lease settlement of the Mexico manufacturing facility.

The following table presents the summarized components of income (loss) from discontinued operations, for the EV and DV businesses for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Net revenues	\$ —	\$ —	\$ 10,055
Cost of revenues	—	—	26,399
Net loss	—	—	(16,344)
Selling, general and administrative expenses	—	(84)	9,074
Special and restructuring charges, net (1)	—	17	17,831
Operating income (loss)	—	67	(43,249)
Other (income) expense:			
Interest (income), net	—	—	(14)
Other (income) expense, net	—	(1,581)	614
Total other (income) expense, net	—	(1,581)	600
Income (loss) from discontinued operations, pre tax	—	1,648	(43,849)
(Benefit from) provision for income taxes	—	242	(8,709)
Income (loss) from discontinued operations, net of tax	\$ —	\$ 1,406	\$ (35,140)

(1) The year ended December 31, 2020, includes a loss on the sale of the DV business of \$21.6 million.

(4) Revenue Recognition

The Company's revenue is derived from a variety of contracts. A significant portion of revenues are from contracts associated with the design, development, manufacture or modification of highly engineered, complex and severe environment products with customers who are either in or service the aerospace, defense and industrial markets. Contracts within the defense markets are primarily with U.S. military customers. These contracts typically are subject to the Federal Acquisition Regulations ("FAR"). The Company accounts for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. Contracts may be modified to account for changes in contract specifications and requirements.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, control is transferred to the customer. Consistent with historical practice, the Company excludes from the transaction price amounts collected on behalf of third parties (e.g. taxes). Performance obligations are typically satisfied at a point in time and shipping and handling costs are treated as fulfillment costs. To determine the proper revenue recognition method for contracts for highly engineered, complex and severe environment products, which meet over-time revenue recognition criteria, the Company evaluates whether two or more contracts should be combined and whether the combined or single contract should be accounted for as more than one performance obligation. For most of the Company's over-time revenue recognition contracts, the customer contracts with the Company to provide custom products which serve a single project or capability (even if that single project results in the delivery of multiple products) with enforceable right to payment. In circumstances where each distinct product in the contract transfers to the customer over time and the same method would be used to measure the entity's progress toward complete satisfaction of the performance obligation to transfer each unit to the customer, the Company then applies the series guidance to account for the multiple products as a single performance obligation. In certain instances, the Company may promise to provide distinct goods or services within the over-time revenue recognition contract, in which case the Company separates the contract into more than one performance obligation. For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation using estimated standalone selling price of each distinct good or service in the contract when not directly observable. If at the inception of the contract the period between the transfer of control of the good or service to the customer and when the customer pays for that good or service is less than a year the Company applies the practical expedient for significant financing component. Certain long-term contracts result in contract assets for unbilled receivables or contract liabilities for customer advances or deposits. Such unbilled receivables or customer advances and deposits are not considered a significant financing component because they are protective in nature for the customer or the Company.

Certain of the Company's contracts give rise to variable consideration, including penalties. The Company includes in its contract estimates a reduction to revenue for customer agreements, primarily in the large projects businesses, which contain late shipment penalty clauses whereby the Company is contractually obligated to pay consideration to customers if the Company does not meet specified shipment dates. Variable consideration is estimated using the most likely amount method or the expected value method depending on nature of the variability, and the method elected is consistently applied among performance obligations with similar uncertainties.

For revenue that is recognized from products and services transferred to customers over-time, the Company uses an input measure (e.g., costs incurred to date relative to total estimated costs at completion, known as the "cost-to-cost" method) to measure progress. The Company uses the cost-to-cost measure of progress because it best depicts the transfer of control to the customer which occurs as it incurs costs on its contracts. Under the cost-to-cost measure of progress, revenue is recognized proportionally as costs are incurred. Contract costs include labor, materials and subcontractors' costs, other direct costs and an allocation of overhead, as appropriate. Accounting for over-time contracts requires reliable estimates in order to estimate total contract revenue and costs. For these contracts, management reviews the progress and execution of the Company's performance obligations at least quarterly. Management estimates the profit on a contract as the difference between the total estimated revenue and estimate at completion ("EAC") costs and recognizes the resultant profit over the life of the contract, using the cost-to-cost EAC input method to measure progress toward complete satisfaction of a performance obligation. A change in one or more of these estimates could affect the profitability of the related contracts. Management recognizes adjustments in estimated profit on contracts under the cumulative catch-up method. Under this method, the impact of the adjustment on profit recorded to date is recognized in the period the adjustment is identified. Revenue and profit in future periods of contract performance is recognized using the adjusted estimate. The impact of adjustments in contract estimates on our operating earnings may be reflected in cost of revenues and/or revenue.

On December 31, 2022, the Company had \$236.7 million of transaction price related to remaining performance obligations. It expects to recognize approximately 66% of our remaining performance obligations as revenue during 2023, 26% in 2024, and 8% thereafter.

Contract Balances

Revenue on over time contracts is recognized as the Company, in accordance with the terms of the applicable contract, transfers control in the underlying products or services to the customer, which occurs as it incurs costs on its contracts under the cost-to-cost measure of progress. The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the consolidated balance sheet. Contract assets include unbilled amounts typically resulting from over-time contracts when revenue recognized exceeds the amount billed to the customer, and right to payment is not just subject to the passage of time. Expected credit losses are considered and allowances recorded where applicable, which result in the net amount expected to be collected. Generally, payment terms are based on milestones or shipment and billing occurs subsequent to revenue recognition, resulting in contract assets for over-time revenue recognition products. However, the Company sometimes receives advances or deposits from its customers, before revenue is recognized, resulting in contract liabilities. These assets and liabilities are reported net on the consolidated balance sheet on a contract-by-contract basis at the end of each reporting period. The incremental costs of obtaining a contract are expensed when the amortization period for such contracts would have been one year or less.

In order to determine revenue recognized in the period from contract liabilities, the Company first allocates revenue to the individual contract liabilities balances outstanding at the beginning of the period until the revenue exceeds that balance. If additional advances are received on those contracts in subsequent periods, it assumes all revenue recognized in the reporting period first applies to the beginning contract liabilities as opposed to a portion applying to the new advances for the period. Revenue recognized during the years ended December 31, 2022 and 2021, that was included in contract liabilities as of the beginning of each year amounted to 20.3 million and 24.5 million, respectively.

The Company's contract assets and contract liabilities as of December 31, 2022 and 2021 are as follows (in thousands):

	December 31, 2022	December 31, 2021	Increase/(Decrease)
Contract assets:			
Recorded within prepaid expenses and other current assets	\$ 98,406	\$ 87,527	\$ 10,879
Recorded within other non-current assets	7,677	6,336	1,341
Total	<u>\$ 106,083</u>	<u>\$ 93,863</u>	<u>\$ 12,220</u>
Contract liabilities:			
Recorded within accrued expenses and other current liabilities	\$ 36,871	\$ 26,870	\$ 10,001
Recorded within other non-current liabilities	5,149	4,847	302
Total	<u>\$ 42,020</u>	<u>\$ 31,717</u>	<u>\$ 10,303</u>

Contract assets increased by \$12.2 million during the year ended December 31, 2022, primarily due to unbilled revenue recognized during the period for over-time revenue contracts within the Defense partially offset by decreases in Refinery Valves, Commercial and Other businesses and allowances against contract assets.

Contract liabilities increased by \$10.3 million during the year ended December 31, 2022, primarily due to customer advances received in excess of revenue recognition in the Defense and Industrial businesses.

Disaggregation of Revenue

The Company determined that disaggregating revenue into the categories shown in the table below meets the disclosure objective in ASC 606, *Revenue from Contracts with Customers*, which is to depict how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors.

The following tables present the revenue disaggregated by major product line and geographical market (in thousands):

Revenue by Major Product Line	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Industrial Segment			
Valves	\$ 183,997	\$ 185,044	\$ 199,715
Pumps	320,207	321,082	299,494
Total	\$ 504,204	\$ 506,126	\$ 499,209
Aerospace & Defense Segment			
Commercial Aerospace & Other	\$ 125,492	\$ 92,059	\$ 90,835
Defense	157,223	160,482	175,175
Total	282,715	252,541	266,010
Net Revenue	\$ 786,919	\$ 758,667	\$ 765,219

Revenue by Geographical Market	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Industrial Segment			
Europe, Middle East, Africa, "EMEA"	\$ 202,063	\$ 230,176	\$ 217,853
North America	177,728	146,307	170,301
Other	124,413	129,643	111,055
Total	\$ 504,204	\$ 506,126	\$ 499,209
Aerospace & Defense Segment			
EMEA	\$ 67,320	\$ 59,242	\$ 61,726
North America	195,190	179,589	188,817
Other	20,205	13,710	15,467
Total	\$ 282,715	\$ 252,541	\$ 266,010
Net Revenue	\$ 786,919	\$ 758,667	\$ 765,219

(5) Special and Restructuring (Recoveries) Charges, net

Special and Restructuring (Recoveries) Charges, net

Special and restructuring (recoveries) charges, net consist of restructuring costs (including costs to exit a product line or program) as well as certain special charges such as significant litigation settlements and other transactions (charges or recoveries) that are described below, as well as gain or loss on sale of businesses not classified as discontinued operations. All items described below are recorded in Special and restructuring (recoveries) charges, net on the Company's consolidated statements of operations. Certain other special and restructuring charges such as inventory related items may be recorded in cost of revenues given the nature of the item.

The table below summarizes the amounts recorded within the special and restructuring (recoveries) charges, net line item on the consolidated statements of operations for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	Special and Restructuring (Recoveries) Charges, net		
	Year Ended December 31,		
	2022	2021	2020
Special (recoveries) charges, net	\$ (30,079)	\$ 20,038	\$ (39,248)
Restructuring charges, net	11,066	4,234	4,945
Total special and restructuring (recoveries) charges, net	\$ (19,013)	\$ 24,272	\$ (34,303)

Special (Recoveries) Charges, net

The table below outlines the special charges (recoveries), net recorded for the year ended December 31, 2022 (in thousands):

	Special (Recoveries) Charges, net Year Ended December 31, 2022			
	Aerospace & Defense	Industrial	Corporate	Total
Pipeline Engineering investigation and restatement costs	\$ —	\$ —	\$ 7,040	\$ 7,040
Gain on real estate sales	(25,969)	(22,008)	—	(47,977)
Incremental loss allowance	—	500	—	500
Strategic alternatives evaluation	—	—	2,987	2,987
Debt amendment charges	—	—	4,977	4,977
Other special charges	—	988	1,406	\$ 2,394
Total special (recoveries) charges, net	<u>\$ (25,969)</u>	<u>\$ (20,520)</u>	<u>\$ 16,410</u>	<u>\$ (30,079)</u>

Pipeline Engineering investigation and restatement costs: During the twelve months ended December 31, 2022, the Company recognized special charges of \$7.0 million, related to the investigation into accounting irregularities at the Company's Pipeline Engineering businesses and incremental professional services charges incurred due to the restatement.

Gain on real estate sales: During the twelve months ended December 31, 2022, the Company recognized gains of \$48.0 million on the sales of real estate.

In September 2022, the Company recognized a gain on the sale of real estate of \$26.0 million located at Corona, California within the Aerospace and Defense segment. On September 6, 2022, the Company entered into a five year operating lease on the Corona facility, at the market rate of buildings of similar size and location, with a five year option to renew. The Company recorded an initial \$14.3 million of operating right of use asset and lease liabilities.

In June 2022, the Company recognized a gain on the sale of real estate of \$22.0 million located at Walden, New York and Tampa, Florida within the Industrial segment. The Company recognized a gain of \$6.4 million and \$15.6 million on each building, respectively. On April 8, 2022, the Company entered into a five year operating lease on the Tampa facility, at the market rate of buildings of similar size and location, with a five year option to renew. The Company recorded an initial \$9.3 million of operating right of use asset and lease liability.

Incremental loss allowance: The Company incurred special charges of \$0.5 million for the year ended December 31, 2022, related to a contract assumed as part of the Fluid Handling acquisition. The charges relates to incremental loss allowance for a receivable, contract asset and sub-contractor claims.

Strategic alternatives evaluation: The Company incurred special charges of \$3.0 million for the twelve months ended December 31, 2022, related to the evaluation of strategic alternatives for the Company.

Debt amendment charges: The Company incurred special charges of \$5.0 million for the twelve months ended December 31, 2022 related to the amendments of its credit agreements. See Note 12, Financing Arrangements for amendment information.

Other special charges, net: During the twelve months ended December 31, 2022, the Company recognized other special charges, net of \$2.4 million. Other special charges, net within Corporate for the twelve months ended December 31, 2022 include a net \$0.9 million for severance related to the former CEO, comprised of \$1.7 million severance, partially offset by the accounting effects of forfeitures for certain unvested CEO stock based compensation awards. Additionally, for the twelve months ended, December 31, 2022 the Company incurred other special charges of \$0.3 million at Corporate related to retention agreements and \$1.0 million within Industrial related to severance and contract termination costs, and other special charges.

