MODINE MANUFACTURING CO
Form 10-K
May 24, 2018

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

FORM 10-K

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

For the fiscal year ended March 31, 2018

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 1-1373

MODINE MANUFACTURING COMPANY
(Exact name of registrant as specified in its charter)

WISCONSIN	39-0482000
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1500 DeKoven Avenue, Racine, Wisconsin	53403
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code (262) 636 1200

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.625 par value	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 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 such shorter period that the registrant was

required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes No

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

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

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

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

If an emerging growth company, indicate by checkmark if the registrant has not elected 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.

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

Approximately 97 percent of the outstanding shares are held by non-affiliates. The aggregate market value of these shares was approximately $941 million based upon the market price of $19.25 per share on September 29, 2017, the last business day of our most recently completed second fiscal quarter. Shares of common stock held by each executive officer and director and by each person known to beneficially own more than 10 percent of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. The determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of shares outstanding of the registrant's common stock, $0.625 par value, was 50,502,209 at May 18, 2018.

An Exhibit Index appears at pages 81-83 herein.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the following documents are incorporated by reference into the parts of this Form 10 K designated to the right of the document listed.

Incorporated Document	Location in Form 10-K
Proxy Statement for the 2018 Annual Meeting of Shareholders	Part III of Form 10-K (Items 10, 11, 12, 13, 14)

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PART I

ITEM 1. BUSINESS.

Modine Manufacturing Company specializes in providing innovative thermal management solutions to diversified global markets and customers. We are a leading provider of engineered heat transfer systems and high-quality heat transfer components for use in on- and off-highway original equipment manufacturer ("OEM") vehicular applications. In addition, we are a global leader in thermal management technology and solutions for sale into a wide array of commercial, industrial, and building heating, ventilating, air conditioning, and refrigeration ("HVAC&R") markets. Our primary product groups include i) powertrain cooling and engine cooling; ii) coils, coolers, and coatings; and iii) heating, ventilation and air conditioning. Our primary customers across the globe include:

- Automobile, truck, bus, and specialty vehicle OEMs;
- Agricultural, industrial and construction equipment OEMs;
- Commercial and industrial equipment OEMs;
- Heating, ventilation and cooling OEMs;
- Construction architects and contractors; and
- Wholesalers of heating equipment.

We focus our development efforts on solutions that meet the ever-increasing heat transfer needs of OEMs and other customers within the automobile, commercial vehicle, construction, agricultural, industrial and HVAC&R industries. Our products and systems are aimed at solving complex heat transfer challenges requiring effective thermal management. Typical customer and market demands include products and systems that are lighter weight, more compact, more efficient and more durable to meet customer standards as they work to ensure compliance with increasingly stringent global emissions, fuel economy and energy efficiency requirements. Our heritage provides a depth and breadth of expertise in thermal management, which, when combined with our global manufacturing presence, standardized processes, and state-of-the-art technical resources, enables us to rapidly bring highly-valued, customized solutions to our customers.

History

Modine was incorporated under the laws of the State of Wisconsin on June 23, 1916 by its founder, Arthur B. Modine. Mr. Modine's "Turbotube" radiators became standard equipment on the famous Ford Motor Company Model T. When he died at the age of 95, A.B. Modine had personally been granted more than 120 U.S. patents for his heat transfer innovations. The standard of innovation exemplified by A.B. Modine remains the cornerstone of Modine today.

Terms and Year References

When we use the terms "Modine," "we," "us," the "Company," or "our" in this report, unless the context otherwise requires, w are referring to Modine Manufacturing Company. Our fiscal year ends on March 31 and, accordingly, all references to a particular year mean the fiscal year ended March 31 of that year, unless indicated otherwise.

Business Strategy and Results

Modine pursues market leadership by being a customer-focused, global company delivering exceptional quality, innovation and value. We will grow our core business of thermal management with superior technical solutions in systems, products and services – coupled with a cost competitive structure.

During fiscal 2018, we successfully integrated our recently-acquired Luvata Heat Transfer Solutions (“Luvata HTS”) business, which now operates as our Commercial and Industrial Solutions (“CIS”) segment. This acquisition, which was completed in the third quarter of fiscal 2017, was particularly key in achieving our “Diversify” and “Grow” objectives within our Strengthen, Diversify and Grow (“SDG”) strategic transformation initiative launched in fiscal 2016. Through this acquisition, we successfully broadened our customer base, increased our presence in non-vehicular markets, and grew our company with CIS segment net sales of $620 million in fiscal 2018. In addition, we’ve continued strengthening our company through ongoing cost-containment initiatives and the expansion of our low-cost country manufacturing footprint. Looking ahead, we are confident that our SDG strategy will keep us grounded, thriving, and transforming.

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Our top five customers are in three different markets – automotive, commercial vehicle, and off-highway – and our ten largest customers accounted for 48 percent of our fiscal 2018 sales. In fiscal 2018, 61 percent of our total sales were generated from customers outside of the U.S., with 56 percent of these sales generated by foreign operations and 5 percent generated by exports from the U.S. In fiscal 2017, 62 percent of our total sales were generated from customers outside of the U.S., with 55 percent of these sales generated by foreign operations and 7 percent generated by exports from the U.S. In fiscal 2016, 63 percent of our total sales were generated from customers outside of the U.S., with 54 percent of these sales generated by foreign operations and 9 percent generated by exports from the U.S.

During fiscal 2018, our consolidated net sales were $2.10 billion, a 40 percent increase from $1.50 billion in fiscal 2017. This increase was primarily due to $442 million of additional sales from our CIS segment, which we owned for four months of the prior fiscal year, and higher sales in all of our other operating segments. Our operating income of $92 million in fiscal 2018 represents a $50 million improvement compared with the prior year, primarily due to $18 million of additional operating income contributed by our CIS segment and higher earnings in the Americas, Asia and Building HVAC ("BHVAC") segments.

In continued support of our SDG initiatives and in an effort to optimize our cost structure and improve the efficiency of our operations, we have engaged in various restructuring activities. As a result, we recorded $16 million of restructuring expenses during fiscal 2018, primarily related to severance expenses and equipment transfer and plant consolidation activities.

A key metric by which we measure our performance is return on average capital employed ("ROACE"). We define ROACE as operating income, plus restructuring expenses, acquisition-related costs and adjustments, impairment charges, and excluding certain other gains or charges, less income tax at a 30 percent rate and earnings attributable to noncontrolling interest; divided by the average of debt plus Modine shareholders' equity. Our ROACE increased 140 basis points in fiscal 2018 to 8.6 percent compared with 7.2 percent in fiscal 2017. This increase was primarily due to improved earnings, partially offset by an increase in average capital employed.

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ROACE is not a measure derived under generally accepted accounting principles (“GAAP”) and should not be considered as a substitute for any measure derived in accordance with GAAP. We believe that ROACE provides investors with helpful information about our performance, our ability to provide an acceptable return on capital, and our ability to fund future growth. This measure may not be comparable with similar measures presented by other companies. The following schedule provides a reconciliation of ROACE to net earnings, as presented in accordance with GAAP:

(in millions)	Fiscal 2018	Fiscal 2017
Net earnings	$ 23.8	$ 14.9
Restructuring expenses	16.0	10.9
Acquisition-related costs and adjustments	4.3	19.1
Strategy consulting fees	3.7	-
Impairment charges	2.5	-
Environmental and legal charges	1.4	1.9
Gain on sale of facilities	-	(2.0)
Interest expense	25.6	17.2
Other expense (net)	3.3	4.3
Provision for income taxes	39.5	5.9
Subtotal	120.1	72.2
Tax applied at 30% rate	(36.0)	(21.7)
Noncontrolling interest	(1.6)	(0.7)
Net earnings - adjusted	$ 82.5	$ 49.8
Average capital employed (see calculation below)	$ 962.5	$ 696.1
ROACE	8.6 %	7.2 %
Capital employed (debt + Modine shareholders' equity):		
Beginning of fiscal year	$ 924.9	$ 538.8
June 30	980.5	552.4
September 30	988.0	552.9
December 31	949.6	911.6
End of fiscal year	969.5	924.9
Average capital employed (a)	$ 962.5	$ 696.1

(a) Average capital employed represents the sum of capital employed for the five most recent quarter-end dates, divided by five.

Markets

We sell products to multiple end markets. Our Americas, Europe, and Asia segments represent our vehicular businesses and our CIS and BHVAC segments represent our industrial businesses. The following is a summary of our primary end markets, categorized as a percentage of our net sales:

	Fiscal 2018	Fiscal 2017
Our Vehicular Businesses:		
Automotive	25 %	31 %
Commercial vehicle	18 %	25 %
Off-highway	13 %	13 %

Other vehicular	2	%	4	%
Our Industrial Businesses:				
Commercial & residential air conditioning	18	%	9	%
Commercial refrigeration	8	%	4	%
Other HVAC&R (a)	16	%	14	%

(a) Includes North America coils sales in our Americas segment.

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Competitive Position

We compete with many manufacturers of heat transfer and HVAC&R products, some of which are divisions of larger companies. The markets for our products continue to be very dynamic. Our traditional OEM customers are faced with dramatically increased international competition and have expanded their global manufacturing footprints to compete in local markets. In addition, consolidation within the supply base and vertical integration has introduced new or restructured competitors to our markets. Some of these market changes have caused us to experience competition from suppliers in other parts of the world that enjoy economic advantages such as lower labor costs, lower healthcare costs, and lower tax rates. As a result, we have expanded and continue to expand our geographic footprint, in part to provide more flexibility to serve our customers around the globe. Many of our customers also continue to ask us, as well as their other primary suppliers, to provide research and development ("R&D"), design, and validation support for new potential projects. This combined work effort often results in stronger customer relationships and more partnership opportunities for us.

Business Segments

Prior to and including fiscal 2018, we assigned specific operations to segments based principally upon defined markets and geographic locations. Each operating segment is managed by a vice president and has separate financial results reviewed by our chief operating decision maker. These results are used by management in evaluating the performance of each business segment and in making decisions on the allocation of resources among our various businesses. Effective April 1, 2018, we combined our Americas, Europe, and Asia segment operations with the objective of operating as a more global, product-based organization. As part of this segment combination and our CIS integration activities, we also merged our Americas coils business into the CIS segment and expect to achieve operational improvements and organizational efficiencies as a result. Beginning for fiscal 2019, we will report financial results for the new Vehicular Thermal Solutions segment, which will include the current Americas, Europe and Asia segments. Financial information for our operating segments is included in Note 20 of the Notes to Consolidated Financial Statements.