The table below outlines the special charges (recoveries), net recorded for the year ended December 31, 2021 (in thousands):

	Special Charges (Recoveries), net for the year ended December 31, 2021			
	Aerospace & Defense	Industrial	Corporate	Total
Cryo divestiture gain	\$ —	\$ (1,947)	\$ —	\$ (1,947)
Heater & Control Valve divestiture charges	—	3,459	407	3,866
Debt refinancing charge	—	—	8,693	8,693
Incremental loss allowance	—	7,943	—	7,943
Other special charges, net	\$ 39	\$ 1,105	\$ 339	\$ 1,483
Total special charges (recoveries), net	<u>\$ 39</u>	<u>\$ 10,560</u>	<u>\$ 9,439</u>	<u>\$ 20,038</u>

Cryo divestiture: The Company recognized a net special recovery of \$1.9 million from the sale of the Cryo business. The Company received cash proceeds of \$7.2 million and recognized a pre-tax gain on sale of \$1.9 million.

Heater & Control Valve divestiture: The Company recognized special charges of \$3.9 million for the year ended December 31, 2021, related to the sale of the Heater and Control Valve businesses.

Debt refinancing charges: The Company incurred special charges of \$8.7 million for the year ended December 31, 2021, related to the refinancing of the credit agreement.

Incremental loss allowance: The Company incurred special charges of \$7.9 million for the year ended December 31, 2021, related to a contract assumed as part of the Fluid Handling acquisition. The charges relate to incremental loss allowance for a receivable, contract asset and sub-contractor claims.

Other special charges, net: The Company recognized special charges of \$1.5 million for the year ended December 31, 2021. Included in the \$1.1 million charge recognized within the Industrial segment was a contingency indemnification to the buyer of a previously divested business. The Company also recognized charges of \$0.3 million in Corporate associated with streamlining operations and reducing costs.

The table below outlines the special charges, net recorded for the year ending December 31, 2020 (in thousands):

	Special Charges (Recoveries), net for the year ended December 31, 2020			
	Aerospace & Defense	Industrial	Corporate	Total
Divestiture- related	\$ —	\$ (53,203)	\$ 46	\$ (53,157)
Professional fees to review and respond to an unsolicited tender offer to acquire the Company	—	—	6,937	6,937
Amortization debt issuance costs	—	—	3,541	3,541
Other cost savings initiatives	19	371	3,041	3,431
Total special charges, net	<u>\$ 19</u>	<u>\$ (52,832)</u>	<u>\$ 13,565</u>	<u>\$ (39,248)</u>

Divestiture-related: The Company recovered net special recoveries of \$53.2 million for the year ended December 31, 2020 due to the gain on sale of the I&S business in the Industrial segment.

Professional fees: The Company incurred special charges of \$6.9 million for the year ended December 31, 2020, associated with milestones reached subsequent to its response to an unsolicited tender offer to acquire the Company in the prior year.

Amortization of debt issuance costs: During the first quarter of 2020, the Company amended its term loan agreement in place at that time. As part of this amendment, the Company accelerated amortization of \$3.5 million in debt issuance costs.

Restructuring Charges, Net

The tables below outline the charges associated with restructuring actions recorded for the years ended December 31, 2022, 2021, and 2020 (in thousands).

Restructuring Charges as of and for the year ended December 31, 2022				
	Aerospace & Defense	Industrial	Corporate	Total
Facility related expenses	\$ 8	\$ 9,664	\$ —	\$ 9,672
Employee related expenses	15	986	393	1,394
Total restructuring charges, net	<u>\$ 23</u>	<u>\$ 10,650</u>	<u>\$ 393</u>	<u>\$ 11,066</u>
Accrued restructuring charges as of December 31, 2021				\$ 1,839
Total year to date charges, net (shown above)				11,066
Charges paid / settled, net				(12,068)
Accrued restructuring charges as of December 31, 2022				<u>\$ 837</u>

The Company recorded restructuring charges of \$11.1 million during the twelve months ended December 31, 2022. Of the \$11.1 million in total restructuring charges, \$10.4 million related to the exit of the Pipeline Engineering business. The \$10.4 million charge consists of \$5.3 million in impairments, \$0.6 million of termination benefits and \$4.7 million of deconsolidation charges. Impairments of \$5.3 million included \$3.8 million related to the write downs of Property, Plant and Equipment, Right of Use Assets and Intangibles, which is a level three fair value measurement based on the expected cash proceeds from dispositions of the assets. In addition, the Company recorded \$1.5 million in charges for write downs of working capital accounts, including primarily \$1.0 million for accounts receivables. Included in the Industrial employee related expenses is \$0.6 million in severance and termination benefits related to the exit of the Pipeline Engineering business. Additionally, during the twelve months ended December 31, 2022, the Company recognized \$0.2 million of an incremental recovery on the sale of Pipeline Engineering assets within facility and other related charges (recoveries), net. The Company expects to make payment or settle the majority of the restructuring charges accrued as of December 31, 2022, during the remainder of 2023.

On April 14, 2022, the Company placed the Catterick, UK entity of the Pipeline Engineering business into Administration under the U.K. Insolvency Act of 1986 and the Insolvency (England and Wales) Rules 2016 (IR 2016). The loss of control triggered deconsolidation and recognition into earnings of the related cumulative translation adjustment out of accumulated other comprehensive loss in the amount of \$5.3 million. The deconsolidation also resulted in a gain within restructuring of \$0.6 million related to the write down of net assets through deconsolidation. The Company determined the loss of control did not qualify for reporting as a discontinued operation as it did not represent a strategic shift that has a major effect on the Company's operations and financial results.

In addition, the Company recorded a charge of \$2.8 million for write down of inventories related to the exit of the Pipeline Engineering business classified within cost of revenues on the condensed consolidated statements of operations.

During the twelve months ended December 31, 2022, the Company recorded \$0.4 million of employee related severance charges, not associated with the exit of the Pipeline Engineering business.

The Company expects to make payment or settle the majority of the restructuring charges accrued as of December 31, 2022 during 2023.

Restructuring Charges
as of and for the year ended December 31, 2021

	Aerospace & Defense	Industrial	Corporate	Total
Facility related expenses	\$ 181	\$ 118	\$ —	\$ 299
Employee related expenses	1,126	2,438	371	3,935
Total restructuring charges, net	<u>\$ 1,307</u>	<u>\$ 2,556</u>	<u>\$ 371</u>	<u>\$ 4,234</u>
Accrued restructuring charges as of December 31, 2020				\$ 1,512
Total year to date charges, net (shown above)				4,234
Charges paid / settled, net				(3,907)
Accrued restructuring charges as of December 31, 2021				<u>\$ 1,839</u>

The Company made payment or settled the majority of the restructuring charges accrued as of December 31, 2021 during 2022.

Restructuring Charges
as of and for the year ended December 31, 2020

	Aerospace & Defense	Industrial	Corporate	Total
Facility related expenses	\$ 18	\$ 246	1	\$ 265
Employee related expenses	343	3,822	515	4,680
Total restructuring charges, net	<u>\$ 361</u>	<u>\$ 4,068</u>	<u>\$ 516</u>	<u>\$ 4,945</u>
Accrued restructuring charges as of December 31, 2019				\$ 5,199
Total year to date charges, net (shown above)				4,945
Charges paid / settled, net				(8,632)
Accrued restructuring charges as of December 31, 2020				<u>\$ 1,512</u>

The Company made payment or settled the majority of the restructuring charges accrued as of December 31, 2020 during 2021.

(6) Leases

The Company leases certain office spaces, warehouses, vehicles and equipment under operating leases. Leases with an initial term of 12-months or less are not recorded on the consolidated balance sheets. The Company recognizes lease expense for these leases on a straight-line basis over the lease term.

For lease agreements entered into after the adoption of ASC Topic 842, *Leases*, which was adopted on January 1, 2019, the Company combines lease and non-lease fixed components for real estate, vehicles and equipment leases. It does not combine lease and non-lease components for information technology leases. Variable lease costs are not included within the measurement of the lease liability as they are entirely variable or the difference between the portion captured within the lease liability and the actual cost will be expensed as incurred. Variable costs are contractually obligated and relate primarily to common area maintenance and taxes, which are not material to the financial statements.

The Company elected the package of practical expedients permitted under the transition guidance, which allowed it to carry forward the historical lease classification, not reassess if existing contracts are or contain leases, and not reassess indirect costs for existing leases. It has elected not to recast the comparable periods and rather used the effective adoption date of the standard as the date of initial application.

In determining the present value of lease payments, the Company uses the implicit borrowing rate in the lease, if available. In cases where a lease does not provide an implicit borrowing rate, it uses the incremental borrowing rate based on available information at the lease commencement date. As of December 31, 2022, none of its existing leases provided an implicit borrowing rate. The Company gives consideration to its debt issuances as well as publicly available data for instruments with similar characteristics when calculating its incremental borrowing rates. Additionally, it performs an entity-level financial assessment along with risk assessment by country or jurisdiction in the determination of the incremental borrowing rate. It updates its financial and risk assessments periodically. The Company reassesses lease classification and / or remeasures the lease liability in the event of the following: changes in assessment of renewal, termination or purchase option based on triggering events within our control, change in amounts probable of being owed under a residual guarantee, or contingency resolution.

Certain leases include one or more options to renew or terminate a lease early. The exercise of these options is at the Company's sole discretion. There are currently no renewal periods included in any of the leases' respective lease terms as they are not reasonably certain of being exercised. The Company does not have any material purchase options.

Certain of our lease agreements have rental payments that are adjusted periodically for inflation or that are based on usage. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Supplemental balance sheet information related to our leases is as follows (in thousands):

	December 31, 2022		December 31, 2021	
	Operating	Finance	Operating	Finance
Assets				
Gross Right-of-Use Assets (1)	\$ 46,009	\$ 5,600	\$ 26,657	\$ 5,461
Less: Accumulated Amortization	(8,571)	(547)	(9,605)	(1,374)
Net Right-of-Use Assets	<u>\$ 37,438</u>	<u>\$ 5,053</u>	<u>\$ 17,052</u>	<u>\$ 4,087</u>
Liabilities				
Current (2)	\$ 5,246	\$ 856	\$ 3,682	\$ 867
Non-current (3)	34,218	4,262	14,471	3,243
Total Lease Liabilities	<u>\$ 39,464</u>	<u>\$ 5,118</u>	<u>\$ 18,153</u>	<u>\$ 4,110</u>

(1) Operating and Finance Right-of-Use assets are included within lease, right-of-use assets, net on the consolidated balance sheets.

(2) The current portion of operating and finance lease liabilities are recorded within accrued expenses and other current liabilities on the consolidated balance sheets.

(3) The non-current portion of operating and finance lease liabilities are recorded within long-term lease liabilities on the consolidated balance sheets.

The components of lease costs are as follows (in thousands):

Lease Costs	December 31, 2022	Year Ended December 31, 2021	December 31, 2020
Operating lease cost (1)	\$ 7,060	\$ 5,912	\$ 6,794
Finance lease cost			
Amortization of leased assets (2)	866	611	568
Interest on lease liabilities (3)	181	93	70
Total finance lease costs	1,047	704	638
Total lease cost	\$ 8,107	\$ 6,616	\$ 7,432

(1) Operating lease costs are recorded within selling, general and administrative expenses or cost of revenues within the consolidated statements of operations depending upon the nature of the underlying lease.

(2) Finance lease amortization costs are recorded in cost of revenues, as well as selling, general and administrative expenses within the consolidated statements of operations.

(3) Finance lease interest costs are recorded in interest expense, net within the consolidated statements of operations.

Short-term lease expense and variable lease cost for the years ended December 31, 2022, 2021, and 2020 were not significant.

The estimated future minimum lease payments only include obligations for which the Company is reasonably certain it will exercise its renewal option. Such future payments are as follows (in thousands):

Maturity of Lease Liabilities	Operating	Finance	Total
2023	\$ 7,881	\$ 1,353	\$ 9,234
2024	7,387	1,346	8,733
2025	6,285	1,330	7,615
2026	5,817	1,273	7,090
2027	5,028	828	5,856
After 2027	19,161	—	19,161
Less: Interest	(12,095)	(1,012)	(13,107)
Total	\$ 39,464	\$ 5,118	\$ 44,582

The weighted average remaining lease term and discount rates are as follows:

Lease Term and Discount Rate	December 31, 2022	December 31, 2021	December 31, 2020
Weighted average remaining lease term (years)			
Operating leases	7.8	5.9	6.3
Finance leases	4.6	5.6	6.2
Weighted average discount rate (percentage)			
Operating leases	7.7 %	4.5 %	6.8 %
Finance leases	8.9 %	2.0 %	4.8 %

Supplemental cash flow information related to leases are as follows (in thousands):

Other Information	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Operating Activities			
Noncash Right-of-Use assets arising from entering into new operating lease obligations	\$ 27,135	\$ 303	\$ 268
Cash paid for operating lease liabilities	8,129	5,256	5,013
Total Operating Activities	\$ 35,264	\$ 5,559	\$ 5,281
Financing Activities			
Principal paid on finance lease liabilities	\$ (353)	\$ (654)	\$ (557)
Supplemental			
Interest paid on finance lease liabilities	\$ 181	\$ 93	\$ 70

As of December 31, 2022, the Company has not entered into any lease agreements with related parties.

(7) Inventories

Inventories consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Raw materials	\$ 59,431	\$ 51,911
Work in process	63,846	55,942
Finished goods	16,509	15,490
Inventories	\$ 139,786	\$ 123,343

The Company regularly reviews inventory quantities on hand and records a provision to write-down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on estimated forecast of product demand. Once inventory value is written-down a new cost basis has been established. For the years ended December 31, 2022, 2021, and 2020, charges for excess and obsolete inventory and net realizable value reserves totaled \$2.6 million, \$3.4 million, and \$4.3 million, respectively.

(8) Property, Plant and Equipment

Property, plant and equipment consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Land	\$ 25,813	\$ 31,377
Buildings and improvements	60,000	84,846
Manufacturing machinery and equipment (1)	133,921	127,692
Computer equipment and software	37,773	39,111
Furniture and fixtures	13,329	13,477
Vehicles	753	797
Construction in progress (1)	14,364	10,769
Property, plant and equipment, at cost	285,953	308,069
Less: Accumulated depreciation	(144,812)	(153,608)
Property, plant and equipment, net	\$ 141,141	\$ 154,461

(1) For the period ended December 31, 2021, the Company recast \$4.7 million from Construction in progress to Manufacturing machinery and equipment to conform with current period presentation.

Depreciation expense for the years ended December 31, 2022, 2021, and 2020 was \$19.7 million, \$22.9 million, and \$20.4 million, respectively.

The Company recorded additions to property, plant and equipment of \$2.5 million and \$1.5 million in the years ended December 31, 2022 and December 31, 2021, respectively, for which cash payments had not yet been made.

(9) Goodwill and Other Intangible Assets

The following table shows goodwill by segment as of December 31, 2022 and 2021 (in thousands):

	Aerospace & Defense	Industrial	Consolidated Total
Goodwill as of December 31, 2021	\$ 57,360	\$ 65,546	\$ 122,906
Currency translation adjustments	21	(3,080)	(3,059)
Goodwill as of December 31, 2022	\$ 57,381	\$ 62,466	\$ 119,847

	Aerospace & Defense	Industrial	Consolidated Total
Goodwill as of December 31, 2020	\$ 57,468	\$ 79,455	\$ 136,923
Impairment	—	(10,500)	(10,500)
Reclassification of Cryo to assets held for sale	—	(755)	(755)
Currency translation adjustments	(108)	(2,654)	(2,762)
Goodwill as of December 31, 2021	\$ 57,360	\$ 65,546	\$ 122,906

The Company performs an impairment assessment for goodwill at the reporting unit level on an annual basis as of the end of our October month end or more frequently if the Company believes indicators of impairment exist.

For the annual goodwill impairment assessment during the fourth quarter of 2022, the Company estimated the fair value of its reporting units, using an income approach based on the present value of future cash flows. The Company believes this approach was the best approximation of fair value of its reporting units and incorporates assumptions market participants would use in estimating the fair value of reporting units. The Company also utilized the implied market value method under the market approach to validate the fair value amount it obtained using a discounted cash flow model income approach which indicated a control premium. The key assumptions utilized in our discounted cash flow model included an estimated rate of revenue growth and the discount rate based on a weighted average cost of capital. The estimated fair values using a discounted cash flow model were reconciled to the value indicated by the market capitalization including an assessment of the implied control premium. The relevant inputs, estimates and assumptions used in the implied market value method included our market capitalization as of the end of October 2022, and selection of a control premium.

The Company also performed its annual impairment testing of indefinite-lived assets during the fourth quarter of 2022. This impairment evaluation was performed using the relief from royalty valuation method. Based on this analysis, the fair value of the indefinite-lived assets exceeded their carrying values and the assets were deemed to be not impaired. The Company believes its procedures for estimating fair value were reasonable and consistent with market conditions at the time of estimation.

As part of the 2022 annual impairment assessment, the Company determined that the fair value for the RV reporting unit was less than its carrying value. While the RV reporting unit had no goodwill as of the date of the assessment, the Company determined this was an impairment indicator, and performed an impairment assessment of the asset group using an undiscounted cash flow model. The Company concluded that there was no impairment related to RV asset group for the year ended December 31, 2022.

As part of its annual goodwill impairment assessment during the fourth quarter of 2021, the Company reassessed the aggregation criteria for its reporting units and determined that the Refinery Valves component in the Industrial segment no longer satisfied criteria for aggregation with the Industrial reporting unit and was identified as a separate reporting unit. Accordingly, goodwill of the previously aggregated Industrial reporting unit was reassigned on a relative fair value basis between the Refinery Valves and Industrial reporting units. The reassignment resulted in \$10.5 million of goodwill reassigned from the aggregated Industrial reporting unit to the Refinery Valves reporting unit. The Company performed its goodwill impairment assessment immediately before and after the change in reporting units, on the aggregated Industrial reporting unit and disaggregated Refinery Valves and Industrial reporting units.

The fair value of the aggregated and disaggregated Industrial reporting unit immediately prior to and following the change in reporting units, exceeded its carrying value and its goodwill was not impaired. The fair value of the Refinery Valves reporting unit was less than its carrying value in 2021. The Company recorded goodwill impairment charge of all of the Refinery Valves reporting unit goodwill in the amount of \$10.5 million. The Refinery Valves long-lived asset group was not impaired and did not suffer a decline in utility requiring a reassessment of the long-lived assets in the asset group.

The fair value of the Aerospace & Defense reporting unit exceeded its carrying value and its goodwill was not impaired.

At March 29, 2020, the Company reorganized its reporting units (see Note 18, Business Segment and Geographical Information) and had its stock price drop below book value, which the Company determined were triggering events requiring an assessment of its goodwill and indefinite-lived trade names. The Company's asset groups did not experience a triggering event, and its long-lived assets did not suffer a decline in utility requiring a reassessment of their useful lives. Through its assessment, management determined that its long-lived assets other than goodwill were not impaired.

For the assessment of goodwill as of March 29, 2020, the Company estimated the fair value of its two reporting units, Industrial and Aerospace & Defense, using an income approach based on the present value of future cash flows. The Company also utilized the implied market value method under the market approach to validate the fair value amount it obtained using a discounted cash flow model income approach which indicated a control premium. Management believes this approach was the best approximation of fair value of its reporting units given the environment and considering the uncertainty caused by the COVID-19 pandemic. The key assumptions utilized in discounted cash flow model included an estimated rate of revenue growth and the discount rate based on a weighted average cost of capital. The estimated fair values using a discounted cash flow model were reconciled to the value indicated by the market capitalization including an assessment of the implied control premium. The relevant inputs, estimates and assumptions used in the implied market value method included our market capitalization as of March 29, 2020, and selection of a control premium.

Based on the impairment assessment as of March 29, 2020, the Company determined that goodwill in the Industrial reporting unit had been impaired and, accordingly, resulted in a goodwill impairment charge of \$138.1 million during the first quarter of 2020.

Goodwill impairment was measured at fair value on a nonrecurring basis using future discounted cash flows and other observable inputs (Level 3).

The tables below present gross intangible assets and the related accumulated amortization (in thousands):

	December 31, 2022		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
Patents	\$ 5,368	\$ (5,368)	\$ —
Customer relationships	285,910	(151,258)	134,652
Acquired technology	132,601	(82,898)	49,703
Total Amortized Assets	\$ 423,879	\$ (239,524)	\$ 184,355
Non-amortized intangibles (primarily trademarks and trade names)	\$ 71,983	\$ —	\$ 71,983
Net Carrying Value of Intangible assets			<u>\$ 256,338</u>

	December 31, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value
Patents	\$ 5,368	\$ (5,368)	\$ —
Customer relationships	302,358	(137,861)	164,497
Acquired technology	135,972	(72,708)	63,264
Total Amortized Assets	\$ 443,698	\$ (215,937)	\$ 227,761
Non-amortized intangibles (primarily trademarks and trade names)	\$ 75,715	\$ —	\$ 75,715
Net Carrying Value of Intangible assets			<u>\$ 303,476</u>

Amortization of intangible assets was \$36.3 million, \$42.3 million and \$43.7 million for the years ended December 31, 2022, 2021 and 2020, respectively.

The table below presents estimated future amortization expense for intangible assets recorded as of December 31, 2022 (in thousands):

	2023	2024	2025	2026	2027	After 2027
Estimated amortization expense	<u>\$ 31,320</u>	<u>\$ 27,512</u>	<u>\$ 24,018</u>	<u>\$ 20,890</u>	<u>\$ 16,716</u>	<u>\$ 63,899</u>

For the year ended December 31, 2022 the Company recorded \$1.6 million of trade name impairment related to the exit of Pipeline Engineering business. No goodwill impairment was recorded for the year ended December 31, 2022.

(10) Income Taxes

The significant components of our deferred income tax liabilities and assets were as follows (in thousands):

	December 31,	
	2022	2021
Deferred income tax (liabilities):		
Fixed Assets	(9,390)	(12,315)
Intangible Assets	(32,839)	(41,425)
Right of Use Lease	(9,461)	(3,175)
Other	(5,030)	(3,957)
Total deferred income tax liabilities	(56,720)	(60,872)
Deferred income tax assets:		
Accrued Expenses	5,184	4,937
Bad Debt	2,217	2,375
Equity Compensation	869	3,191
Right of Use Lease	9,941	3,457
R&D Capitalization	5,014	—
Inventory	4,342	4,768
Other	4,037	6,804
Net operating loss and credit carry-forward	81,849	96,511
Pension	14,018	23,727
Interest	31,404	22,329
Goodwill	7,506	10,813
Total deferred income tax assets	166,381	178,912
Valuation allowance	(127,387)	(139,005)
Deferred income tax asset, net of valuation allowance	38,994	39,907
Deferred income tax liability	<u>\$ (17,726)</u>	<u>\$ (20,965)</u>

The (benefit from) provision for income taxes is based on the following pre-tax (loss) income (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Domestic	\$ (26,430)	\$ (55,752)	\$ (168,988)
Foreign	50,097	(2,110)	41,416
Income (loss) before income taxes	<u>\$ 23,667</u>	<u>\$ (57,862)</u>	<u>\$ (127,572)</u>

The provision for income taxes consisted of the following (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current provision:			
Federal - U.S.	\$ 253	\$ —	\$ 165
Foreign	7,233	7,942	8,415
State -U.S.	502	232	548
Total current provision	<u>\$ 7,988</u>	<u>\$ 8,174</u>	<u>\$ 9,128</u>
Deferred expense (benefit):			
Federal - U.S.	\$ (2,070)	\$ 130	\$ 39,293
Foreign	(1,371)	(3,052)	5,033
State -U.S.	(268)	(70)	2,448
Total expense (benefit) deferred	<u>(3,709)</u>	<u>(2,992)</u>	<u>46,774</u>
Total provision for income taxes	<u>\$ 4,279</u>	<u>\$ 5,182</u>	<u>\$ 55,902</u>

Actual income taxes reported from operations were different from those that would have been computed by applying the federal statutory tax rate to (loss) income before income taxes. The expense for income taxes differed from the U.S. statutory rate due to the following:

	Year Ended December 31,		
	2022	2021	2020
Expected federal income tax rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal tax benefit	(10.3)	(0.3)	(2.1)
Impairment	—	—	(6.5)
U.S. permanent differences	2.3	(1.7)	—
Foreign tax rate differential	(4.8)	3.7	2.8
Maturity of Interest Rate Swap	(10.7)	—	—
Tax reserve	(1.5)	(2.6)	(0.6)
Rate Change	—	(1.7)	(0.1)
GILTI	5.3	—	—
Prior period adjustment	6.2	0.2	1.4
Dispositions	—	(1.0)	(0.7)
Valuation Allowance	11.9	(24.7)	(59.1)
Other, net	1.3	(5.2)	0.3
Equity compensation	0.6	2.0	(0.3)
Research and development	(3.2)	1.3	—
Effective tax rate	<u>18.1 %</u>	<u>(9.0)%</u>	<u>(43.8)%</u>

ASC 740, Income Taxes, requires a valuation allowance to reduce deferred tax assets ("DTAs") if, based on the weight of available evidence, it is more likely than not that some portion, or all, of the deferred tax assets will not be realized. The weight given to the potential effect of negative and positive evidence should be commensurate with the extent to which it can be objectively verified. The more negative evidence that exists, (a) the more positive evidence is necessary and (b) the more difficult it is to support a conclusion that a valuation allowance is not needed for some portion, or all, of the deferred tax asset. Should there be a cumulative loss in recent years it is considered a significant piece of negative evidence that is difficult to overcome in assessing the need for a valuation allowance.