Our Vehicular Businesses

Americas, Europe, and Asia Segments

The continued globalization of our vehicular customer base requires us to manage our strategic approach, product offerings and the competitive environment on a global basis. This trend offers significant opportunities for us with our market positioning, including our presence in key vehicular markets (U.S., Mexico, Brazil, Europe, India, China, South Korea, and Japan) and a global organization with the expertise to solve technical challenges. We are recognized for having strong technical support in all regions, an extensive product portfolio, and the ability to provide global standard designs for our customers. Many vehicular OEMs continue to expect cost reductions from suppliers while requiring a consistent level of quality. In addition, these OEMs seek new technology solutions at low prices for their thermal management needs. In general, this creates challenges for us and the entire supply base, but also provides an opportunity for suppliers, like Modine, who develop innovative solutions at a competitive cost.

Each of our main vehicular competitors, AKG Group, BorgWarner, Dana Corporation, Denso Corporation, Mahle, Tata Toyo, TitanX, T. Rad Co. Ltd., UFI Filters, Valeo SA, Hanon Systems, and Zhejiang Yinlun Machinery Co. Ltd., have a multi-regional or worldwide presence. Increasingly, we face heightened competition as these competitors expand their product offerings and manufacturing footprints through expansion into lower-cost countries or lower-cost sourcing initiatives. In addition, competitors from some lower-cost regions are beginning to expand into new geographical markets.

The Americas, Europe, and Asia segments represent our vehicular businesses and serve the automotive, commercial vehicle, and off-highway markets. The following summarizes the primary markets served by our vehicular segments:

Automotive

Market Overview – The automotive market declined slightly during fiscal 2018. We expect moderate growth in fiscal 2019. This growth is supported longer term by changes in global fuel efficiency standards, in-vehicle technology enhancements and growth in emerging markets. We are seeing increased activity in the automotive market on alternative powertrains, such as electric, hybrid, and fuel cell. Global automotive OEMs and their powertrain suppliers are engaged in significant development activities for these alternative powertrains. In addition, a number of start-up companies specializing in electric vehicles are working towards establishing themselves in the marketplace which creates new business dynamics and opportunities. We are actively involved in developing and manufacturing solutions for these alternative powertrains. At the same time, we remain focused on programs for traditional internal combustion engines which will remain as the primary automotive powertrain for years to come. We expect our global automotive production to increase in fiscal 2019, particularly driven by market improvements and maturing program volumes in China and new program launches in our Americas, Europe, and Asia segments.

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Products – Powertrain cooling (engine cooling assemblies, radiators, condensers and charge air coolers); auxiliary cooling (power steering coolers and transmission oil coolers); component assemblies; radiators for special applications; on-engine cooling (exhaust gas recirculation ("EGR") coolers, engine oil coolers, fuel coolers, charge air coolers and intake air coolers); chillers and cooling plates for battery thermal management.

Customers – Automobile, light truck, motorcycle, and power sports vehicle and engine manufacturers.

Primary Competitors – Mahle Behr; Dana Corporation; UFI Filters; Denso Corporation; Hanon Systems; BorgWarner; Valeo SA; and Zhejiang Yinlun Machinery Co., Ltd.

Commercial Vehicle

Market Overview – During fiscal 2018, the North America commercial vehicle market experienced substantial growth, particularly within the heavy-duty trucks market. In fiscal 2019, we expect this market trend to continue with strong growth for heavy-duty trucks and modest growth for medium-duty trucks. In South America, the commercial vehicle market recovered in fiscal 2018 and we expect this market to remain strong during fiscal 2019. In Europe, the commercial vehicle market experienced moderate growth in fiscal 2018 and we expect this market to remain at similar levels during fiscal 2019. We expect strong growth in the commercial vehicle market in India during fiscal 2019.

Other trends influencing the commercial and specialty vehicle markets include a desire by global commercial vehicle manufacturers to standardize U.S., Canadian, and Eurozone emissions regulations and the adoption of higher standards, more comparable to Euro6, in China and India. Global standardization would likely lead to further development activities for Modine. Additionally, truck and bus manufacturers are evaluating alternative powertrains and fuels, including electrification, waste heat recovery, and other technologies aimed to improve vehicle efficiency, all of which could present opportunities for us. These trends are driving the advancement of product development worldwide and are creating demand for incremental improvements to thermal transfer products. We remain active in this development activity, and believe we are well positioned to support these changes.

Products – Powertrain cooling (engine cooling modules, radiators, charge air coolers, condensers, oil coolers, fan shrouds, and surge tanks); on-engine cooling (EGR coolers, engine oil coolers, fuel coolers, charge air coolers and intake air coolers); and auxiliary cooling (transmission and retarder oil coolers and power steering coolers); battery thermal management systems.

Customers – Commercial, medium- and heavy-duty truck and engine manufacturers; and bus and specialty vehicle manufacturers.

Primary Competitors – Mahle Behr; TitanX; T. Rad Co. Ltd.; BorgWarner; and Tata Toyo.

Off-Highway

Market Overview – The global off-highway markets experienced strong recovery during fiscal 2018. We expect this trend to continue during fiscal 2019. Production of U.S. agriculture, construction, and mining machinery increased significantly in fiscal 2018, compared to the prior year. We expect this market will continue to improve during fiscal 2019. The European construction and agricultural equipment markets were relatively flat in fiscal 2018; however, we expect moderate growth in these markets during fiscal 2019. In South America, the off-highway markets had a solid recovery in fiscal 2018 and we expect this improvement to continue in fiscal 2019. In Asia, the construction market experienced significant growth during fiscal 2018, and we expect further growth in the China and Korea excavator markets in fiscal 2019.

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Products – Powertrain cooling (engine cooling modules, radiators, condensers, charge air coolers, fuel coolers and oil coolers); auxiliary cooling (power steering coolers and transmission oil coolers); and on-engine cooling (EGR coolers, engine oil coolers, fuel coolers, charge air coolers and intake air coolers).

Customers – Construction, agricultural, and mining equipment and engine manufacturers, and industrial manufacturers of material handling equipment, generator sets and compressors.

Primary Competitors – Adams Thermal Systems Inc.; AKG Group; Denso Corporation; Zhejiang Yinlun Machinery Co., Ltd.; ThermaSys Corp.; Doowon; Donghwan; T. Rad Co. Ltd.; Mahle Industrial Thermal Systems; KALE OTO RADYATÖR; and RAAL.

Our Industrial Businesses

Commercial and Industrial Solutions Segment

Market Overview – The primary HVAC&R markets served by our CIS segment experienced modest growth during fiscal 2018 and we expect continued growth during fiscal 2019. We anticipate growth in the global commercial and residential air conditioning markets driven by an expansion of reliable energy sources and increases in income levels in China, India, and other developing countries. Demand for efficient HVAC&R systems is driven by more stringent energy efficiency regulations and the need for higher-efficiency buildings. Also in regards to the commercial air conditioning markets, we expect growth in the global precision air conditioning market driven by increasing heat density in data centers resulting from rising levels of data traffic and storage requirements, coupled with the overall expansion of the underlying data center market. In addition, regulatory bodies are imposing stricter guidelines aimed to reduce carbon footprint, which is driving data centers to adopt the latest precision cooling solutions. We expect growth in the global refrigeration markets, and in particular, in China and India. We also expect increasing urbanization, changing food consumption trends and increasing global trade will drive investments in refrigeration infrastructure. The global industrial power sector is characterized by the continuing demand for electricity as a preferred source of energy, climate change initiatives to minimize environmental impacts, growth and industrialization in emerging markets, and grid upgrades and refurbishments in more mature markets.

Products – Coils (heat-exchanger and microchannel); coolers (unit coolers, remote condensers, fluid coolers, transformer oil coolers and brine coolers); and coatings to protect against corrosion.

Customers – Commercial and industrial equipment manufacturers; distributors, contractors, and consumers in a variety of commercial and industrial applications, including commercial and mobile air conditioning, refrigeration, and precision and industrial cooling.

Primary Competitors – Kelvion Holding GmbH; Alfa-Laval AB; LU-VE S.p.A; Lennox International, Inc.; Super Radiator Coils; DunAn Precision Manufacturing, Inc.; and Guntner GmbH & Co. KG.

Building HVAC Segment

Market Overview –The North America heating market expanded in fiscal 2018 due to overall positive economic conditions, but was also supported by the increased length of the winter season in our key geographic markets. We are planning for modest improvement in the North America heating market in fiscal 2019. We also anticipate increased market demand for ventilation products in fiscal 2019 as we expand our product offering in this market. In addition to North America, we also serve heating, ventilating, and air conditioning ("HVAC") markets in the United Kingdom, mainland Europe, the Middle East and South Africa. We expect improvement in commercial investment, construction market activity, and energy efficiency legislation to drive increased demand for our ventilation and air conditioning products. We anticipate that recent European legislation, designed to increase equipment efficiency and

reduce the use of high global warming potential refrigerants, will result in customer buying pattern shifts over the next two years, and may increase market volatility in the short-term as HVAC equipment providers shift products towards more efficient and environmentally-friendly alternatives.

Products – Unit heaters (gas-fired, hydronic, electric and oil-fired); duct furnaces (indoor and outdoor); infrared units (high- and low-intensity); hydronic products (commercial fin-tube radiation, cabinet unit heaters, and convectors); roof-mounted direct- and indirect-fired makeup air units; commercial packaged rooftop ventilation units; unit ventilators; single packaged vertical units; precision air conditioning units for data center applications; air-handling units; chillers; ceiling cassettes; hybrid fan coils; and condensing units. Aftersales includes spare parts, maintenance service and control solutions from existing plant equipment and new building management controls and systems.

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Customers – Mechanical contractors; HVAC wholesalers; installers; and end users in a variety of commercial and industrial applications, including banking and finance, data center management, education, hospitality, telecommunications, entertainment arenas, hotels, restaurants, hospitals, warehousing, manufacturing, and food and beverage processing.

Primary Competitors – Lennox International Inc.; Commercial Environmental Solutions (Reznor); Mestek Inc. (Sterling); Vertiv (formerly Emerson Electric Company (Liebert)); Stulz; Schneider Electric (APC / Uniflair); Johnson Controls, Inc. (York); Daikin (McQuay International); System Air (ChangeAir); Ingersoll Rand Inc. (Trane); Bard Manufacturing; and Aaon, Inc.

Geographical Areas

We maintain administrative organizations in all key geographical regions to facilitate customer support, development and testing, and other administrative functions. We operate in the following countries:

North America	South America	Europe	Asia/Pacific	Middle East/Africa
United States	Brazil	Austria	China	United Arab Emirates
Mexico		Belgium	India	South Africa
		Germany	Japan	
		Hungary	South Korea	
		Italy		
		Netherlands		
		Russia		
		Serbia		
		Spain		
		Sweden		
		United Kingdom		

Our non-U.S. subsidiaries and affiliates manufacture and sell a number of vehicular and commercial, industrial and building HVAC&R products similar to those produced in the U.S. In addition to normal business risks, operations outside the U.S. are subject to other risks such as changing political, economic and social environments, changing governmental laws, taxes and regulations, foreign currency volatility, and market fluctuations.

Exports

Export sales from the U.S. to foreign countries as a percentage of consolidated net sales were 5 percent, 7 percent and 9 percent in fiscal 2018, 2017 and 2016, respectively.