The Company recognized a valuation allowance for the German and the U.S. net DTAs to the extent of reversing DTLs during the year ended December 31, 2020. The Company continued to maintain a valuation allowance against its deferred tax assets in Germany and the U.S. as both jurisdictions remain in a cumulative three year loss position at December 31, 2022. The Company concluded that the negative evidence associated with the history of losses outweighed any positive evidence as of December 31, 2022. Therefore, the Company has not relied on projections of future taxable income in our assessment of the realization of deferred tax assets at December 31, 2022. The Company calculated the valuation allowance based on the reversal of temporary differences. The Company maintained a valuation allowance related to the German deferred tax assets of \$3.9 million and \$13.2 million, as of December 31, 2022 and December 31, 2021, respectively. The Company maintained a valuation allowance related to the U.S. deferred tax assets of \$82.5 million and \$73.1 million, as of December 31, 2022 and December 31, 2021, respectively. For other jurisdictions there are no temporary differences to consider for the valuation allowance.

As of December 31, 2022, and 2021, the Company maintained a total valuation allowance of \$127.4 million and \$139 million, respectively, relating to foreign, federal, and state deferred tax assets. This decrease is partially due to the removal of the United Kingdom deferred tax asset of \$8.7 million related to Pipeline UK and the deconsolidation. The amount of the deferred tax asset considered realizable, however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or increased or if objective negative evidence in the form of cumulative losses is no longer present and additional weight is given to subjective evidence such as our projections for growth.

The following table provides a summary of the changes in the deferred tax valuation allowance for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	December 31,		
	2022	2021	2020
Deferred tax valuation allowance at January 1	\$ 139,005	\$ 138,689	\$ 46,967
Additions	10,236	9,329	91,866
Acquired	—	—	—
Deductions	(21,854)	(9,013)	(144)
Deferred tax valuation allowance at December 31	<u>\$ 127,387</u>	<u>\$ 139,005</u>	<u>\$ 138,689</u>

The Company files income tax returns in the US federal, state and local jurisdictions and in foreign jurisdictions. The Company is no longer subject to examination by the Internal Revenue Service (“IRS”) and state jurisdictions for years prior to 2019 and is no longer subject to examination by the tax authorities in foreign jurisdictions prior to 2007, with the exception of net operating loss carryforwards. The Company is currently under examination for income tax filings in various foreign jurisdictions.

As of December 31, 2022, the Company had U.S. federal net operating losses of \$33.2 million, U.S. tax credits of \$21.5 million, foreign net operating losses of \$152.8 million, state net operating losses of \$181.9 million and state tax credits of \$3.6 million. As of December 31, 2021, the Company had U.S. federal net operating losses of \$55.6 million, U.S. tax credits of \$21.4 million, foreign net operating losses of \$202.0 million, state net operating losses of \$151.2 million and state tax credits of \$4.0 million. The U.S. tax credits, if not utilized, will expire in 2026 through 2038. A portion of the foreign net operating losses \$90.3 million expire at various dates through 2037; the remaining \$62.5 million have an unlimited carryforward period. The federal net operating losses have an unlimited carryforward period. The state net operating losses and state tax credits, if not utilized, will expire at various dates through 2042.

As of December 31, 2022, the liability for uncertain income tax positions was approximately \$2.1 million. Approximately \$1.5 million as of December 31, 2022 represents the amount that if recognized would affect the Company’s effective income tax rate in future periods. The Company does not expect the unrecognized tax benefits to change over the next 12 months. The table below does not include interest and penalties of \$0.1 million and \$0.2 million as of December 31, 2022 and 2021, respectively.

The following is a reconciliation of the Company's liability for uncertain income tax positions for the years ended December 31, 2022, 2021 and 2020 (in thousands):

	December 31,		
	2022	2021	2020
Balance beginning January 1	\$ 2,578	\$ 1,078	\$ 630
Additions/(reductions) for tax positions of prior years	(461)	1,529	448
Additions/(reductions) based on tax positions related to current year	311	212	—
Tax Audit Settlement	(269)	(200)	—
Currency movement	(44)	(41)	—
Balance ending December 31	<u>\$ 2,115</u>	<u>\$ 2,578</u>	<u>\$ 1,078</u>

Undistributed earnings of our foreign subsidiaries amounted to \$87.8 million and \$86.0 million at December 31, 2022 and December 31, 2021, respectively. The undistributed earnings of our foreign subsidiaries (except for one of our China subsidiaries and a \$1.5 million dividend that has been approved but not yet distributed from an Indian subsidiary. \$0.2 million of withholding tax has been accrued on this dividend) are considered to be indefinitely reinvested unless earnings can be repatriated in a tax efficient manner and accordingly, no provision for income taxes has been recorded (except for withholding taxes related to the forementioned China and India subsidiaries). Determination of the amount of unrecognized deferred tax liability on these undistributed earnings is not practicable because of the complexity of laws and regulations, the varying tax treatment of alternative repatriation scenarios, and the variation due to multiple potential assumptions relating to the timing of any future repatriation.

(11) Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31,	
	2022	2021
Contract liabilities	\$ 36,871	\$ 26,870
Commissions payable and sales incentive	2,853	3,594
Warranty reserve	2,521	2,739
Professional fees	1,774	2,529
Taxes other than income tax	3,342	3,091
Income tax payable	2,051	3,075
Short term pension liability and other post-employment benefits (OPEB)	4,789	4,560
Operating lease liability	5,246	3,682
Other	25,063	31,858
Total accrued expenses and other current liabilities	<u>\$ 84,510</u>	<u>\$ 81,998</u>

(12) Financing Arrangements

Debt

Long-term debt consisted of the following (in thousands):

	December 31,	
	2022	2021
Term Loan at interest rates ranging from 5.0%-9.9% in 2022 and 4.3%-5.0% in 2021	\$ 489,575	\$ 525,000
Line of Credit at interest rates ranging from 6.8%-11.3% in 2022 and 3.6%-6.8% in 2021	27,350	—
Short-Term Borrowings	—	1,311
Total Principal Debt Outstanding	516,925	526,311
Less: Unamortized Discount and Debt Issuance Costs	20,391	13,006
Less: Short-Term Borrowings and Current Portion of Long-Term Debt	—	1,611
Total Long-Term Debt, net	\$ 496,534	\$ 511,694

	2023	2024	2025	2026	2027	Thereafter
Minimum principal payments	\$ —	\$ —	\$ —	\$ 27,350	\$ —	\$ 489,575

As of December 31, 2022, the Company had gross borrowings of \$516.9 million outstanding under the Credit Agreement compared to \$525.0 million as of December 31, 2021. In addition, the Company had \$0.0 million and \$1.3 million in other short-term borrowings as of December 31, 2022 and December 31, 2021, respectively.

On December 20, 2021, the Company entered into a secured credit agreement (the "Credit Agreement"), which provides for a \$100.0 million revolving line of credit with a five year maturity and a \$530.0 million term loan with a seven year maturity which was funded in full at closing. As of December 31, 2022, we had available capacity to borrow an additional \$48.3 million under our revolving credit facility. The Credit Agreement replaced and terminated the Company's prior credit agreement, dated as of December 11, 2017 (the "Prior Credit Agreement").

The term loan requires quarterly principal payments of 0.25% of initial aggregate principal amount until maturity. The Company has mandatory debt repayment obligations of \$5.3 million per year until 2028 under the Credit Agreement. However, since the Company made a \$5.0 million prepayment on its term loan in December 2021, and \$35.4 million in prepayments in April and September 2022 from sale-leaseback proceeds, there are no further repayment obligations until the term loan matures in December 2028.

On April 8, 2022, the Company entered into Amendment No. 1 to the Credit Agreement (the "First Amendment"). The First Amendment makes certain changes to the Credit Agreement, including (i) extending the deadline for the Company to deliver its annual financial statements for the fiscal year ended December 31, 2021, (ii) increasing the interest rate margins for (a) the term loan facility to 5.50% with respect to Eurodollar loans, (b) the revolving facility to 4.75% with respect to Eurodollar loans and (c) the swing line facility to 3.75%, (iii) in the event of a step-down in the debt ratings of the facilities, increasing the interest rate margins for the term loan facility by an additional 0.50% during any such step-down period, (iv) decreasing certain debt, lien, investment, restricted payment and affiliate transaction baskets and negative covenant thresholds by 15%, (v) further decreasing or eliminating the use of certain debt, lien, investment and restricted payment baskets during the period until the date on which the Company delivers the annual financial statements for the fiscal year ended December 31, 2021 (such period, the "Restricted Period"), (vi) eliminating the minimum threshold and reinvestment rights with respect to mandatory prepayments of the term loans with the net cash proceeds of sale-leaseback transactions, subject to certain exceptions, (vii) restricting the Company's ability to borrow swing loans or revolving loans if the aggregate amount of cash and cash equivalents of the Company and its domestic subsidiaries exceeds \$10.0 million and creating a requirement to prepay outstanding swing loans and revolving loans with any such excess, in each case, during the Restricted Period, (viii) resetting the "soft call" prepayment premium for an additional 12 months, and (ix) requiring the Company to hold private-side lender calls twice upon request of the Administrative Agent during the Restricted Period and promptly after the delivery of all quarterly and annual financial statements. In connection with the execution of the First Amendment, the Company paid approximately \$12.5 million in customary arranger and lender consent fees, attorney fees, and reasonable and documented expenses of the Administrative Agent.

Per the First Amendment, additional loans may be made available up to the greater of \$85.0 million or 80% of total earnings before interest, taxes, depreciation, and amortization plus the amount of certain voluntary prepayments and plus an amount subject to compliance with a first lien net leverage ratio of 4.5 to 1.00 or less upon request by the Company subject to specified terms and conditions. The Company may repay any borrowings under the Credit Agreement at any time, subject to certain limited and customary restrictions stated; provided, however, that if the Company prepays all or any portion of the term loan in connection with a repricing transaction on or prior to the 12-month anniversary of the First Amendment, the Company must pay a prepayment premium of 1.0% of the aggregate principal amount of the term loan so prepaid.

On May 27, 2022, the Company entered into Amendment No. 2 to the Credit Agreement (the “Second Amendment”). The Second Amendment makes certain changes to the Credit Agreement, including, to extend the deadline for the Company to deliver its annual financial statements for the fiscal year ended December 31, 2021 and its quarterly financial statements for the fiscal quarters ended April 3, 2022 and July 3, 2022. In addition, the Company is required to hold private-side lender calls at least once per month upon request, and promptly after the delivery of all quarterly and annual financial statements. In connection with the execution of the Second Amendment, the Company paid approximately \$4.2 million in customary arranger and lender consent fees, attorney fees, and reasonable and documented expenses of the Administrative Agent.

Prior to Amendments No.1 and No. 2, the Company had \$12.6 million of unamortized debt discount and debt issuance costs associated with its term loan and \$1.5 million unamortized deferred financing fees associated with its revolver as of April 3, 2022. Per Amendments No. 1 and No. 2, the Company incurred an additional \$15.5 million of debt discount and issuance costs associated with the term loan and \$1.2 million of fees associated with the revolver. The Company evaluated the accounting for this transaction under ASC 470 to determine modification versus extinguishment accounting on a creditor-by-creditor basis. During the second quarter 2022, the Company accounted for a combination of old and new debt discount and issuance costs totaling \$23.1 million as a modification (recorded as a debt discount and issuance costs on the consolidated balance sheet) and accounted for \$5.0 million as a debt extinguishment (included in special charges on the consolidated statements of operations). For the revolving credit facility, \$1.2 million was rolled into the existing Credit Agreement (included in other assets) during the second quarter 2022 based on the borrowing capacity with the underlying banks. As of December 31, 2022, there was \$20.4 million of debt issuance costs recorded as a debt discount and issuance costs on the consolidated balance sheet and \$2.3 million recorded in other assets associated with the Company's revolving credit facility.

The Company had \$24.4 million and \$24.7 million in letters of credit issued under the Credit Agreement as of December 31, 2022 and December 31, 2021, respectively. The Company recorded non-cash interest expense of \$3.6 million, \$3.9 million, and \$4.1 million for the years ended December 31, 2022, 2021 and 2020, respectively, related to the amortization of its deferred financing costs. The Credit Agreement revolving line of credit facility matures on December 20, 2026 whereas the term loan facility matures on December 20, 2028.

The Company's outstanding debt balances are characterized as Level 2 financial instruments. As of December 31, 2022, the estimated fair value of its gross debt (before netting debt issuance costs) was \$502.7 million, or \$14.2 million under its carrying value of \$516.9 million. This compares to an estimated fair value of \$524.3 million, or \$2.0 million under its carrying value of \$526.3 million as of December 31, 2021.

Financial Instruments

As of December 31, 2022 and December 31, 2021, the Company had restricted cash balances of \$2.4 million and \$1.4 million, respectively. These balances are recorded within prepaid expenses and other current assets on the consolidated balance sheets, and are included within cash, cash equivalents and restricted cash in the consolidated statements of cash flows.

Effective April 2018, the Company entered into an interest rate swap pursuant to an ISDA Master Agreement with Citizens Bank, National Association. The four-year interest rate swap has a fixed notional value of \$400.0 million with a 1% LIBOR floor and a maturity date of April 12, 2022. The interest rate swap was a qualifying hedging instrument and was accounted for as a cash flow hedge pursuant to ASC Topic 815, *Derivatives and Hedging*. The interest rate swap was settled upon its maturity during the second quarter of 2022. As of December 31, 2022 and December 31, 2021, the interest rate swap had a fair value liability of \$0.0 million and \$2.2 million, respectively.

The aggregate net fair value of the interest rate swap and cross-currency swap as of December 31, 2022 and December 31, 2021 are summarized in the table below (in thousands):

	Significant Other Observable Inputs Level 2	
	2022	2021
Derivative asset	\$ —	\$ —
Derivative liabilities	\$ —	\$ (2,187)

Derivative liabilities of \$(2.2) million were recorded in accrued expenses and other current liabilities on the Company's consolidated balance sheet as of December 31, 2021. There were no Derivative assets or liabilities as of December 31, 2022.

The amount of gain (loss) recognized in other comprehensive (loss) income ("OCI") and reclassified from accumulated other comprehensive (loss) income ("AOCI") to earnings are summarized below (in thousands):

	Year Ended	
	December 31, 2022	December 31, 2021
Amount of (loss) recognized in OCI	\$ (10)	\$ (284)
Amount of (loss) reclassified from AOCI to earnings (interest expense, net)	\$ (1,849)	\$ (6,682)

Interest expense, net (including the effects of the cash flow hedge) related to the portion of the Company's term loan subject to the interest-rate swap agreement was \$7.5 million for the year ended December 31, 2022 and \$24.0 million for the year ended December 31, 2021. The significant decrease in interest expense when compared to 2021 was due to the hedge being in effect for only a partial term in 2022.

(13) Share-Based Compensation

The Company has two share-based compensation plans as of December 31, 2022: (1) the 2019 Stock Option and Incentive Plan (the "2019 Plan") and (2) the 2014 Stock Option and Incentive Plan (the "2014 Plan"). The 2019 Plan was adopted by its Board of Directors (subject to shareholder approval) on February 20, 2019 and approved by its shareholders at the Company's annual meeting on May 9, 2019. On May 25, 2021 at the Company's annual meeting, the Company's shareholders approved an amendment to the 2019 Plan increasing the number of shares available for issuance from 1,000,000 to 2,000,000 shares (subject to adjustment for stock splits and similar events). As of May 9, 2019, no new awards will be granted under the 2014 Plan. As a result, any shares subject to outstanding awards under the 2014 Plan that expire, are canceled or otherwise terminate, or are withheld to satisfy tax withholding obligations will not be available for award grant purposes under the 2019 Plan. Both plans permit the grant of the following types of awards to its officers, other employees and non-employee directors: incentive stock options, nonqualified stock options, deferred stock awards, restricted stock awards, restricted stock unit ("RSU") awards, unrestricted stock awards, performance share awards, cash-based awards, stock appreciation rights ("SARs") and dividend equivalent rights. Under the 2019 Plan, shares issued for all awards count against the aggregate share limit as 1.0 share for every share actually issued. All stock options and RSUs granted under the 2014 Plan are either 100% vested or have been terminated. RSUs granted under both plans generally vest within three years. RSUs will be settled in shares of the Company's common stock. As of December 31, 2022, there were 1,247,421 shares available for grant under the 2019 Plan.

As of December 31, 2022, there were 41,310 stock options and 366,321 RSUs outstanding.

The Company measures the cost of all share-based payments, including stock options, at fair value on the grant date and recognizes this cost in the consolidated statements of operations, net of actual forfeitures. Compensation expense related to its share-based plans for the years ended December 31, 2022, 2021, and 2020 was \$1.9 million, \$5.3 million and \$5.5 million, respectively. The significant decrease in compensation cost in 2022 relates primarily to forfeitures associated with the departure of the Company's former CEO in January 2022 as well as the delay in granting annual equity awards. During 2022, expenses related to share-based compensation were recorded as follows: \$2.5 million as selling, general and administrative expenses and \$(0.6) million as special charges due mainly to the Company's former CEO departure. In 2021, expenses related to share-based compensation were recorded entirely in selling, general and administrative expenses. During 2020, \$0.2 million of share based compensation expense was classified in discontinued operations related to the sale of the DV business and is not included in the expense of \$5.5 million which relates to continuing operations. As of December 31, 2022, there was \$5.4 million of total unrecognized compensation cost related to the Company's outstanding share-based compensation arrangements. This cost is expected to be recognized over a weighted average period of 1.8 years. This compares to \$7.4 million for 2021 and \$5.4 million for 2020, respectively.

Stock Options

During the years ended December 31, 2022, December 31, 2021, and December 31, 2020 there were no stock option awards granted for the purchase of shares of the Company's common stock.

Restricted Stock Units (RSUs)

The Company accounts for RSU awards by expensing the weighted average fair value to selling, general and administrative expenses ratably over vesting periods generally ranging up to three years. During the years ended December 31, 2022, December 31, 2021, and December 31, 2020, the Company granted 263,490, 245,345 and 616,612 RSUs, respectively, with weighted average fair values of \$19.15, \$40.53, and \$12.88 per RSU award, respectively.

During 2022, 2021, and 2020, the Company granted performance-based RSUs as part of the overall mix of RSU awards. In 2022 and 2021, these performance-based RSU awards include a market condition based on the Company's total shareholder return relative to a subset of the S&P 600 SmallCap Industrial Companies over a three year performance period. The target payout range is 0% to 200% with a cap not to exceed 600% of the target value on grant date. The 2022 and 2021 performance-based RSUs are valued using a Monte Carlo Simulation model to account for the market condition on grant date. In 2020, these performance-based RSU Awards included metrics for achieving Adjusted Operating Margin and Adjusted Measurement Cash Flow with target payouts ranging from 0% to 200%. Of the different performance-based RSU tranches without a market condition, the Company anticipates 0% overall achievement and probability to vest. Of the 263,490 RSUs granted during 2022, 42,272 are performance-based RSU awards. This compares to 70,933 and 109,278 performance-based RSU awards granted in 2021 and 2020, respectively.

The CIRCOR Management Stock Purchase Plan ("MSPP"), which is a component of all three of the Company's share-based compensation plans, provides that eligible employees may elect to receive RSUs in lieu of all or a portion of their pre-tax annual incentive bonus and, in some cases, make after-tax contributions in exchange for RSUs ("RSU MSPs"). Each RSU MSP represents a right to receive one share of the Company's common stock after a three-year vesting period. RSU MSPs are granted at a discount of 33% from the fair market value of the shares of common stock on the date of grant. This discount is amortized as compensation expense, to selling, general and administrative expenses, over a four-year period. During 2022, RSU MSPs totaling 11,273 were granted with per unit discount amounts representing fair values of \$6.51. RSU MSPs totaling 31,248 with per unit discount amounts representing fair values of \$13.14 were granted during 2021. There were no RSU MSPs granted under the MSPP during the year ended December 31, 2020.

A summary of the status of all stock options and RSU awards granted to employees and non-employee directors as of December 31, 2022 and changes during the year are presented in the table below:

	December 31, 2022					
	Stock Options		RSU Awards		RSU MSPs	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Price	Shares	Weighted Average Price
Options and awards outstanding at beginning of period	596,753	\$ 42.58	445,396	\$ 27.81	62,251	\$ 24.35
Granted	—	\$ —	263,490	\$ 19.15	11,273	\$ 13.23
Exercised/Settled	—	\$ —	(129,077)	\$ 27.83	(28,170)	\$ 20.98
Forfeited	(188,711)	\$ 39.62	(233,770)	\$ 26.23	(25,072)	\$ 25.27
Expired	(366,732)	\$ 43.88	—	\$ —	—	\$ —
Options and awards outstanding at end of period	41,310	\$ 44.62	346,039	\$ 22.29	20,282	\$ 19.55
Options and awards exercisable at end of period	41	\$ 44.62	2,092	\$ 35.30	—	\$ —

The aggregate intrinsic value of stock options exercised during the years ended December 31, 2022, 2021 and 2020 was immaterial. The aggregate fair value of stock-options vested during the years ended December 31, 2022, 2021, and 2020 was \$0.0 million, \$1.1 million, and \$1.7 million, respectively. As of December 31, 2022, there was no unrecognized compensation cost related to stock options.

The aggregate intrinsic value of RSU awards settled during the years ended December 31, 2022, 2021, and 2020 was \$3.2 million, \$12.2 million, and \$1.9 million, respectively. The aggregate fair value of RSU awards vested during the 12 months ended December 31, 2022, 2021 and 2020 was \$3.6 million, \$6.0 million, and \$3.0 million, respectively. The aggregate intrinsic value of RSU awards outstanding as of December 31, 2022 was \$8.3 million. As of December 31, 2022, there was \$5.2 million of total unrecognized compensation cost related to RSU awards that is expected to be recognized over a weighted average period of 1.7 years.

There were no RSU MSPs exercisable as of December 31, 2022 and December 31, 2021, and 1,469 as of December 31, 2020. The aggregate intrinsic value of RSU MSPs settled during the years ended December 31, 2022, 2021, and 2020 was \$0.0 million, \$0.2 million, and \$0.0 million, respectively. The aggregate fair value of RSU MSPs vested during the years ended December 31, 2022, 2021, and 2020 was \$0.3 million, \$0.4 million, and \$0.4 million, respectively. The aggregate intrinsic value of RSU MSPs outstanding as of December 31, 2022 was \$0.1 million. As of December 31, 2022, there was \$0.1 million of total unrecognized compensation costs related to RSU MSPs that is expected to be recognized over a weighted average period of 2.0 years.

The following table summarizes information about equity awards outstanding at December 31, 2022:

(aggregate intrinsic value in thousands)	Equity Awards Outstanding				Equity Awards Exercisable			
	Awards	Average Share Price *	Aggregate Intrinsic Value	Remaining Term **	Awards	Average Share Price *	Aggregate Intrinsic Value	Remaining Term **
Stock Options	41,310	\$ 44.62	\$ —	1.4	41	\$ 44.62	\$ —	1.4
RSU Awards	346,039	\$ 22.29	\$ 8,291	1.6	2,092	\$ 35.30	\$ 50	N/A
RSU MSPs	20,282	\$ 19.55	\$ 115	2.0	—	\$ —	\$ —	N/A

* Weighted-average exercise price per share for options and weighted- average grant date price for RSUs.

** Weighted-average contractual remaining term in years.

The Company also grants cash settled stock unit awards to some of its international employee participants. These cash settled awards generally vest ratably over a three-year period based on the closing price of the Company's common stock at the time of vesting. As of December 31, 2022, there were 34,981 cash settled stock unit awards outstanding compared with 33,454 cash settled stock unit awards outstanding as of December 31, 2021. During 2022, the aggregate cash used to settle cash settled stock unit awards was \$0.4 million. As of December 31, 2022, the Company had \$0.3 million in accrued expenses and other current liabilities for cash settled stock unit awards compared with \$0.4 million as of December 31, 2021. Cash settled stock unit award related compensation costs for the year ended December 31, 2022 totaled \$0.4 million and were recorded entirely in selling, general and administrative expense. In 2021, cash settled stock unit award-related compensation costs totaled \$0.6 million and were recorded entirely in selling, general and administrative expense. In 2020, cash settled stock unit award-related compensation costs totaled \$0.7 million and were recorded as follows: \$0.6 million as selling, general and administrative expense and \$0.1 million as special charges related to the sale of the I&S business. The special charge amount related to the accelerated vesting of awards as a result of the transaction.

(14) Concentrations of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, short-term investments, trade receivables and contract assets. A significant portion of Company's revenue, receivables and contract assets are from customers associated with the aerospace, defense, and industrial markets. The Company performs ongoing credit evaluations of its customers including obtaining advance payments or other security when appropriate and maintains allowances for potential credit losses. For the years ended December 31, 2022, 2021, and 2020, the Company had no customers that accounted for more than 10% of its consolidated revenues.

(15) Retirement Plans

U.S. Contribution Plan

The Company offers a savings plan to eligible U.S. employees. The plan is intended to qualify under Section 401(k) of the Internal Revenue Code. Substantially all of its U.S. employees are eligible to participate in the 401(k) savings plan. Participating employees may defer a portion of their pre-tax compensation, as defined, but not more than statutory limits. Under this plan, the Company matches a specified percentage of employee contributions, and are able to make a discretionary core contribution, subject to certain limitations. The Company contributes 100% of the amount contributed by the employee, up to a maximum of 4% of the employee's earnings. Matching contributions under the updated 401(k) benefit plan vest 0% after one year, 50% after two years, and full vesting after three years of service. In the first quarter of 2020, the Company temporarily suspended the 401(k) match for certain employee populations for the year. In the first quarter of 2021 the Company reinstated the temporarily suspended 401(k) match.

The cost of the Company's 401(k) plan is outlined below (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of 401(k) plan	\$ 3,926	\$ 4,226	\$ 458

Pension & Other Post-Retirement Benefit Obligations

The Company also sponsors various defined benefit plans, and other post-retirement benefits plans, including health and life insurance, for former employees of an acquired business. These plans include significant benefit obligations which are calculated based on actuarial valuations. Key assumptions are made in determining these obligations and related net periodic benefit costs, including discount rates, mortality, and expected long-term return on plan assets.