We believe our international presence positions us to share profitably in the anticipated long-term growth of the global vehicular and commercial, industrial and building HVAC&R markets. We are committed to increasing our involvement and investment in international markets in the years ahead.

Foreign and Domestic Operations

Financial information relating to our foreign and domestic operations is included in Note 20 of the Notes to Consolidated Financial Statements.

Customer Dependence

Our ten largest customers, certain of which are conglomerates, accounted for 48 percent of our consolidated net sales in fiscal 2018. In fiscal 2018, 2017 and 2016, Daimler AG and Volkswagen AG each accounted for 10 percent or more of our sales.

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Our top customers operate primarily in the automotive, commercial vehicle, off-highway, and commercial air conditioning markets. Our top customers, listed alphabetically, include: Carrier, Caterpillar; Daimler AG (including Daimler Trucks, Detroit Diesel, Mercedes-Benz, and Western Star Trucks); Deere & Company; Denso Corporation; FCA Italy S.p.A. (including Chrysler, CNH, Fiat, Iveco, and VM Motori); Navistar (including MWM International); Volkswagen AG (including Audi, MAN, Porsche, and Scania); and AB Volvo (including Mack Trucks and Renault Trucks). In addition, our CIS segment includes significant sales generated from a single global technology customer (9 percent of CIS segment sales) with which we are party to confidentiality agreements. Generally, we supply products to our customers on the basis of individual purchase orders received from them. When it is in the mutual interest of Modine and our customers, we utilize long-term sales agreements to minimize investment risks and provide the customer with a proven source of competitively-priced products. These contracts are typically three to five years in duration.

Backlog of Orders

Our operating segments maintain their own inventories and production schedules. We believe that our current production capacity is capable of handling the sales volume expected in fiscal 2019 and beyond.

Raw Materials

We purchase aluminum, nickel and steel from several domestic and foreign suppliers. In general, we do not rely on any one supplier for these materials, which are, for the most part, available from numerous sources in quantities required by us. The supply of copper and brass material is highly concentrated between two global suppliers. We normally do not experience raw material shortages and believe that our suppliers' production of these metals will be adequate throughout the next fiscal year. We typically adjust metals pricing with our raw material and major fabricated component suppliers on a quarterly basis. When possible, we have made material pass-through arrangements with key customers, which allow us to adjust customer prices, on a prospective basis, based upon increases and decreases in the cost of key raw materials. When utilized, however, these pass-through arrangements are typically limited to the underlying cost of the material based upon the London Metal Exchange, and do not include related premiums or fabrication costs. In addition, there can often be a three-month to one-year lag between the time of the material price increase or decrease and the time that we adjust the price with our customer.

Patents

We own or license numerous patents related to our products and operations. These patents and licenses have been obtained over a period of years and expire at various times. Because we have many product lines, we believe that our business as a whole is not materially dependent upon any particular patent or license, or any particular group of patents or licenses. We consider each of our patents, trademarks and licenses to be of value and aggressively defend our rights throughout the world against infringement. We have been granted and/or acquired more than 2,400 patents worldwide over the life of our company.

Research and Development

We remain committed to our vision of creating value through technology and innovation. We focus our engineering and R&D efforts on solutions that meet challenging heat transfer needs of OEMs and other customers within the automotive, powersports, commercial vehicle, construction, agricultural, and commercial, industrial, and building HVAC&R markets. Our products and systems are often aimed at solving difficult and complex heat transfer challenges requiring advanced thermal management. Typical market demands are for products and systems that are lighter weight, more compact, more efficient and more durable to meet customer standards as customers work to ensure compliance with increasingly stringent global emissions and energy efficiency requirements. Our heritage includes a depth and breadth of expertise in thermal management that, combined with our global manufacturing

presence, standardized processes, and state-of-the-art technical resources, enables us to rapidly bring customized solutions to our customers.

R&D expenditures, including certain application engineering costs for specific customer solutions, totaled $66 million, $64 million, and $61 million in fiscal 2018, 2017, and 2016, respectively. Over the last three years, R&D expenditures have been between 3 and 5 percent of our consolidated net sales. This level of investment reflects our continued commitment to R&D in an ever-changing marketplace. To achieve efficiencies and lower development costs, our R&D groups work closely with our customers on special projects and system designs. Projects include EGR technology, oil coolers, charge air coolers, refrigerant heat exchangers, and battery thermal management systems for the automotive, commercial vehicle, agriculture, construction, and residential and commercial energy storage markets, which enable our customers to meet more stringent emission and energy efficiency standards. Most of our current R&D activities are focused on internal development in the areas of powertrain cooling, engine cooling, building HVAC, and commercial and industrial thermal management products. We also collaborate with several industry, university, and government-sponsored research organizations that conduct research and provide data on practical applications in the markets we serve. We continue to identify, evaluate and engage in external research projects that complement our strategic internal research initiatives in order to further leverage our significant thermal technology expertise and capabilities.

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Quality Improvement

Through our global Quality Management System ("QMS"), which is an integrated part of our management system, the majority of our manufacturing facilities and administrative offices in our Americas, Europe and Asia segments are registered to ISO 9001:2008 or ISO/TS 16949:2009 standards, helping to ensure that our customers receive high quality products and services. We have begun to transition to ISO 9001:2015 and IATF 16949:2016 standards. While customer expectations for performance, quality and service continue to rise, our QMS has allowed us to drive improvements in quality performance and has enabled the ongoing delivery of products, service and value that meet or exceed customer expectations.

Our global QMS operates within the context of the Modine Operating System ("MOS"), which focuses on well-defined improvement principles and leadership behaviors to engage our teams in facilitating rapid improvements. We drive sustainable and systematic continuous improvement throughout all operating segments and functional areas of the organization by utilizing the principles, processes and behaviors that are core to these systems.

Environmental, Health and Safety Matters

We are committed to preventing pollution, eliminating waste and reducing environmental risks and we have established specific environmental improvement targets and objectives for the upcoming fiscal year. The majority of our facilities maintain Environmental Management System ("EMS") certification to the international ISO14001 standard through independent third-party audits.

During fiscal 2018, we launched a global initiative to reduce both our energy and water usage by 5 percent by fiscal 2020. In support of this initiative, we recently implemented building improvements, including LED lighting, at our recently-acquired Grenada, Mississippi manufacturing facility. These improvements alone are expected to reduce approximately 2.6 million kilowatt hours of electrical usage per year.

Our product portfolio reflects our sense of environmental responsibility. We continue to develop and refine environmentally-friendly product lines, including oil, fuel, and EGR coolers for gas and diesel applications, light-weight and high-performance powertrain cooling heat exchangers for both combustion and electric vehicle, air cooled refrigerant and liquid heat exchangers used in residential, commercial, and industrial applications, and our advanced cooling system technology. These products provide increased fuel economies, enable combustion technologies that reduce harmful gas emissions for vehicles, and provide energy efficient solutions for building and stationary applications. Our BHVAC segment offerings, including the Effinity™, a condensing gas-fired unit heater with industry-leading efficiencies; the Atherion™ Commercial Packaged Ventilation System; the Airedale SchoolMate® with a water source heat pump; and the Airedale Chiller product line-up, ecodesign compliant with European standards. These products are helping commercial, industrial and residential users achieve high energy efficiencies and reduce utility costs.

Obligations for remedial activities may arise at our facilities due to past practices, or as a result of a property purchase or sale. These expenditures most often relate to sites where past operations followed practices that were considered acceptable under then-existing regulations, but now require investigative and/or remedial work to ensure appropriate environmental protection or where we are a successor to the obligations of prior owners and current laws and regulations require investigative and/or remedial work to ensure sufficient environmental compliance. Environmental liabilities for investigative work and remediation at sites in the U.S. and abroad totaled $17 million at March 31, 2018.

We have consistently out-performed the private-industry Recordable Incident Rate ("RIR" as defined by OSHA) average for the manufacturing sector, which was 3.6 in 2016. During fiscal 2018, we recorded an RIR of 1.42, which was slightly higher than our prior year rate of 1.31. The increase in fiscal 2018 largely resulted from the full-year inclusion of the recently-acquired CIS segment manufacturing locations. Throughout fiscal 2018, we implemented

our behavior-based safety program at certain CIS locations in North America, Europe and Asia and expect to implement the program at the remaining CIS locations during fiscal 2019. Our behavior-based safety program proactively seeks to correct at-risk behaviors while positively reinforcing safe behaviors. Our focus on behavior-based safety and process stream safety are part of our long-term commitment to strengthen our safety culture.

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Employees

We employed approximately 11,700 persons worldwide as of March 31, 2018.

Seasonal Nature of Business

Our overall operating performance is generally not subject to a significant degree of seasonality, as sales to OEM customers are dependent upon market demand for new vehicles. However, our second fiscal quarter production schedules are typically impacted by customer summer shut downs and our third fiscal quarter is affected by holiday schedules. Additionally, our CIS and BHVAC segments experience some seasonality as demand for HVAC&R products can be affected by heating and cooling seasons, weather patterns, construction, and other factors. We expect sales volume within our CIS segment to be higher during our first two fiscal quarters due to the construction seasons in the northern hemisphere. Sales volume within the BHVAC segment is generally stronger in our second and third fiscal quarters, corresponding with demand for heating products.

Working Capital

We manufacture products for the majority of customers in our vehicular and CIS segments on an as-ordered basis, which makes large inventories of finished products unnecessary. In our BHVAC segment, we maintain varying levels of finished goods inventory due to seasonal demand and certain sales programs. In Brazil, within our Americas segment, we maintain aftermarket product inventory in order to timely meet customer needs in the Brazilian automotive and commercial vehicle aftermarkets. We do not experience a significant number of returned products within any of our operating segments.

Available Information

Through our website, www.modine.com (Investors link), we make available, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, other Securities Exchange Act reports and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission (“SEC”). Our reports are also available free of charge on the SEC’s website, www.sec.gov. Also available free of charge on our website are the following corporate governance documents, among others:

- Code of Conduct, which is applicable to all Modine directors and employees, including the principal executive officer, the principal financial officer, and the principal accounting officer;
- Corporate Governance Guidelines;
- Audit Committee Charter;
- Officer Nomination and Compensation Committee Charter;
- Corporate Governance and Nominating Committee Charter; and
- Technology Committee Charter.

All of the reports and corporate governance documents referenced above and other materials relating to corporate governance may also be obtained without charge by contacting Corporate Secretary, Modine Manufacturing Company, 1500 DeKoven Avenue, Racine, Wisconsin 53403-2552. We do not intend to incorporate our internet website and the information contained therein or incorporated therein into this annual report on Form 10-K.

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ITEM 1A. RISK FACTORS.

In the ordinary course of our business, we face various market, operational, strategic, and financial risks. These risks could have an impact on our business, financial condition, and results of operations. Our most significant risks are set forth below and elsewhere in this Annual Report on Form 10-K.