The Company maintains a qualified noncontributory defined benefit pension plan, a nonqualified, noncontributory defined benefit supplemental pension plan, and other post-retirement benefit plans, including health and life insurance in the U.S. which are frozen. To date, the supplemental and the other post-retirement benefits plans remain unfunded. Outside of the U.S., the Company sponsors various funded and unfunded defined benefit plans. The obligations are primarily attributed to a partially funded plan in Germany and a fully funded plan in the U.K.

During fiscal year 2022, the Company made cash contributions of approximately \$0.9 million to its U.S. plans and \$3.9 million to its foreign plans. In 2023, it expects to make defined benefit plan contributions based on the minimum required funding in accordance with statutory requirements (approximately \$1.0 million in the U.S. and approximately \$3.8 million for its foreign plans). The estimates for plan funding for future periods may change as a result of the uncertainties concerning the return on plan assets, the number of plan participants, and other changes in actuarial assumptions. The Company anticipates fulfilling these commitments through the generation of cash flow from operations.

The components of net periodic benefit cost for the postretirement plans were as follows (in thousands):

	Pension Benefits			Other Post-retirement Benefits		
	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2022	2021	2020
Components of net periodic benefit cost:						
Service cost	\$ 2,351	\$ 3,235	\$ 2,812	\$ 3	\$ 3	\$ 3
Interest cost	5,352	4,019	6,958	210	160	262
Expected return on assets	(9,352)	(10,094)	(11,737)	—	—	—
Net periodic benefit cost	(1,649)	(2,840)	(1,967)	213	163	265
Net loss amortization	198	912	279	—	—	—
Prior service cost amortization	15	17	15	—	—	—
Total amortization	213	929	294	—	—	—
Net periodic benefit cost	\$ (1,436)	\$ (1,911)	\$ (1,673)	\$ 213	\$ 163	\$ 265

The weighted average assumptions used in determining the net periodic benefit cost and benefit obligations for the post-retirement plans are shown below:

	Pension Benefits			Other Post-retirement Benefits		
	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2022	2021	2020
Net periodic benefit cost:						
Discount rate – U.S.	2.41%	1.93%	2.83%	2.65 %	2.65%	3.05%
Discount rate – Foreign	1.30%	0.82%	1.24%	—	—	—
Expected return on plan assets - U.S.	4.00%	4.50%	5.50%	—	—	—
Expected return on plan assets - Foreign	2.85%	2.20%	2.95%	—	—	—
Rate of compensation increase - Foreign	3.20%	3.20%	3.20%	—	—	—
Benefit obligations:						
Discount rate – U.S.	4.86%	2.41%	1.93%	4.96 %	2.26%	2.26%
Discount rate – Foreign	3.83%	1.30%	0.82%	—	—	—
Rate of compensation increase - Foreign	3.25%	3.20%	3.20%	—	—	—

The amounts reported for net periodic benefit cost and the respective benefit obligation amounts are dependent upon the actuarial assumptions used. The Company reviews historical trends, future expectations, current market conditions, and external data to determine the assumptions. The actuarial assumptions used to determine the net periodic pension cost are based upon the prior year's assumptions used to determine the benefit obligation.

Assumed health care cost trend rates pre-65 trend at December 31, 2022 and 2021 were 7.5% and 7.5%, respectively. The rate to which the cost trend rate is assumed to decline (the ultimate trend rate) for December 31, 2022 and 2021 were 4.1% and 4.5%, respectively, and the years that the rate reaches the ultimate trend rate were 2075 and 2034, respectively. Assumed health care cost trend rates post-65 trend at December 31, 2022 and 2021 were 7.5% and 7.5%, respectively. The rate to which the cost trend rate is assumed to decline (the ultimate trend rate) for December 31, 2022 and 2021 were 4.1% and 4.5%, respectively, and the year that the rate reaches the ultimate trend rate were 2075 and 2034, respectively.

In selecting the expected long-term return on assets for the qualified and foreign plans, the Company considered the average rate of earnings expected on the funds invested or to be invested to provide for the benefits of these plans. It, with input from the plans' professional investment managers and actuaries, also considered the average rate of earnings expected on the funds invested or to be invested to provide plan benefits. This process included determining expected returns for the various asset classes that comprise the plans' target asset allocation. This basis for selecting the long-term return on assets is consistent with the prior year. Using generally accepted diversification techniques, the plans' assets, in aggregate and at the individual portfolio level, are invested so that the total portfolio risk exposure and risk-adjusted returns best meet the plans' long-term benefit obligations to employees. Plan asset allocations are reviewed periodically and rebalanced to achieve target allocation among the asset categories when necessary. This included considering the pension asset allocation and the expected returns likely to be earned over the life of the plans.

The funded status of the defined benefit post-retirement plans and amounts recognized in the consolidated balance sheets, measured as of December 31, 2022 and December 31, 2021 were as follows (in thousands):

	Pension Benefits		Other Post-retirement Benefits	
	December 31,		December 31,	
	2022	2021	2022	2021
Change in projected benefit obligation:				
Balance at beginning of year	\$ 363,810	\$ 412,834	\$ 10,244	\$ 10,893
Service cost	2,351	3,235	3	3
Interest cost	5,352	4,019	210	160
Actuarial (gain) loss (1)	(75,022)	(24,873)	(2,684)	(382)
Exchange rate (gain) loss	(9,985)	(9,597)	—	—
Benefits paid	(20,768)	(21,808)	(525)	(430)
Balance at end of year	\$ 265,738	\$ 363,810	\$ 7,248	\$ 10,244
Change in fair value of plan assets:				
Balance at beginning of year	\$ 252,777	\$ 247,821	\$ —	\$ —
Actual return on assets	(51,480)	22,375	—	—
Exchange rate (loss) gain	(3,065)	(305)	—	—
Benefits paid	(20,768)	(21,808)	(525)	(430)
Employer contributions	4,246	4,694	525	430
Fair value of plan assets at end of year (2)	\$ 181,710	\$ 252,777	\$ —	\$ —
Funded status:				
Excess of benefit obligation over the fair value of plan assets	\$ (84,028)	\$ (111,033)	\$ (7,248)	\$ (10,244)
Pension plan accumulated benefit obligation ("ABO")	\$ 265,738	\$ 363,810	—	—

(1) The changes in benefit obligations were primarily drive by changes in discount rates in both U.S. and foreign obligations.

(2) Refer to table below for further disclosure regarding the fair value of plan assets.

The fair values of the Company's pension plan assets as of December 31, 2022 and 2021 utilizing the fair value hierarchy were as follows (in thousands):

	December 31, 2022					December 31, 2021				
	Measured at Net Asset Value (1)	Level 1	Level 2	Level 3	Total	Measured at Net Asset Value (1)	Level 1	Level 2	Level 3	Total
U.S. Plans:										
Cash Equivalents:										
Money Market Funds	\$ 22	\$ 1,686	\$ —	\$ —	\$ 1,708	\$ 21	\$ 867	\$ —	\$ —	\$ 888
Mutual Funds:										
Bond Funds	35,880	—	—	—	35,880	46,956	—	—	—	46,956
Comingled Pools:										
Opportunistic	5,821	—	—	—	5,821	5,930	—	—	—	5,930
Investment Grade	73,603	—	—	—	73,603	105,217	—	—	—	105,217
Non-U.S. Equity	5,453	—	—	—	5,453	20,596	—	—	—	20,596
U.S. Equity	36,070	—	—	—	36,070	43,067	—	—	—	43,067
Global Low Volatility	1,837	—	—	—	1,837	—	—	—	—	—
Insurance Contracts	—	—	820	—	820	—	—	815	—	815
Foreign Plans:										
Cash	—	4,030	—	—	4,030	—	245	—	—	245
Equity	—	—	—	—	—	—	11,733	—	—	11,733
Non-U.S. government and corporate bonds	—	16,306	—	—	16,306	—	17,050	—	—	17,050
Insurance Contracts	—	—	—	182	182	—	—	—	280	280
Total Fair Value	\$ 158,686	\$ 22,022	\$ 820	\$ 182	\$ 181,710	\$ 221,787	\$ 29,895	\$ 815	\$ 280	\$ 252,777

(1) Certain investments that are measured at fair value using NAV have not been classified in the fair value hierarchy. These investments, consisting of common/collective trusts, are valued using the NAV provided by the Trustee. The NAV is based on the underlying investments held by the fund that are traded in an active market, less its liabilities. These investments are able to be redeemed in the near-term.

The following information is presented as of December 31, 2022 and 2021 (in thousands):

	Pension Benefits		Other Post-retirement Benefits	
	2022	2021	2022	2021
Funded status, end of year:				
Fair value of plan assets	\$ 181,710	\$ 252,777	\$ —	\$ —
Projected benefit obligation	(265,738)	(363,810)	(7,248)	(10,244)
Net pension liability	<u>\$ (84,028)</u>	<u>\$ (111,033)</u>	<u>\$ (7,248)</u>	<u>\$ (10,244)</u>
Post-retirement amounts recognized in the balance sheet consists of:				
Non-current asset	\$ 6,133	\$ 13,799	\$ —	\$ —
Current liability	(4,193)	(3,951)	(596)	(609)
Non-current liability	(85,968)	(120,881)	(6,652)	(9,635)
Total	<u>\$ (84,028)</u>	<u>\$ (111,033)</u>	<u>\$ (7,248)</u>	<u>\$ (10,244)</u>
Amounts recognized in accumulated other comprehensive loss consist of:				
Net (gains) losses	\$ (8,713)	\$ 6,375	\$ (3,121)	\$ (437)
Prior service cost	261	308	—	—
Total	<u>\$ (8,452)</u>	<u>\$ 6,683</u>	<u>\$ (3,121)</u>	<u>\$ (437)</u>

As of December 31, 2022, the benefit payments expected to be paid in each of the next five years and the aggregate for the five fiscal years thereafter were as follows (in thousands):

	2023	2024	2025	2026	2027	Thereafter
Pension Benefits - All Plans	\$ 21,644	\$ 21,287	\$ 20,780	\$ 20,314	\$ 19,757	\$ 89,726
Other Post-retirement Benefits	596	568	552	530	505	2,232
Expected benefit payments	<u>\$ 22,240</u>	<u>\$ 21,855</u>	<u>\$ 21,332</u>	<u>\$ 20,844</u>	<u>\$ 20,262</u>	<u>\$ 91,958</u>

(16) Contingencies, Commitments and Guarantees

Legal Proceedings

The Company is subject to various legal proceedings and claims pertaining to matters such as product liability or contract disputes. The Company is also subject to other proceedings and governmental inquiries, inspections, audits or investigations pertaining to issues such as tax matters, patents and trademarks, pricing, contractual issues, business practices, governmental regulations, employment and other matters. Although the results of litigation and claims cannot be predicted with certainty, the Company expects that the ultimate disposition of these matters, to the extent not previously provided for, will not have a material adverse effect, individually or in the aggregate, on its business, financial condition, results of operations or liquidity.

Asbestos-related product liability claims continue to be filed against two of the Company's subsidiaries: CIRCOR Instrumentation Technologies, Inc. (f/k/a Hoke, Inc.) ("Hoke"), the stock of which the Company acquired in 1998 and Spence Engineering Company, Inc., the stock of which the Company acquired in 1984. The Hoke subsidiary was divested in January 2020 through the sale of the I&S business. However, the Company has indemnified the buyer for asbestos-related claims that are made against Hoke. Due to the nature of the products supplied by these entities, the markets they serve and the Company's historical experience in resolving these claims, the Company does not expect that these asbestos-related claims will have a material adverse effect on the financial condition, results of operations or liquidity of the Company.

During the second quarter of 2021 the Company was notified of a contract termination by one of its Industrial segment customers. The basis for termination is under dispute and the ultimate outcome of this matter is uncertain. During the fourth quarter of 2021 the Company recorded a full allowance against the outstanding receivables resulting in a charge of \$6.3 million. The Company also has outstanding guarantees of its performance under the contract in the aggregate amount of \$3.4 million. Further, the Company is exposed to claims from sub-contractors for contract termination. During the fourth quarter of 2022, a settlement agreement was reached resulting in a total of \$4.5 million to be paid in the first half of 2023. The Company has accrued the unpaid portion of the settlement amount as of December 31, 2022.

Standby Letters of Credit

The Company executes standby letters of credit, which include bank guarantees, bid bonds, and performance bonds, in the normal course of business to ensure its performance or payments to third parties. The aggregate notional value of these instruments was \$32.4 million at December 31, 2022 of which \$24.4 million were syndicated under the Credit Agreement and \$32.5 million at December 31, 2021 of which \$24.7 million were syndicated under the Credit Agreement. Based on the Company's historical experience with these types of instruments the Company does not expect potential obligations to be material to its financial position. These instruments generally have expiration dates ranging from less than 1 month to 5 years from December 31, 2022.

During May 2022, a Russian customer drew on a letter of credit related to an equipment system in the amount of \$3.9 million, which the Company funded. The Company is contesting the draw and is pursuing actions to recover this amount from the customer.

Commercial Contract Commitments

As of December 31, 2022, the Company had approximately \$157.0 million of commercial contract commitments related to open purchase orders.