Our Enterprise Risk Management ("ERM") process seeks to identify and address significant risks. We believe that risk-taking is an inherent aspect of operating a global business and, in particular, one focused on growth and cost-competitiveness. Our goal is to proactively manage risks in a structured approach in conjunction with strategic planning, with the intent to preserve and enhance shareowner value. However, the risks set forth below and elsewhere in this report, as well as other risks currently unknown or deemed immaterial at the date of this report, could adversely affect us and cause our financial results to vary materially from recent or anticipated future results.

A. MARKET RISKS

Customer and Supplier Matters

Our vehicular customers continually seek price reductions from us. These price reductions adversely affect our results of operations.

We face continuous price-reduction pressure from our vehicular customers. Virtually all of these OEMs impose aggressive price-reduction initiatives upon their suppliers, even if contrary to contractual terms, and we expect such actions to continue in the future. In response, we must continually reduce our operating costs in order to maintain profit margins that are acceptable to us. We have taken, and will continue to take, steps to reduce our operating costs to offset customer price reductions; however, price reductions adversely affect our profit margins and are expected to do so in the future. If we are unable to avoid price reductions for our customers, or if we are unable to offset price reductions through improved operating efficiencies and manufacturing processes, sourcing alternatives, technology enhancements and other cost reduction initiatives, our results of operations could be adversely affected.

Our net sales and profitability could be adversely affected from business losses or declines with major customers.

Deterioration of a business relationship with a major customer could cause our sales and profitability to suffer. Generally speaking, this risk is highest in our vehicular business segments, where a large portion of sales are attributable to a relatively small number of customers. We principally compete for new vehicular business both during the initial development of new models and upon the redesign of existing models by our major customers. New model development generally begins two to five years prior to marketing such models to the public. The failure to obtain new business on new models or to retain or increase business on redesigned existing models could adversely affect our business and financial results. In addition, as a result of the relatively long lead times required for many of our complex vehicular components, it may be difficult in the short term for us to obtain new sales to replace any unexpected decline in sales of existing products. We may incur significant expense in preparing to meet anticipated customer requirements that may not be recovered. The loss of a major customer, the loss of business with respect to one or more of the vehicle models that use our vehicular products, or a significant decline in the production levels of such vehicles could have an adverse effect on our business, results of operations and financial condition.

Our CIS segment includes significant sales generated from a single global technology customer (9 percent of CIS segment sales) with which we are party to confidentiality agreements. Sales to this customer have historically fluctuated significantly from one quarter or fiscal year to the next. While we expect to be able to manage troughs and take advantage of peaks, to the extent we are unable to predict and mitigate lower sales levels or respond in a timely fashion to higher sales levels, the results of operations for the CIS segment could be adversely affected.

We are dependent upon the health of the customers and markets we serve.

We are highly susceptible to unfavorable trends in the markets we serve as our customers' sales and production levels are affected by general economic conditions, including access to credit, the price of fuel and electricity, employment levels and trends, interest rates, labor relations issues, regulatory requirements, trade agreements and other market factors, as well as by customer-specific issues. Any significant decline in production levels for current and future customers could result in asset impairment charges and a reduction in our sales, thereby adversely impacting our results of operations and financial condition.

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Fluctuations in costs of materials (including aluminum, copper, steel and stainless steel (nickel), other raw materials and energy) could place significant pressure on our results of operations.

Increases in the costs of materials, which may be impacted by a variety of factors, including changes in trade laws and tariffs, could have a significant adverse effect on our results of operations. We have sought to alleviate this risk by including material pass-through provisions in our customer contracts when possible. Under these arrangements, we adjust customer prices, on a prospective basis, based upon increases and decreases in the cost of key raw materials. However, where these pass-through arrangements are utilized, there can often be a three-month to one-year lag between the time of the material increase or decrease and the time of the price adjustment. To further mitigate our exposure, we, from time to time, enter into forward contracts to hedge a portion of our forecasted aluminum and copper purchases. However, these hedges may only partially offset increases in material costs, and significant increases could have an adverse effect on our results of operations.

We could be adversely affected if we experience shortages of components or materials from our suppliers.

In an effort to manage and reduce our cost of purchased goods and services, we, like many suppliers and customers, have been consolidating our supply base. As a result, we are dependent upon limited sources of supply for certain components used in the manufacture of our products. We select our suppliers based upon total value (including price, delivery and quality), taking into consideration their production capacities, financial condition and ability to meet our demand. In some cases, it can take several months or longer to find a supplier due to qualification requirements. However, strong demand, the potential effects of trade laws and tariffs, capacity limitations, financial instability, or other problems experienced by our suppliers could result in shortages or delays in their supply of product to us. If we were to experience a significant or prolonged shortage of critical components or materials from any of our suppliers and could not procure the components or materials from other sources, we would be unable to meet our production schedules and we would miss product delivery dates, which would adversely affect our sales, results of operations and customer relationships.

Continual customer pressure to absorb costs adversely affects our profitability.

Customers often request that we pay for design, engineering and tooling costs that are incurred prior to the start of production and recover these costs through amortization in the piece price of the product. Some of these costs cannot be capitalized, which adversely affects our profitability until the programs for which they have been incurred are launched. If a given program is not launched, or is launched with significantly lower volumes than planned, we may not be able to recover the design, engineering and tooling costs from our customers, further adversely affecting our results of operations.

Competitive Environment

We face strong competition.

The competitive environment continues to be dynamic as many of our customers, faced with intense international competition, have expanded their sourcing of components. As a result, we experience competition from suppliers in other parts of the world that enjoy economic advantages, such as lower labor costs, lower health care costs, lower tax rates, lower costs associated with legal compliance, and, in some cases, export or raw materials subsidies. In addition, consolidation and vertical integration within the supply base have introduced new or restructured competitors to our markets. Increased competition could adversely affect our business and our results of operations.

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Exposure to Foreign Currencies

As a global company, we are subject to foreign currency rate fluctuations, which affect our financial results.

Although our financial results are reported in U.S. dollars, a significant portion of our sales and operating costs are realized in foreign currencies, including the euro, British pound, Brazilian real and others. Our sales and profitability are affected by movements of the U.S. dollar against foreign currencies in which we generate sales and incur expenses. To the extent that we are unable to match sales in foreign currencies with costs paid in the same currency, exchange rate fluctuations in any such currency could have an adverse effect on our financial results. During times of a strengthening U.S. dollar, our reported sales and earnings from our international operations will be lower because the applicable local currency will be translated into fewer U.S. dollars. In certain instances, currency rate fluctuations may create pricing pressure relative to competitors quoting in different currencies, which could result in our products becoming less competitive. Significant long-term fluctuations in relative currency values, in particular a significant change in the relative values of the U.S. dollar, euro, British pound or Brazilian real, could have an adverse effect on our results of operations and financial condition.

B. OPERATIONAL RISKS

Challenges of Maintaining a Competitive Cost Structure

We may be unable to maintain competitive cost structures within our business.

As a result of the “Strengthen” objective of our SDG transformational strategy, we have transitioned to a more global, product-based organization. We have engaged in restructuring activities in our Americas, Europe, CIS and BHVAC segments in order to optimize our manufacturing footprint and cost structure. These restructuring activities included the consolidation and/or closure of manufacturing facilities in North America and Europe, as well as targeted headcount reductions that support our objective of reducing operational and SG&A cost structures. In addition, we continue to focus on reducing costs for materials and services through targeted adjustments and negotiations with our supply base. Our successful execution of these initiatives, and our ability to identify and execute future opportunities to optimize our cost structures, is critical to enable us to establish a cost environment that will increase and sustain our long-term competitiveness. Any failure to do so could, in turn, adversely affect our results of operations and financial condition.

Challenges of Product Launches

We continue to launch a significant number of new programs at our facilities across the world. The success of these launches is critical to our business.

We design technologically advanced products, and the processes required to produce these products can be difficult and complex. We commit significant time and financial resources to ensure the successful launch of new products and programs. Due to our high level of launch activity in each of our segments, we must appropriately manage these launches and deploy our operational and administrative resources to take advantage of this increase in our business. If we do not successfully launch the products and programs, we may lose market share or damage relationships with our customers, which could negatively affect our business. In addition, any failure in our manufacturing strategy for these new products or programs could result in production inefficiencies or asset impairment charges.

Complexities of Global Presence

We are subject to risks related to our international operations.

We have manufacturing and technical facilities located in North America, South America, Europe, Asia, and Africa. In fiscal 2018, 57 percent of our sales were from non-U.S. operations. Consequently, our global operations are subject to complex international laws and regulations and numerous risks and uncertainties, including changes in monetary and fiscal policies, including those related to tax and trade, cross-border trade restrictions or prohibitions, import or other charges or taxes, fluctuations in foreign currency exchange and interest rates, changing economic conditions, unreliable intellectual property protection and legal systems, insufficient infrastructures, social unrest, political instability and disputes, incompatible business practices, and international terrorism. Changes in policies or laws governing the terms of foreign trade, and in particular increased trade restrictions, tariffs or taxes on imports from countries where we manufacture products, such as Mexico, could have a material adverse effect on our results of operations. In addition, compliance with multiple and often conflicting laws and regulations of various countries is burdensome and expensive.

Embargoes or sanctions imposed by the U.S. government or those abroad that restrict or prohibit sales to or purchases from specific persons or countries or based upon product classification may expose us to potential criminal and civil sanctions. We cannot predict future regulatory requirements to which our business operations may be subject or the manner in which existing laws might be administered or interpreted.

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In addition, the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and other similar anti-corruption laws generally prohibit companies and their intermediaries from making payments to improperly influence foreign government officials or other persons for the purpose of obtaining or retaining business. In recent years, there has been a substantial increase in the global enforcement of anti-corruption laws. In the event that we believe our employees or agents may have violated applicable anti-corruption laws, or if we are subject to allegations of any such violations, we may have to expend significant time and financial resources towards the investigation and remediation of the matter, which could disrupt our business and result in a material adverse effect on our financial condition, results of operations and reputation.

Reliance upon Technology Advantage

If we cannot differentiate ourselves from our competitors with our technology, our existing and potential customers may seek lower prices and our sales and earnings may be adversely affected.

Price, quality, delivery, technological innovation, and application engineering development are the primary elements of competition in our markets. If we fail to keep pace with technological changes and cannot differentiate ourselves from our competitors with our technology or fail to provide high quality, innovative products and services that both meet or exceed customer expectations and address their ever-evolving needs, we may experience price erosion, lower sales, and lower profit margins. Significant technological developments by our competitors or others also could adversely affect our business and results of operations.

Developments or assertions by or against us relating to intellectual property rights could adversely affect our business.

We own significant intellectual property, including a large number of patents, trademarks, copyrights and trade secrets. Our intellectual property plays an important role in maintaining our competitive position in a number of the markets we serve. As we expand our operations in jurisdictions where the enforcement of intellectual property rights is less robust, the risk of others duplicating our proprietary technologies increases, despite our efforts to protect them. Developments or assertions by or against us relating to intellectual property rights could adversely affect our business and results of operations.

Information Technology Systems

We may be adversely affected by any disruption in, or breach of, our information technology systems.

Our operations are dependent upon our information technology systems, which encompass all of our major business functions. A substantial disruption in our information technology systems for a prolonged time period, or a significant breach of our information security, could result in delays in receiving inventory and supplies or filling customer orders, and/or the release of otherwise confidential information, adversely affecting our customer service and relationships as well as our reputation, and could lead to significant remediation expenses and litigation risks. Our systems, and the systems of our service providers or others, could be breached, damaged or interrupted by cyber attacks or other man-made intentional or unintentional events, or by natural disasters or occurrences, many of which may, despite our best efforts, be beyond our ability to effectively detect, anticipate or control. Any such events and the related delays, problems or costs could have a material adverse effect on our business, financial condition, results of operations and reputation.

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Claims and Litigation

We may incur material losses and costs as a result of warranty and product liability claims and litigation or other legal proceedings.

In the event our products fail to perform as expected, we are exposed to warranty and product liability claims and may be required to participate in a recall or other field campaign of such products. Many of our vehicular customers offer extended warranty protection for their vehicles and put pressure on their supply base to extend warranty coverage as well. If our customers demand higher warranty-related cost recoveries, or if our products fail to perform as expected, it could have a material adverse impact on our results of operations and financial condition. We are also involved in various legal proceedings from time to time incidental to our business. If any such proceeding has a negative result, it could adversely affect our business, results of operations and financial condition.

Environmental, Health and Safety Regulations

We could be adversely impacted by the costs of environmental, health and safety regulations.

Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things, emissions to air, discharge to waters and the generation, handling, storage, transportation, treatment and disposal of waste and other materials. The operation of our manufacturing facilities entails risks in these areas and there can be no assurance we will avoid material costs or liabilities relating to such matters. Our financial responsibility to clean up contaminated property may extend to previously-owned or used property, properties owned by unrelated companies, as well as properties we currently own and use, regardless of whether the contamination is attributable to prior owners. In addition, potentially significant expenditures could be required in order to comply with evolving environmental, health and safety laws, regulations or other requirements that may be adopted or imposed in the future.

C. STRATEGIC RISKS

Growth Strategies

Inability to identify and execute on inorganic- and organic-growth opportunities may adversely impact our business and operating results.

We expect to continue to pursue acquisitions in "industrial" markets and expand our market share in high-growth engine and powertrain cooling areas through focused research and development activities and commercial pursuits. There can be no assurance we will be able to identify attractive acquisition targets and/or organic growth opportunities. If we are unable to successfully complete such transactions in the future, our growth may be limited. In addition, future acquisitions will require integration of operations, sales and marketing, information technology, finance, and administrative functions. If we are unable to successfully integrate acquisitions and operate these businesses profitably, we may not achieve the financial or operational success expected from the acquisitions.

D. FINANCIAL RISKS

Liquidity and Access to Cash

Our indebtedness may limit our use of cash flow to support operating, development and investment activities, and failure to comply with our debt covenants could adversely affect our liquidity and financial results.

As of March 31, 2018, we had total outstanding indebtedness of $479 million. Our indebtedness and related debt service obligations i) require that significant cash flow from operations be used for principal and interest payments, which reduces the funds we have available for other business purposes; ii) limit our flexibility in planning for or reacting to changes in our business and market conditions; and iii) expose us to interest rate risk, since the majority of our debt obligations carry variable interest rates. If we are unable to maintain our leverage ratio (net debt divided by Adjusted EBITDA, as defined in our credit agreements) within our target range of 1.5 to 2.5, or if we are unable to move cash globally to enable debt repayments in a tax-efficient manner, our results of operations and financial condition could be adversely affected.

Market trends and regulatory requirements may require additional funding for our pension plans.

We have several defined benefit pension plans in the U.S., all of which are frozen to new participants. Our funding policy for these plans is to contribute annually, at a minimum, the amount necessary on an actuarial basis to provide for benefits in accordance with applicable laws and regulations. Our domestic plans have an unfunded liability of $73 million. During fiscal 2019, we anticipate making funding contributions totaling $6 million related to these domestic plans. Funding requirements for our defined benefit plans are dependent upon, among other things, interest rates, underlying asset returns, mortality rate tables, and the impact of legislative or regulatory changes. Should changes in actuarial assumptions or other factors result in the requirement of significant additional funding contributions, our financial condition could be adversely affected.

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Goodwill and Intangible Assets

Our balance sheet includes significant amounts of goodwill and intangible assets. An impairment of a significant portion of these assets would adversely affect our financial results.

Our balance sheet includes goodwill and intangible assets totaling $304 million at March 31, 2018. We perform goodwill impairment tests annually, as of March 31, or more frequently if appropriate. In addition, we review intangible assets for impairment whenever business conditions or other events indicate that the assets may be impaired. If we determine the carrying value of an asset is impaired, we write down the asset to fair value and record an impairment charge to current operations. An impairment of a significant portion of goodwill or intangible assets could have a material adverse effect on our financial results.

Income Taxes

We may be subject to additional income tax expense or become subject to additional tax exposure.

Unfavorable changes in the financial outlook of our operations in certain jurisdictions could lead to adverse changes in our valuation allowance assertions for our deferred tax assets. Additionally, the subjectivity of or changes in tax laws and regulations in jurisdictions where we have significant operations could materially affect our results of operations. On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act includes broad and complex changes to the U.S. tax code, including, but not limited to (i) a reduction in the U.S. federal corporate tax rate from 35 percent to 21 percent effective January 1, 2018, and (ii) a transition tax on certain unrepatriated earnings of foreign subsidiaries. In addition, we are subject to tax audits in each jurisdiction in which we operate. Unfavorable or unexpected outcomes from one or more tax audits could adversely affect our results of operations and financial condition.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

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ITEM 2. PROPERTIES.

We operate manufacturing facilities in the U.S. and multiple foreign countries. Our world headquarters, including general offices and laboratory, experimental and tooling facilities, is located in Racine, Wisconsin. We have additional technical support functions located in Grenada, Mississippi; Guadalajara, Spain; Bonlanden, Germany; Söderköping, Sweden; Pocenia, Italy; Sao Paulo, Brazil; Leeds, United Kingdom; Changzhou, China; and Chennai, India.

The following table sets forth information regarding our principal properties as of March 31, 2018. Properties with less than 20,000 square feet of building space have been omitted from this table.

Location of Facility	Building Space	Primary Use	Owned or Leased
Americas Segment			
Lawrenceburg, TN	554,000 sq. ft.	Manufacturing	144,000 Owned; 410,000 Leased
Nuevo Laredo, Mexico	466,000 sq. ft.	Manufacturing	399,000 Owned; 67,000 Leased
Sao Paulo, Brazil	343,000 sq. ft.	Manufacturing	Owned
Jefferson City, MO	220,000 sq. ft.	Manufacturing	162,000 Owned; 58,000 Leased
Trenton, MO	160,000 sq. ft.	Manufacturing	Owned
Joplin, MO	140,000 sq. ft.	Manufacturing	Owned
Laredo, TX	92,000 sq. ft.	Warehouse	Leased
Europe Segment			
Bonlanden, Germany	205,000 sq. ft.	Administrative & technology center	Owned
Kottingbrunn, Austria	221,000 sq. ft.	Manufacturing	Owned
Pontevico, Italy	167,000 sq. ft.	Manufacturing	Owned
Mezökövesd, Hungary	246,000 sq. ft.	Manufacturing	Owned
Pliezhausen, Germany	126,000 sq. ft.	Manufacturing	48,000 Owned; 78,000 Leased
Kirchentellinsfurt, Germany	108,000 sq. ft.	Manufacturing (closed)	Owned
Uden, Netherlands	107,000 sq. ft.	Manufacturing	74,000 Owned; 33,000 Leased
Neuenkirchen, Germany	76,000 sq. ft.	Manufacturing	Owned
Gyöngyös, Hungary	58,000 sq. ft.	Manufacturing	Leased
Asia Segment			
Chennai, India	118,000 sq. ft.	Manufacturing	Owned
Yangzhou, China	116,000 sq. ft.	Manufacturing (Joint Venture)	Leased
Changzhou, China	108,000 sq. ft.	Manufacturing	Owned
Shanghai, China	80,000 sq. ft.	Manufacturing	Leased
Cheonan, South Korea	46,000 sq. ft.	Manufacturing (Joint Venture)	Leased

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Location of Facility	Building Space	Primary Use	Owned or Leased
Commercial and Industrial Solutions Segment			
Grenada, MS	809,000 sq. ft.	Administrative, manufacturing & technology center	Leased
Grenada, MS	220,000 sq. ft.	Manufacturing	Owned
Grenada, MS	190,000 sq. ft.	Manufacturing	Leased
Jacksonville, TX	55,000 sq. ft.	Manufacturing	Owned
Temecula, CA	33,000 sq. ft.	Manufacturing	Leased
Louisville, KY	28,000 sq. ft.	Manufacturing	Leased
Tampa, FL	23,000 sq. ft.	Manufacturing	Leased
Pocenia, Italy	449,000 sq. ft.	Administrative, manufacturing & technology center	Owned
Amaro, Italy	196,000 sq. ft.	Manufacturing	Leased
San Vito, Italy	131,000 sq. ft.	Manufacturing	Owned
Padova, Italy	78,000 sq. ft.	Manufacturing	Leased
Guadalajara, Spain	482,000 sq. ft.	Manufacturing	Owned
Zhongshan, China	143,000 sq. ft.	Manufacturing	Leased
Wuxi, China	125,000 sq. ft.	Manufacturing	Leased
Juarez, Mexico	204,000 sq. ft.	Manufacturing	Leased
Ramos Arizpe, Mexico	59,000 sq. ft.	Manufacturing	Leased
Söderköping, Sweden	237,000 sq. ft.	Manufacturing	Owned
Kötschach-Mauthen, Austria	195,000 sq. ft.	Manufacturing (closed)	Owned
Sremska Mitrovica, Serbia	91,000 sq. ft.	Manufacturing	Leased
Building HVAC Segment			
Leeds, United Kingdom	247,000 sq. ft.	Administrative & manufacturing	Leased
Consett, United Kingdom	30,000 sq. ft.	Manufacturing	Owned
Consett, United Kingdom	20,000 sq. ft.	Manufacturing	Leased
Buena Vista, VA	197,000 sq. ft.	Manufacturing	Owned
Lexington, VA	104,000 sq. ft.	Warehouse	Owned
West Kingston, RI	93,000 sq. ft.	Manufacturing	Owned
Corporate Headquarters			
Racine, WI	458,000 sq. ft.	Headquarters & technology center	Owned

We consider our plants and equipment to be well maintained and suitable for their purposes. We review our manufacturing capacity periodically and make the determination as to our need to expand or, conversely, rationalize our facilities as necessary to meet changing market conditions and our needs.