Insurance

The Company maintains insurance coverage of a type and with such limits as it believes are customary and reasonable for the risks it faces and in the industries in which it operates. While many of its policies do contain a deductible, the amount of such deductible is typically not material. The accruals for insured liabilities are not discounted and take into account these deductibles and are based on claims filed and reported as well as estimates of claims incurred but not yet reported.

Restatement of Prior Period Financial Statements and Non-Timely Filing of Financial Statements

As described in Note 2, Restatement of Previously Issued Consolidated Financial Statements, of the Company's Annual Report on Form 10-K for the year ended 2021, filed with the SEC on July 26, 2022, the Company discovered accounting irregularities in its Pipeline Engineering business going back to 2017. The Company conducted an investigation into the accounting irregularities at the Pipeline Engineering business and restated its consolidated financial statements for the annual periods of 2020 and 2019, interim and year to date periods for 2020 and interim and year to date periods for the nine months ended October 3, 2021.

The Company was unable to timely file its Annual Report on Form 10-K for 2021 and Quarterly Report on Form 10-Q for the first and second quarters of 2022 with the Securities and Exchange Commission ("the SEC"). The discovery of accounting irregularities, restatement of prior period financial statements and non-timely filing of financial statements could expose the Company to future claims and losses. The Company has self-reported the identified accounting irregularities at the Pipeline Engineering business to the SEC and the Company continues to respond to requests for information from the SEC.

(17) Guarantees and Indemnification Obligations

As permitted under Delaware law, the Company has agreements whereby it indemnifies certain of our officers and directors for certain events or occurrences while the officer or director is, or was, serving at our request in such capacity. The term of the indemnification period is for the officer's or director's lifetime. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited. However, the Company has directors and officers liability insurance policies that limit our exposure for events covered under the policies and should enable us to recover a portion of any future amounts paid. As a result of the coverage under these insurance policies, the Company believes the estimated fair value of these indemnification agreements is minimal and, therefore, have no liabilities recorded from those agreements as of December 31, 2022.

The Company records provisions for the estimated cost of product warranties, primarily from historical information, at the time product revenue is recognized. While the Company engages in extensive product quality programs and processes, our warranty obligation is affected by product failure rates, utilization levels, material usage, service delivery costs incurred in correcting a product failure, and supplier warranties on parts delivered to us. Should actual product failure rates, utilization levels, material usage, service delivery costs or supplier warranties on parts differ from our estimates, revisions to the estimated warranty liability would be required. Our warranty liabilities are included in accrued expenses and other current liabilities on our consolidated balance sheets.

The following table sets forth information related to our product warranty reserves for the years ended December 31, 2022 and 2021 (in thousands):

	December 31,	
	2022	2021
Balance beginning January 1	\$ 2,739	\$ 2,206
Provisions	2,181	3,629
Claims settled	(2,302)	(3,040)
Currency translation adjustment	(97)	(56)
Balance ending December 31	<u>\$ 2,521</u>	<u>\$ 2,739</u>

For the year ended December 31, 2022, decreases in warranty obligations were primarily driven by provisions and claims within our Refinery Valves, Industrial Pumps North America, and Industrial Pumps EMEA businesses.

(18) Business Segment and Geographical Information

The Company's reportable segments have been identified in accordance with ASC Topic 280-10-50 through its evaluation of how it engages in business activities to earn revenues and incur expenses, which operating results are regularly reviewed by its chief operating decision maker ("CODM") to assess performance and make decisions about resources to be allocated, and the availability of discrete financial information. CIRCOR's reportable segments are generally organized based upon the end markets it sells its products and services into. No individual operating segments have been aggregated for purposes of determining the reportable segments. The reporting segments are Industrial and Aerospace & Defense.

Each reporting segment is individually managed, as each requires different technology and marketing strategies, and has separate financial results that are reviewed by the Company's CODM. The CODM evaluates segment performance and determines how to allocate resources utilizing, among other data, segment operating income. Segment operating income excludes special and restructuring charges, net. In addition, certain administrative expenses incurred at the corporate level for the benefit of the reporting segments are allocated to the segments based upon specific identification of costs, employment related information or net revenues. Each segment contains related products and services particular to that segment.

Corporate is reported on a net "after allocations" basis. Inter-segment intercompany transactions affecting net operating profit have been eliminated within the respective reportable segments.

The amounts reported in the Corporate expenses line item in the following table consists primarily of the following: compensation and fringe benefit costs for executive management and other corporate staff; Board of Director compensation; corporate development costs (relating to mergers and acquisitions); human resource development and benefit plan administration expenses; legal, accounting and other professional and consulting costs; facilities, equipment and maintenance costs; and travel and various other administrative costs related to the corporate office and respective functions. The above costs are incurred in the course of furthering the business prospects of the Company and relate to activities such as: implementing strategic business growth opportunities; corporate governance; risk management; tax; treasury; investor relations and shareholder services; regulatory compliance; strategic tax planning; and stock transfer agent costs.

The Company's CODM evaluates segment operating performance using segment operating income. Segment operating income is defined as GAAP operating income excluding intangible amortization and amortization of fair value step-ups of inventory and fixed assets from acquisitions completed subsequent to December 31, 2011, the impact of restructuring related inventory write-offs, impairment charges and special charges or gains. The Company also refers to this measure as adjusted operating income. The Company uses this measure because it helps management understand and evaluate the segments' core operating results and facilitate comparison of performance for determining incentive compensation achievement.

The following table presents certain reportable segment information (in thousands):

	As of and for the year ended December 31,		
	2022	2021	2020
<u>Net revenues</u>			
Industrial	\$ 504,204	\$ 506,126	\$ 499,209
Aerospace & Defense	282,715	252,541	266,010
Consolidated revenues	<u>\$ 786,919</u>	<u>\$ 758,667</u>	<u>\$ 765,219</u>
<u>Segment income</u>			
Aerospace & Defense - Segment Operating Income	63,584	56,073	58,379
Industrial - Segment Operating Income	49,302	28,896	27,025
Corporate expenses	(25,384)	(30,638)	(30,378)
Subtotal	87,502	54,331	55,026
Special restructuring charges, net	11,066	4,234	4,945
Special other (recoveries) charges, net	(30,079)	20,038	(39,248)
Special and restructuring (recoveries) charges, net	(19,013)	24,272	(34,303)
Restructuring related inventory charges (recoveries), net	2,757	599	(251)
Acquisition amortization	36,338	41,772	42,463
Acquisition depreciation	4,614	6,511	3,986
Goodwill impairment charges	—	10,500	138,078
Restructuring, impairment and other cost, net	43,709	59,382	184,276
Consolidated operating income (loss)	<u>62,806</u>	<u>(29,323)</u>	<u>(94,947)</u>
Interest expense, net	44,886	32,365	34,219
Other income, net	(5,747)	(3,826)	(1,594)
Income (loss) from continuing operations before income taxes	<u>\$ 23,667</u>	<u>\$ (57,862)</u>	<u>\$ (127,572)</u>
<u>Identifiable assets</u>			
Industrial	\$ 1,261,996	\$ 1,256,974	\$ 1,328,179
Aerospace & Defense	557,018	464,964	451,612
Corporate	(806,327)	(702,640)	(696,934)
Consolidated identifiable assets	<u>\$ 1,012,687</u>	<u>\$ 1,019,298</u>	<u>\$ 1,082,857</u>
<u>Capital expenditures</u>			
Industrial	\$ 14,304	\$ 9,502	\$ 6,928
Aerospace & Defense	6,704	4,608	4,400
Corporate	2,007	467	466
Consolidated capital expenditures	<u>\$ 23,015</u>	<u>\$ 14,577</u>	<u>\$ 11,794</u>
<u>Depreciation and amortization</u>			
Industrial	\$ 44,914	\$ 52,532	\$ 50,961
Aerospace & Defense	10,477	11,973	12,492
Corporate	660	653	610
Consolidated depreciation and amortization	<u>\$ 56,051</u>	<u>\$ 65,158</u>	<u>\$ 64,063</u>

The total assets for each reportable segment have been reported as the Identifiable Assets for that segment, including inter-segment intercompany receivables, payables and investments in other CIRCOR companies. Identifiable assets reported in Corporate include both corporate assets, such as cash, deferred taxes, prepaid and other assets, fixed assets, as well as the elimination of all inter-segment intercompany assets. The elimination of intercompany assets results in negative amounts reported in Corporate for Identifiable Assets. Corporate Identifiable Assets after elimination of intercompany assets were \$8.8 million, \$13.6 million, and \$12.1 million as of December 31, 2022, 2021, and 2020, respectively.

The following tables present net revenue and long-lived assets by geographic area. The net revenue amounts are based on shipments to each of the respective areas (in thousands).

Net revenues by geographic area	Year Ended December 31,		
	2022	2021	2020
United States	\$ 349,296	\$ 309,475	\$ 340,705
Germany	86,381	90,407	81,315
France	39,830	38,777	36,616
China	34,709	36,759	27,036
United Kingdom	29,661	32,341	33,439
Canada	23,622	16,421	18,413
Norway	10,175	10,391	12,765
Saudi Arabia	6,214	5,375	5,628
Russia	418	5,179	4,893
Rest of Europe	76,952	85,107	82,417
Rest of Asia-Pacific	95,067	89,186	80,112
Other	34,594	39,249	41,880
Total net revenues	<u>\$ 786,919</u>	<u>\$ 758,667</u>	<u>\$ 765,219</u>

Long-lived assets by geographic area	December 31,	
	2022	2021
United States	\$ 67,329	\$ 78,472
Germany	51,851	48,228
UK	5,701	9,781
India	6,558	7,196
France	3,414	3,621
Other	6,288	7,163
Total long-lived assets	<u>\$ 141,141</u>	<u>\$ 154,461</u>

(19) Other (Income) Expense, Net

The following table outlines other (income) expense, net (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Pension - Interest cost	\$ 5,352	\$ 4,019	\$ 6,958
Pension - Expected return on assets	(9,352)	(10,094)	(11,737)
Foreign Currency Translations	(2,236)	898	1,745
Other	489	1,351	1,440
Other income, net	<u>\$ (5,747)</u>	<u>\$ (3,826)</u>	<u>\$ (1,594)</u>

(20) Accumulated Other Comprehensive Loss

The following table summarizes the changes in accumulated other comprehensive loss, net of tax, which is reported as a component of total shareholders' equity, for the years ended December 31, 2022, 2021, and 2020 (in thousands):

	Foreign Currency Translation Adjustments (1)	Pension, net	Derivative	Total
Balance as of December 31, 2019	\$ (54,526)	\$ (19,513)	\$ (6,906)	\$ (80,945)
Other comprehensive income (loss)	4,466	(13,846)	1,196	(8,184)
Balance as of December 31, 2020	(50,060)	(33,359)	(5,710)	(89,129)
Other comprehensive income (loss)	(4,372)	38,303	6,398	40,329
Balance as of December 31, 2021	(54,432)	4,944	688	(48,800)
Other comprehensive income (loss)	(12,455)	17,834	(688)	4,691
Balance as of December 31, 2022	\$ (66,887)	\$ 22,778	\$ —	\$ (44,109)

(1) The Foreign Currency Translation Adjustment activity as of December 31, 2022 includes the deconsolidation and recognition into earnings of the related cumulative translation adjustment out of accumulated other comprehensive loss in the amount of \$5.3 million related to the Catterick, UK entity of the Pipeline Engineering business placed into Administration under UK Insolvency Act of 1986 and the Insolvency (England and Wales) Rules 2016 (IR 2016).

DESCRIPTION OF SECURITIES REGISTERED UNDER SECTION 12 OF THE EXCHANGE ACT

The following description of the common stock, par value \$0.01 per share (the “Common Stock”) of CIRCOR International, Inc. (“us,” “our,” “we” or the “Company”), which is the only security of the Company registered under Section 12 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), summarizes certain information regarding the Common Stock in our Amended and Restated Certificate of Incorporation, as amended (the “Certificate of Incorporation”), our Third Amended and Restated By-Laws (the “Bylaws”) and applicable provisions of Delaware General Corporation Law (the “DGCL”), and is qualified by reference to the Certificate of Incorporation and the Bylaws, which are incorporated by reference as Exhibit 3.1 and Exhibit 3.2, respectively, to the Annual Report on Form 10-K of which this Exhibit 4.1 is a part.

Authorized Capital Stock

Our authorized capital stock consists of 29,000,000 shares of Common Stock and 1,000,000 shares of preferred stock, par value \$0.01 per share (the “Preferred Stock”).

Common Stock

Voting Rights. Each holder of Common Stock is entitled to one vote for each share held of record on all matters to be voted upon by stockholders, unless otherwise provided by law or by our Certificate of Incorporation. When a quorum is present at any meeting of stockholders, matters before the meeting other than an election to office shall be decided by a majority of the votes cast on such matter, except where a larger vote is required by law, the Certificate of Incorporation or the Bylaws. Except in a contested election, any election of directors by stockholders shall be determined by a majority of the votes cast at such meeting in favor of the nominee. In a contested election, a director shall be elected by a plurality of the votes cast at such meeting. A contested election shall be one in which there are more nominees than positions on the board of directors to be filled at the meeting as of the fifth day prior to the date on which we file our definitive proxy statement with the Securities and Exchange Commission.