ITEM 3. LEGAL PROCEEDINGS.

The information required hereunder is incorporated by reference from Note 18 of the Notes to Consolidated Financial Statements.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

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EXECUTIVE OFFICERS OF THE REGISTRANT.

The following sets forth the name, age (as of March 31, 2018), recent business experience and certain other information relative to each executive officer of the Company.

Name	Age	Position
Brian J. Agen	49	Vice President, Human Resources (October 2012 – Present).
Dennis P. Appel	43	Vice President, Commercial and Industrial Solutions (December 2016 – Present). Prior to joining Modine, Mr. Appel held a variety of leadership positions with Luvata HTS in the U.S., Europe and Asia, including most recently, President of Luvata HTS.
Scott L. Bowser	53	Vice President, Global Operations (October 2016 – Present); previously Vice President of Asia and Global Procurement for the Company.
Thomas A. Burke	60	President and Chief Executive Officer (April 2008 – Present).
Joel T. Casterton	46	Vice President, Vehicular Thermal Solutions (January 2018 – Present); previously Director – Global Program Management & Quality for the Company.
Michael B. Lucareli	49	Vice President, Finance and Chief Financial Officer (October 2011 – Present).
Thomas F. Marry	57	Executive Vice President and Chief Operating Officer (February 2012 – Present).
Matthew J. McBurney	48	Vice President, Strategic Planning and Development (November 2017 – Present); previously Vice President, Luvata HTS Integration for the Company and Vice President, Building HVAC for the Company.
Scott A. Miller	53	Vice President, Building HVAC (September 2016 – Present); previously Managing Director – Global Operations for the Company and Operations Director of the Building HVAC and North America business units for the Company.
Holger Schwab	53	Vice President, Vehicular Thermal Solutions (April 2017 – March 2018); previously Regional Vice President – Europe for the Company.
Sylvia A. Stein	51	Vice President, General Counsel and Corporate Secretary (January 2018 – Present). Prior to joining Modine, Ms. Stein served as the Associate General Counsel, Marketing & Regulatory at the Kraft Heinz Foods Company and was Chief Counsel, Cheese & Dairy and Grocery Business Units for Kraft Foods Group, Inc. / Kraft Foods Global, Inc.
Scott D. Wollenberg	49	Vice President – Chief Technology Officer (July 2016 – Present); previously Regional Vice President – Americas for the Company.

Executive Officer positions are designated in our Bylaws and the persons holding these positions are elected annually by the Board, generally at its first meeting after the annual meeting of shareholders in July of each year. In addition, the Officer Nomination and Compensation Committee of the Board may recommend and the Board of Directors may approve promotions and other actions with regard to executive officers at any time during the fiscal year.

There are no family relationships among the executive officers and directors. All of the executive officers of Modine have been employed by us in various capacities during the last five years with the exception of Mr. Appel, who joined in December 2016 and Ms. Stein, who joined in January 2018, whose business experience during the last five years is provided above.

There are no arrangements or understandings between any of the executive officers and any other person pursuant to which he or she was elected an officer of Modine.

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Our common stock is listed on the New York Stock Exchange. Our trading symbol is MOD. The table below shows the range of high and low closing sales prices for our common stock for fiscal 2018 and 2017. As of March 31, 2018, shareholders of record numbered 2,468.

	Fiscal 2018		Fiscal 2017	
Quarter	High	Low	High	Low
First	$17.10	$10.30	$11.26	$8.50
Second	19.35	15.45	11.90	8.70
Third	23.65	19.70	16.30	9.30
Fourth	25.10	20.40	15.55	11.00

We did not pay dividends during fiscal 2018 or 2017. Under our debt agreements, we are permitted to pay dividends on our common stock, subject to certain restrictions based upon the calculation of debt covenants, as further described under “Liquidity and Capital Resources” under Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations. We currently do not intend to pay dividends in fiscal 2019.

We did not purchase shares of common stock during the fourth quarter of fiscal 2018.

PERFORMANCE GRAPH

The following graph compares the cumulative five-year total return on our common stock with similar returns on the Russell 2000 Index and the Standard & Poor’s (S&P) MidCap 400 Industrials Index. The graph assumes a $100 investment and reinvestment of dividends.

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		Indexed Returns				
	Initial Investment	Years ended March 31,				
Company / Index	March 31, 2013	2014	2015	2016	2017	2018
Modine Manufacturing Company	$ 100	$160.99	$148.02	$120.99	$134.07	$232.42
Russell 2000 Index	100	124.90	135.15	121.96	153.94	172.09
S&P MidCap 400 Industrials Index	100	123.52	131.70	128.32	159.89	186.20

ITEM 6. SELECTED FINANCIAL DATA.

The following data should be read in conjunction with the consolidated financial statements and accompanying notes included elsewhere in this report.

	Years ended March 31,				
(in millions, except per share amounts)	2018	2017	2016	2015	2014
Net sales	$2,103	$1,503	$1,353	$1,496	$1,478
Operating income	92	42	37	54	40
Net earnings (loss)	24	15	(1)	23	132
Total assets	1,573	1,450	921	931	1,030
Long-term debt - excluding current portion	386	406	126	130	131
Net cash provided by operating activities	124	42	72	64	105
Expenditures for property, plant and equipment	71	64	63	58	53
Net earnings (loss) per share attributable to Modine shareholders:					
Basic	$0.44	$0.29	$(0.03)	$0.46	$2.75
Diluted	0.43	0.29	(0.03)	0.45	2.72

The following factors impact the comparability of the selected financial data presented above:

- On November 30, 2016, we acquired Luvata HTS for total consideration of $388 million, net of cash acquired. Operating as our CIS segment, net sales from this acquired business were $620 million and $178 million during fiscal 2018 and 2017, respectively. This transaction and the related debt financing also resulted in increases in total assets and long-term debt. During fiscal 2018 and 2017, we recorded $4 million and $15 million, respectively, of costs directly related to the acquisition and integration of Luvata HTS. See Note 2 of the Notes to Consolidated Financial Statements for additional information regarding this acquisition.

- During fiscal 2018, 2017, 2016, 2015, and 2014, we incurred $16 million, $11 million, $17 million, $5 million, and $16 million, respectively, of restructuring expenses. See Note 5 of the Notes to Consolidated Financial Statements for additional information.

- During fiscal 2018, 2016, 2015, and 2014, we recorded impairment charges of $3 million, $10 million, $8 million, and $3 million, respectively. See Notes 5 and 12 of the Notes to Consolidated Financial Statements for additional information.

- During fiscal 2018, we recorded provisional income tax charges totaling $38 million as a result of tax legislation enacted by the U.S. government in December 2017. See Note 7 of the Notes to Consolidated Financial Statements for additional information.

- During fiscal 2016, we recorded $42 million of non-cash pension settlement losses and a $10 million gain related to an insurance settlement for equipment losses. See Notes 16 and 1 of the Notes to Consolidated Financial Statements for additional information.

- During fiscal 2014, we reversed $119 million of deferred tax asset valuation allowances in the U.S.

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Overview

Founded in 1916, Modine Manufacturing Company is a global leader in thermal management systems and components, bringing heating and cooling technology and solutions to diversified global markets. We operate on five continents, in 20 countries, and employ approximately 11,700 persons worldwide.

Our primary product groups include i) powertrain cooling and engine cooling; ii) coils, coolers, and coatings; and iii) heating, ventilation and air conditioning. Our products are used in on- and off-highway original-equipment vehicular applications. In addition, we provide our thermal management technology and solutions to a wide array of commercial, industrial, and building heating, ventilating, air conditioning, and refrigeration markets.

Company Strategy

During fiscal 2018, we successfully integrated our recently-acquired Luvata HTS business, which now operates as our CIS segment. This acquisition, which was completed in late fiscal 2017, was particularly key in achieving our “Diversify” and “Grow “objectives within our SDG strategic transformation initiative launched in fiscal 2016. Through this acquisition, we successfully broadened our customer base, reduced our reliance upon vehicular end markets by increasing our presence in non-vehicular markets, and grew our company with CIS segment net sales of $620 million in fiscal 2018. We’ve been focused on realizing the previously-announced $15 million of targeted cost synergies in three to four years following this acquisition and believe we are on track to exceed this target.

In addition, we’ve continued strengthening our company. Our actions during fiscal 2018 have included i) the closure of a CIS manufacturing facility in Austria, aimed at reducing excess capacity and lowering manufacturing costs in Europe, ii) targeted headcount reductions in our Europe segment, which have resulted in lower operating and SG&A cost structures, and iii) product line transfers to Hungary from other Europe segment manufacturing facilities, aimed at expanding our low-cost country footprint in Europe and ensuring continued competitiveness in the region.

Looking ahead, we are confident that our SDG strategy will keep us grounded, thriving, and transforming. Our company’s foundation is rooted in thermal management, proven products and our commitment to always improve and always innovate, which we believe will continue to ground us as we broaden our foundation and continue to diversify our business. Our business is thriving and we are growing both domestically and abroad. Our Asia segment has grown significantly and our planned expansion in China will be instrumental to meeting demand in the region’s vehicular markets. Looking forward, we aim to continue transforming our company and the thermal management industry by diligently analyzing our market positions and making strategic decisions about where we want to focus both our capital and resources. We are focused on high-return, high-growth and high-performing business opportunities, and, as a stronger company, we believe we have the ability to pursue strategic opportunities in new channels and with new customers around the world. We anticipate the demand for more economical, efficient and sustainable technologies will drive innovation across the markets we serve. We believe our ability to quickly react to rapidly evolving markets will position us well to provide greater value and innovative solutions to our customers and to continue to deliver sustainable shareholder value.

Development of New Products and Technology

Our ability to develop new products and technologies based upon our building block strategy for new and emerging markets is one of our competitive strengths. Under this strategy, we focus on creating core technologies that form the basis for multiple products and product lines across multiple business segments. Each of our business segments have a strong heritage of new product development, and our entire global technology organization benefits from mutual

strengths. We own four global, state-of-the-art technology centers, dedicated to the development and testing of products and technologies. The centers are located in Racine, Wisconsin, Grenada, Mississippi, Pocenia, Italy and Bonlanden, Germany. Our reputation for providing high quality products and technologies has been a Company strength valued by our customers.

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We continue to benefit from relationships with customers that recognize the value of having us participate directly in product design, development and validation processes. This has resulted, and we expect it to continue to result, in strong, long-term customer relationships with companies that value partnerships with their suppliers.

Strategic Planning and Corporate Development

We employ both short-term (one year) and longer-term (five-to-seven year) strategic planning processes, which enable us to continually assess our opportunities, competitive threats, and economic market challenges.