Dividends. Subject to the rights, powers and preferences of any outstanding Preferred Stock, and except as provided by law or in our Certificate of Incorporation, dividends may be declared and paid or set apart for payment upon the Common Stock out of legally available assets or funds when and as declared by the board of directors.

Liquidation, Dissolution or Winding Up. Subject to the rights, powers and preferences of any outstanding Preferred Stock, in the event of our liquidation, dissolution or winding up, our net assets will be distributed pro rata to the holders of Common Stock.

Other Rights. Holders of the Common Stock have no right to:

- convert the stock into any other security;
- have the stock redeemed;
- purchase additional stock; or
- maintain their proportionate ownership interest.

The Common Stock does not have cumulative voting rights. Holders of shares of the Common Stock are not required to make additional capital contributions.

Provisions of Our Certificate of Incorporation and Bylaws and Delaware Law That May Have Anti-Takeover Effects

Board of Directors. The number of directors comprising our board of directors is fixed from time to time by the board of directors. Prior to our 2020 annual meeting of stockholders, our board of directors was divided into three classes, with directors of each class elected to serve a three-year term. At the 2020 annual meeting of stockholders, our stockholders approved an amendment to the Certificate of Incorporation eliminating the classified board structure. Beginning at the 2022 annual meeting of stockholders (and at each annual meeting thereafter), all directors will be elected to a one-year term.

Removal of Directors by Stockholders. Our Certificate of Incorporation provides that, subject to the rights, if any, of any series of Preferred Stock, any director may be removed from office with or without cause by the affirmative vote of the holders of a majority of the shares then entitled to vote at an election of directors.

Advance Notice Provisions. Our Bylaws provide that a stockholder must notify us in writing, within timeframe and following the procedures specified in the Bylaws, of any stockholder nomination of a director and of any other business that the stockholder intends to bring at a meeting of stockholders.

No Action By Written Consent. Our Certificate of Incorporation provides that our stockholders may not act by written consent and may only act at duly called meetings of stockholders.

Special Meetings of Stockholders. Except as otherwise required by law and subject to the rights, if any, of the holders of any series of Preferred Stock, special meetings of stockholders may be called only by the board of directors.

Preferred Stock. We are authorized to issue up to 1,000,000 shares of “blank check” Preferred Stock, which may be issued in one or more series upon authorization of our board of directors. Our board of directors is authorized to fix the designations, powers, preferences and the relative, participating, optional or other special rights, and any qualifications, limitations and restrictions of the shares of each series of Preferred Stock. A series of our Preferred Stock could, depending on the terms of such series, impede the completion of a merger, tender offer or other takeover attempt. Our board of directors will make any determination to issue shares of Preferred Stock based upon its judgment as to the best interests of our stockholders. Our directors, in so acting, could issue Preferred Stock having terms that could discourage an acquisition attempt through which an acquirer may be able to change the composition of our board of directors, including a tender offer or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which stockholders might receive a premium for their stock over the then-current market price of the stock.

Delaware Business Combination Statute. Section 203 of the DGCL is applicable to us. Section 203 of the DGCL restricts some types of transactions and business combinations between a corporation and a 15% stockholder. A 15% stockholder is generally considered by Section 203 to be a person owning 15% or more of the corporation's outstanding voting stock. Section 203 refers to a 15% stockholder as an "interested stockholder." Section 203 restricts these transactions for a period of three years from the date the stockholder acquires 15% or more of our outstanding voting stock. With some exceptions, unless the transaction is approved by the board of directors and the holders of at least two-thirds of the outstanding voting stock of the corporation, Section 203 prohibits significant business transactions such as:

- a merger with, disposition of significant assets to or receipt of disproportionate financial benefits by the interested stockholder, and
- any other transaction that would increase the interested stockholder's proportionate ownership of any class or series of our capital stock.

The shares held by the interested stockholder are not counted as outstanding when calculating the two-thirds of the outstanding voting stock needed for approval.

The prohibition against these transactions does not apply if:

- prior to the time that any stockholder became an interested stockholder, the board of directors approved either the business combination or the transaction in which such stockholder acquired 15% or more of our outstanding voting stock, or
- the interested stockholder owns at least 85% of our outstanding voting stock as a result of a transaction in which such stockholder acquired 15% or more of our outstanding voting stock. Shares held by persons who are both directors and officers or by some types of employee stock plans are not counted as outstanding when making this calculation.

Exclusive Forum Selection. Our Bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if the Court of Chancery of the State of Delaware does not have jurisdiction, the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of the Company, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, other employee or stockholder of the Company to the Company or the Company's stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware, or (iv) any action asserting a claim arising pursuant to any provision of our Certificate of Incorporation or our Bylaws or governed by the internal affairs doctrine; provided, however, that this exclusive forum provision shall not apply to claims arising under the Securities Act of 1933, the Securities Exchange Act of 1934 or any claim for which the federal courts have exclusive jurisdiction. In addition, unless the Company consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the sole and exclusive forum for the resolution of any claims arising under the Securities Act of 1933.

CIRCOR International, Inc. Exhibit 21
SCHEDULE OF SUBSIDIARIES – As of 12/31/2022

I. Subsidiaries of CIRCOR International, Inc.:

1. CIRCOR Dutch Holdings B.V., a Netherlands company.
2. CIRCOR (Jersey) Ltd., a Jersey Company* (82.7% ownership)
3. CIRCOR Aerospace, Inc., a Delaware Corporation
4. CIRCOR Energy, LLC, a Delaware limited liability company*
5. CIRCOR France SAS, a French Corporation*
6. Leslie Controls, Inc., a Delaware Corporation
7. Spence Engineering Company, Inc., a Delaware Corporation*
8. CIRCOR German Holdings Management GmbH, a German Closed Corporation*
10. Downstream Holding, LLC, a Delaware Limited Liability Company
11. CIRCOR Naval Solutions, LLC, a Delaware Limited Liability Company
12. CIRCOR Precision Metering, LLC, a Delaware Limited Liability Company
13. CIRCOR Pumps North America, LLC, a Delaware Limited Liability Company
14. CIRCOR Holdings, Inc., a Delaware Corporation*
15. IMO Industries (Canada) ULC, an Alberta company
16. CIRCOR Pipeline Engineering, LLC, a Delaware Limited Liability Company*
17. CIRCOR LLC, a Massachusetts Limited Liability Company

II. Subsidiaries of CIRCOR Dutch Holdings B.V.:

1. CIRCOR Pump (Weihai) Company Limited, a Chinese Foreign Owned Enterprise*
2. CIRCOR Netherlands II Holding B.V., a Netherlands company
3. Allweiler India Private Limited, an Indian company (99.999%)
4. Colfax Fluid Handling Middle East Ltd., and England and Wales company*

III. Subsidiaries of CIRCOR Netherlands II Holding B.V.:

1. Houttuin B.V., a Netherlands company*

IV. Subsidiaries of IMO Industries (Canada) ULC

1. CIRCOR Luxembourg Holdings Sarl, a Luxembourg Limited Liability Company (78.8476%)

V. Subsidiaries of CIRCOR Aerospace, Inc.:

1. CIRCOR IP Holdings Co., a Delaware Corporation*

VI. Subsidiaries of CIRCOR Energy, LLC

1. CIRCOR Energy Products, LLC., an Oklahoma Limited Liability Company*
2. CIRCOR Mexico, S.A. de C.V., a Mexico Corporation* (99%)
3. CIRCOR Empleados de Mexico S.A. de C.V., a Mexico Corporation* (99%)

VII. Subsidiaries of CIRCOR (Jersey), Ltd.

1. CIRCOR German Holdings, LLC, a Delaware Limited Liability Company
2. CIRCOR Singapore Pte Ltd, a Singapore Private Limited Company*

VIII. Subsidiaries of CIRCOR German Holdings, LLC

1. CIRCOR German Holdings GmbH & Co. KG, a German Private Company*

IX. Subsidiaries of CIRCOR German Holdings GmbH & Co. KG

1. Regeltechnik Kornwestheim GmbH, a German Corporation
2. SCHROEDAHL-ARAPP Spezialarmaturen GmbH & Co. KG, a German Corporation

3. Allweiler GmbH (Germany)

X. Subsidiaries of CIRCOR Luxembourg Holdings, Sarl.

1. Howitzer Acquisition Limited, a United Kingdom Corporation
2. CIRCOR India Holdings BV, a Netherlands Corporation
3. CIRCOR Middle East FZE, a United Arab Emirates Corporation*
4. CIRCOR do Brasil Participações LTDA, a Brazilian Corporation*
5. CIRCOR (Barbados) Holdings SARL, a Barbados Company*

XI. Subsidiaries of CIRCOR Do Brasil Participações LTDA.

1. CIRCOR do Brasil Industria e Comercio LTDA, a Brazilian Corporation*

XII. Subsidiaries of Howitzer Acquisition Limited

1. Hale Hamilton (Valves) Limited, a United Kingdom Corporation
2. Pipeline Engineering & Supply Co., Limited, a United Kingdom Corporation
3. TapcoEnpro UK Limited, a United Kingdom Company*

XIII. Subsidiaries of CIRCOR India Holdings BV

1. CIRCOR India LLC, a Delaware Limited Liability Company*
2. CIRCOR Flow Technologies India Private Ltd, an Indian Private Company

XIV. Subsidiaries of CIRCOR France

1. CIRCOR Maroc, a Moroccan Corporation
2. CIRCOR Industria, a French Corporation

XV. Subsidiaries of Downstream Holding, LLC

1. TapcoEnpro, LLC, a Delaware Limited Liability Company
2. DeltaValve, LLC, a Delaware Limited Liability Company

XVI. Subsidiaries of Hale Hamilton (Valves) Limited

1. CIRCOR Energy Gulf Arabia, a United Arab Emirates Corporation (75%)

XVII. Subsidiaries of Pipeline Engineering Supply Co., Limited

1. Pipeline Engineering Ltd, a Singapore company
2. Pipeline Engineering Ltd. a United Arab Emirates Corporation

XVIII. Subsidiaries of CIRCOR Holdings, Inc.

1. CIRCOR Netherlands Holdings B.V., a Netherlands Limited Liability Company*

XIX. CIRCOR Netherlands Holdings B.V.

1. Suzhou Circor Valve Company, Ltd, a China company*

XX. Subsidiaries of Allweiler GmbH

1. Allweiler A/S, a Norway company
2. CIRCOR Imo Allweiler, a French company*
3. Allweiler Finland Oy AB, a Finland company*
4. CIRCOR Allweiler Imo S.r.l., an Italy company
5. IMO AB, a Sweden company
6. PD-Technik Ingenieurbüro GmbH, a German corporation*
7. CIRCOR (Shanghai) Trading Co., Ltd.

XXI. Subsidiaries of CIRCOR Naval Solutions, LLC

1. CIRCOR Sub Holding LLC, a Delaware limited liability company

XXII. Subsidiaries of CIRCOR Sub Holding LLC

1. Portland Valve LLC, a Delaware limited liability company
2. CIRCOR Sub Ltd., an England and Wales company

*Subsidiaries designated as Immaterial Subsidiaries

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

1. Registration Statement (Form S-8 No. 333-197754) pertaining to the CIRCOR International, Inc. Stock Option Inducement Award and 2014 Stock Option and Incentive Plan,
2. Registration Statement (Form S-8 No. 333-231466) pertaining to the CIRCOR International, Inc. 2019 Stock Option and Incentive Plan, and
3. Registration Statements (Form S-8 No. 333-258689) pertaining to the CIRCOR International, Inc. 2019 Stock Option and Incentive Plan, as amended;

of our reports dated March 15, 2023 with respect to the consolidated financial statements of CIRCOR International, Inc. and the effectiveness of internal control over financial reporting of CIRCOR International, Inc. included in this Annual Report (Form 10-K) of CIRCOR International, Inc. for the year ended December 31, 2022.

/s/ Ernst & Young LLP
Boston, Massachusetts
March 15, 2023

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Tony Najjar, certify that:

1. I have reviewed this annual report on Form 10-K of CIRCOR International, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2023

Signature: _____

/s/ Tony Najjar

Tony Najjar

**President and Chief Executive Officer
Principal Executive Officer**

CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Arjun Sharma, certify that:

1. I have reviewed this annual report on Form 10-K of CIRCOR International, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 15, 2023

Signature:

/s/ Arjun Sharma

Arjun Sharma

**Chief Financial Officer and Senior Vice President Business Development
(Principal Financial Officer)**

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

The undersigned officers, who are the President and Chief Executive Officer and Senior Vice President and Chief Financial Officer of CIRCOR International, Inc. (the “Company”), each hereby certifies to the best of their knowledge, that the Company’s annual report on Form 10-K to which this certification is attached (the “Report”), as filed with the Securities and Exchange Commission on the date hereof, fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Tony Najjar

Tony Najjar

**President and Chief Executive Officer
(Principal Executive Officer)**

March 15, 2023

/s/ Arjun Sharma

Arjun Sharma

**Chief Financial Officer and Senior Vice President Business
Development
(Principal Financial Officer)**

March 15, 2023