We devote significant resources to global strategic planning and development activities to strengthen our competitive position. Our recently-acquired CIS segment increased our industrial portfolio, broadened our customer base, reduced cyclical exposure, and expanded our growth profile. We expect to continue to pursue acquisitions in “industrial” markets and expand our market share in high-growth engine and powertrain cooling areas through focused research and development activities and commercial pursuits.

Operational and Financial Discipline

We operate in a dynamic, global marketplace; therefore, we manage our business with a disciplined focus on increasing productivity and reducing waste. The nature of the global marketplace requires us to move toward a greater manufacturing scale in order to create a more competitive cost base. In order to optimize our cost structure and improve efficiency of our operations, we have engaged in restructuring activities in our CIS, Europe, Americas and BHVAC segments during fiscal 2018. In addition, as costs for materials and purchased parts may rise from time to time due to increases in commodity markets, we seek low-cost sourcing, when appropriate, and enter into contracts with some of our customers that provide for commodity price adjustments, on a lag basis.

We follow a rigorous financial process for investment and returns, intended to enable increased profitability and cash flows over the long term. We place particular emphasis on working capital improvement and prioritization of our capital investments.

Our executive management incentive compensation (annual cash incentive) plan for fiscal 2018 was based upon consolidated ROACE and operating income growth. These performance goals drive alignment of management and shareholders’ interests in both our asset management decisions and earnings growth targets. In addition, we provide a long-term incentive compensation plan for officers and certain key employees to attract, retain, and motivate employees who directly impact the long-term performance of our company. The plan is comprised of stock awards, stock options, and performance-based stock awards. The performance-based stock awards for the fiscal 2018 through 2020 performance period are based upon three-year average consolidated ROACE and three-year average annual revenue growth.

Segment Information – Strategy, Market Conditions and Trends

Each of our operating segments is managed by a vice president and has separate strategic and financial plans, and financial results, all of which are reviewed by our chief operating decision maker. These plans and results are used by management to evaluate the performance of each segment and to make decisions on the allocation of resources. Effective April 1, 2018, we combined our Americas, Europe, and Asia segment operations with the objective of operating as a more global, product-based organization. As part of this segment combination and our CIS integration activities, we also merged our Americas coils business into the CIS segment and expect to achieve operational improvements and organizational efficiencies as a result. Beginning for fiscal 2019, we will report financial results for the new Vehicular Thermal Solutions segment, which will include the current Americas, Europe and Asia segments.

Americas (27 percent of fiscal 2018 net sales)

Our Americas segment includes powertrain and engine cooling products and technologies that we provide to the automotive, commercial vehicle, and off-highway markets in North and South America. In addition, the Americas segment provides coils products to the commercial refrigeration, residential heating, commercial heating, and air conditioning markets, and also serves Brazil's automotive and commercial vehicle aftermarkets. The Americas coils products are highly complementary to those of our recently-acquired CIS segment.

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Sales volume in the Americas segment significantly increased during fiscal 2018, as compared with the prior year, primarily due to higher sales to certain key end markets. In North America, we benefited from a substantial recovery in the off-highway market and experienced sales volume increases to automotive customers despite a relatively flat automotive market. The North American commercial vehicle market also experienced significant growth during the year; however, our sales volume to commercial vehicle customers lagged behind the overall market trend due to the wind-down of certain commercial vehicle programs. In South America, our primary markets served experienced considerable recovery during fiscal 2018. We anticipate markets in North and South America will experience moderate growth in fiscal 2019. We will continue to target higher-growth markets, within which we expect to benefit from rising fuel efficiency or emissions standards, including the U.S. automotive market which is influenced by vehicle electrification.

Our Americas segment will continue to focus on growth where our products and manufacturing footprint create a competitive advantage. We are focusing on improving our operating leverage through manufacturing improvements. This includes launching new programs efficiently, as well as improving the utilization of our manufacturing footprint.

Europe (27 percent of fiscal 2018 net sales)

Our Europe segment provides powertrain and engine cooling systems, as well as vehicular climate control components, to OEMs and Tier 1 suppliers in the automotive, commercial vehicle, and off-highway markets.

Overall, economic conditions in Europe continued to show modest growth during fiscal 2018, as compared with the prior year. Sales volume to commercial vehicle customers declined in fiscal 2018, primarily due to the planned wind-down of several commercial vehicle programs. The premium automotive market grew slightly during fiscal 2018, while the off-highway markets were relatively flat. Sales volume growth was amplified by favorable exchange rates during the year, namely the strengthening of the euro versus the U.S. dollar. We expanded our production capacity in Hungary and transferred certain product lines from other manufacturing facilities located in higher-cost countries, allowing us to quote competitively and providing additional capacity for both new and existing rapidly growing product lines. Also during fiscal 2018, our Europe segment initiated targeted headcount reductions in support of its objective to reduce operational and SG&A cost structures.

Our Europe segment is focused on continuous improvements and cost containment. We expect continued price-reduction pressure from our customers, along with increased global customer service expectations and competition from suppliers with significant scale and/or which are operating in lower-cost locations. Our manufacturing footprint activities in Europe have favorably impacted our financial results and strengthened our overall competitiveness over the past several years. We believe our Europe segment is well-positioned for improved long-term financial results, driven by our strong customer reputation for technology, service, and program management.

Asia (8 percent of fiscal 2018 net sales)

Our Asia segment provides powertrain cooling systems and engine products to customers in the automotive, off-highway, and commercial vehicle markets.

During fiscal 2018, Asia segment sales significantly increased, primarily due to significant recovery of off-highway markets in China and Korea and maturing program volumes to automotive customers in China and India. We are continuing to ramp up production of aluminum oil coolers in our facility in Shanghai, China, and production levels at our manufacturing facilities in Changzhou, China and Chennai, India also increased in fiscal 2018. We expect this trend to continue in fiscal 2019. In order to provide additional capacity for growth, we are expanding our manufacturing capacity in Changzhou, China. We manufacture various stainless steel products in China within our Modine Puxin Thermal System (Jiangsu) Co., Ltd. joint venture. This joint venture continues to expand in sales and

product offerings to local and global customers. In recent years, our technology, performance, quality, and reputation have enabled us to win new engine products and powertrain cooling business in Asia. Emissions standards in China and India have historically lagged behind those in North America and Europe. As a result, some local on- and off-highway powertrain cooling customers have focused on price more than technology. However, emissions standards in Asia are expected to change in the coming years and we expect to benefit from additional powertrain (e.g., electric vehicle) and engine cooling opportunities, as a result. We do expect, however, that customers in the Asia markets will remain very price-sensitive.

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Our strategy in this segment is to increase sales volume levels and enhance sustained profitability. Our focus is on securing incremental business with existing and new product offerings and to further diversify our customer base. Simultaneously, we are focused on controlling costs and increasing our asset utilization and manufacturing capabilities. We believe our Asia segment is well positioned for growth and new programs in fiscal 2019 and beyond.

Commercial and Industrial Solutions (29 percent of fiscal 2018 net sales)

Our CIS segment provides a broad offering of thermal management products to the HVAC&R markets, including solutions tailored to indoor and mobile climates, food storage and transport-refrigeration, and industrial processes. CIS's primary product groups include coils, coolers, and coatings. Our coils products include custom-designed condensers, evaporators, round-tube solutions, as well as steam and water/fluid coils. Our coolers include commercial refrigeration units, which are used across the food supply chain as well as for precision climate control for other applications such as data centers, and other types such as carbon dioxide and ammonia unit coolers, remote condensers, transformer oil coolers, and brine coolers. In addition, we offer proprietary coating solutions for corrosion protection, prolonging the life of heat-transfer equipment.

We are continuing to harmonize the CIS business processes with those of the rest of our Company. During fiscal 2018, CIS experienced modest growth. Strength in the North America recreational vehicle air conditioning and China industrial power markets was partially offset by weakness in the European industrial power market. We expect modest growth in each of the CIS markets we serve during fiscal 2019.

Looking forward, our strategy in this segment is to realize potential synergies and grow future earnings. We are working towards our goal of attaining $15 million of synergy savings over the first two years of operations. We are deriving cost savings from a variety of synergy opportunities including procurement activities, operational improvements, plant consolidation, system conversions, and organizational efficiencies. We believe our CIS segment is well-positioned for sustained, positive long-term financial results, driven in particular by growing market demand.

Building HVAC (9 percent of fiscal 2018 net sales)

Our BHVAC segment manufactures and distributes a variety of original equipment and aftersales HVAC products, primarily for commercial buildings and related applications in North America, the United Kingdom, mainland Europe, the Middle East, Asia, and Africa. We sell and distribute our heating, ventilation and cooling products through wholesalers, distributors, consulting engineers, contractors and building owners for applications such as warehouses, repair garages, greenhouses, residential garages, schools, data centers, manufacturing facilities, hotels, hospitals, restaurants, stadiums, and retail stores. Our heating products include gas (natural and propane), electric, oil and hydronic unit heaters, low- and high-intensity infrared, and large roof-mounted direct- and indirect-fired makeup air units. Our ventilation products include single-packaged vertical units and unit ventilators used in school room applications, air-handling equipment, and rooftop packaged ventilation units used in a variety of commercial building applications. Our cooling products include precision air conditioning units used primarily for data center cooling applications, air- and water-cooled chillers, and ceiling cassettes, which are also used in a variety of commercial building applications.

Economic conditions, such as demand for new commercial construction, building renovations, including HVAC replacement, growth in data centers and school renovations, and higher efficiency requirements, are growth drivers for our building HVAC products. During fiscal 2018, sales improved across all of our North America product platforms, including heating, ventilation, air conditioning, and aftersales. Our U.K. business experienced sales volume improvements in air-handling equipment and aftersales, but also experienced unfavorable currency impacts during the first half of the fiscal year. Late in fiscal 2018, we made the strategic decision to discontinue manufacturing and selling products to the North American residential geothermal heat pump market and, as a result, recorded a $1.2 million impairment charge for intangible assets we will no longer use.

We expect continued growth in each of the HVAC markets we serve during fiscal 2019. The markets we serve are heavily impacted by construction activity, building regulations, and owner/occupant comfort requirements. Growth rates in these markets have recently shown some strength, as manufacturing, housing, and business investment continue to increase. In fiscal 2019, we expect sales growth in our BHVAC segment through the introduction of new and unique products for the markets we serve and focused market share gains.

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Consolidated Results of Operations

On November 30, 2016, we acquired Luvata HTS for consideration totaling $415.6 million ($388.2 million, net of cash acquired). Operating as our CIS segment, this business is a leading global supplier of coils, coolers and coatings to the heating, ventilation, air conditioning, and refrigeration industry. As we have consolidated CIS financial results since the acquisition date, fiscal 2017 included four months of financial results from CIS operations.

In December 2017, the Tax Cuts and Jobs Act ("Tax Act") was enacted and included numerous changes to existing U.S. tax regulations, including U.S. corporate tax rates, business deductions, and taxes on income in foreign jurisdictions. During fiscal 2018, we recorded provisional charges totaling $38 million for certain income tax effects of the Tax Act. See Note 7 of the Notes to Consolidated Financial Statements for additional information

Fiscal 2018 net sales increased $600 million, or 40 percent, from the prior year, primarily due to $442 million of additional sales from our CIS segment, which we owned for four months of fiscal 2017, and higher sales in all of our other operating segments. Gross profit increased $103 million, including $66 million of additional contribution from our CIS segment. SG&A expenses increased $43 million, primarily due to a $38 million increase in SG&A expenses in our CIS segment. During fiscal 2018, we recorded $16 million of restructuring expenses, primarily related to a facility closure in our CIS segment and targeted headcount reductions in our Europe segment. Fiscal 2018 operating income increased $50 million to $92 million. Our fiscal 2018 net earnings of $24 million increased $9 million compared with the prior year, primarily due to the $50 million increase in operating income, partially offset by $38 million of provisional charges associated with the Tax Act and higher interest expense.

Fiscal 2017 net sales increased $150 million, or 11 percent, from the prior year, primarily due to $178 million of incremental sales from our CIS segment and higher sales in our Asia segment, partially offset by lower sales in our Americas and BHVAC segments. Gross profit increased $20 million, as the CIS segment contributed $26 million of incremental gross profit as compared to fiscal 2016. During fiscal 2017, we recorded $11 million of restructuring expenses for activities intended to better optimize our cost structure and improve the efficiency of our operations. In addition, we incurred $15 million of costs directly related to the acquisition and integration of Luvata HTS. Fiscal 2017 operating income increased $5 million to $42 million. Our fiscal 2017 net earnings of $15 million, as compared with the prior year net loss of $1 million, were favorably impacted by the absence of pension settlement losses totaling $42 million in fiscal 2016.

The following table presents our consolidated financial results on a comparative basis for fiscal years 2018, 2017, and 2016.

	Years ended March 31,					
	2018		2017		2016	
(in millions)	$'s	% of sales	$'s	% of sales	$'s	% of sales
Net sales	$2,103	100.0 %	$1,503	100.0 %	$1,353	100.0 %
Cost of sales	1,747	83.0 %	1,249	83.1 %	1,119	82.7 %
Gross profit	357	17.0 %	254	16.9 %	234	17.3 %
Selling, general and administrative expenses	246	11.7 %	203	13.5 %	170	12.6 %
Restructuring expenses	16	0.8 %	11	0.7 %	17	1.2 %
Impairment charges	3	0.1 %	-	-	10	0.7 %
Gain on sale of facilities	-	-	(2)	-0.1 %	-	-
Operating income	92	4.4 %	42	2.8 %	37	2.7 %
Interest expense	(26)	-1.2 %	(17)	-1.1 %	(11)	-0.8 %
Other expense - net	(3)	-0.2 %	(4)	-0.3 %	(36)	-2.6 %
Earnings (loss) before income taxes	63	3.0 %	21	1.4 %	(10)	-0.7 %
(Provision) benefit for income taxes	(40)	-1.9 %	(6)	-0.4 %	9	0.6 %

Net earnings (loss)	$24	1.1 %	$15	1.0 %	$(1)	-0.1 %

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Year Ended March 31, 2018 Compared with Year Ended March 31, 2017:

Fiscal 2018 net sales increased $600 million, or 40 percent, from the prior year, primarily due to $442 million of additional sales from our CIS segment, which we owned for four months of fiscal 2017, and higher sales in all of our other operating segments, and a $55 million favorable impact of foreign currency exchange rate changes.

Fiscal 2018 gross profit of $357 million increased $103 million from the prior year, primarily due to $66 million of additional gross profit from our recently-acquired CIS segment and higher gross profit in our Asia, BHVAC, and Americas segments. Gross profit was favorably impacted by $9 million from foreign currency exchange rate changes. Gross margin improved 10 basis points to 17.0 percent, primarily due to higher sales volume, savings resulting from cost-reduction initiatives, improved production efficiencies, and the absence of a $4 million inventory purchase accounting adjustment recorded in the prior year, partially offset by unfavorable material costs and incremental depreciation and amortization expense resulting from purchase accounting for Luvata HTS.

Fiscal 2018 SG&A expenses of $246 million increased $43 million from the prior year, primarily due to a $38 million increase in SG&A expenses in our CIS segment, $4 million of strategy consulting fees incurred during the current year, higher compensation-related expenses, and a $4 million unfavorable impact of foreign currency exchange rate changes, partially offset by lower costs incurred related to the acquisition of Luvata HTS. SG&A expenses, as a percentage of net sales, decreased 180 basis points compared with the prior year.

Restructuring expenses of $16 million in fiscal 2018 increased $5 million compared with the prior year, primarily due to severance-related expenses in the CIS segment related to the closure of a manufacturing facility in Austria.

During fiscal 2018, we recorded impairment charges totaling $3 million related to the closure of the CIS manufacturing facility in Austria and the discontinuance of a product line in our BHVAC segment.

During fiscal 2017, we sold two previously-closed manufacturing facilities within our Americas segment and a facility within our Europe segment. As a result of these sales, we recognized net gains totaling $2 million.

Operating income of $92 million in fiscal 2018 represents a $50 million improvement compared with the prior year, primarily due to $18 million of additional operating income contributed by our CIS segment and higher earnings in the Americas, Asia and BHVAC segments.

Fiscal 2018 interest expense increased $9 million compared with the prior year, primarily due to debt issued to finance a significant portion of our acquisition of Luvata HTS.

The provision for income taxes was $40 million and $6 million in fiscal 2018 and 2017, respectively. The $34 million increase was primarily due to $38 million of provisional charges recorded in fiscal 2018 related to the Tax Act and increased operating earnings in the current year, partially offset by income tax benefits totaling $14 million resulting from i) a development tax credit in Hungary ($9 million); ii) the reversal of a portion of the valuation allowance in a foreign jurisdiction ($3 million); and iii) a reduction of unrecognized tax benefits resulting from a lapse in statutes of limitations ($2 million), and the absence of a $2 million provision recorded in the prior year to establish a valuation allowance in a separate foreign jurisdiction. We do not expect the impact of the development tax credit in Hungary to be significant in fiscal 2019. It is possible that we may release the tax valuation allowance (approximately $3 million) in a foreign jurisdiction during fiscal 2019. See Note 7 of the Notes to Consolidated Financial Statements for additional information regarding the Tax Act and income tax valuation allowances.

Year Ended March 31, 2017 Compared with Year Ended March 31, 2016:

Fiscal 2017 net sales increased $150 million, or 11 percent, from the prior year, primarily due to $178 million of incremental sales from our CIS segment and higher sales in our Asia segment, partially offset by lower sales in our Americas and BHVAC segments. Sales volume increases in our BHVAC segment were more than offset by an $11 million unfavorable impact of foreign currency exchange rate changes.

Fiscal 2017 gross profit of $254 million increased $20 million from the prior year, primarily due to $26 million of gross profit contributed by the CIS segment. In addition, foreign currency exchange rate changes negatively impacted fiscal 2017 gross profit by $2 million. Gross margin, however, declined 40 basis points to 16.9 percent, primarily due to temporary production inefficiencies in the Americas segment, a $4 million unfavorable impact of an inventory purchase accounting adjustment, and unfavorable material costs, partially offset by the benefit of cost savings resulting from procurement initiatives.

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Fiscal 2017 SG&A expenses of $203 million increased $33 million from the prior year, primarily due to $19 million of SG&A expenses in our CIS segment and $15 million of costs incurred directly related to the acquisition and integration of Luvata HTS.

Restructuring expenses decreased $6 million in fiscal 2017 compared with the prior year, primarily due to lower severance expenses, partially offset by higher equipment transfer and plant consolidation costs in the Americas segment.

During fiscal 2017, we sold two previously-closed manufacturing facilities within our Americas segment and a facility within our Europe segment. As a result of these sales, we recognized net gains totaling $2 million.

In fiscal 2016, we recorded a $10 million impairment charge to write down the carrying value of a manufacturing facility in Germany to fair value.

Operating income of $42 million in fiscal 2017 represents a $5 million improvement compared with the prior year. Fiscal 2017 operating performance improved in our Europe and Asia segments, while operating performance declined in our Americas and BHVAC segments. Operating income was favorably impacted by the absence of a $10 million impairment charge recognized in the prior year, $8 million of operating income contributed by the CIS segment, and lower restructuring expenses, partially offset by acquisition and integration costs and the impact of the inventory purchase accounting adjustment totaling $19 million.

Fiscal 2017 interest expense increased $6 million compared with the prior year, primarily due to debt issued to finance a significant portion of our acquisition of Luvata HTS.

Other expense in fiscal 2016 included $42 million of pension settlement losses and a $10 million gain related to an insurance settlement for equipment losses resulting from a fire at our Airedale faclility in the U.K. in fiscal 2014.

Our provision for income taxes was $6 million in fiscal 2017, compared with a benefit for income taxes of $9 million in fiscal 2016. The income tax benefit in fiscal 2016 included a $16 million benefit related to pension settlement losses and a $3 million benefit from the reversal of a deferred tax asset valuation allowance in a foreign tax jurisdiction. The income tax provision in fiscal 2017 included a $2 million provision to establish a valuation allowance in a separate foreign tax jurisdiction.

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Segment Results of Operations

Since the date we acquired Luvata HTS (November 30, 2016), we have included CIS segment financial results within our consolidated results of operations. As CIS financial results were not included in our consolidated financial results for the full year in fiscal 2017, we have not provided separate discussion of our CIS segment below. The contributions of our CIS segment are included within the discussion of our consolidated financial results above.

Effective April 1, 2018, we combined our Americas, Europe, and Asia segment operations with the objective of operating as a more global, product-based organization. As part of this segment combination and our CIS integration activities, we also merged our Americas coils business into the CIS segment and expect to achieve operational improvements and organizational efficiencies as a result. Beginning for fiscal 2019, we will report financial results for the new Vehicular Thermal Solutions segment, which will include the current Americas, Europe and Asia segments.

Americas

	Years ended March 31,								
	2018			2017			2016		
(in millions)	$'s	% of sales		$'s	% of sales		$'s	% of sales	
Net sales	$581	100.0	%	$534	100.0	%	$586	100.0	%
Cost of sales	489	84.2	%	447	83.7	%	485	82.9	%
Gross profit	92	15.8	%	87	16.3	%	100	17.1	%
Selling, general and administrative expenses	52	9.0	%	53	10.0	%	55	9.3	%
Restructuring expenses	2	0.3	%	7	1.3	%	9	1.5	%
Gain on sale of facilities	-	-		(1)	-0.2	%	-	-	
Operating income	$38	6.6	%	$28	5.2	%	$37	6.3	%

Year Ended March 31, 2018 Compared with Year Ended March 31, 2017:

Americas net sales increased $47 million, or 9 percent, in fiscal 2018 compared with the prior year, primarily due to higher sales volume to off-highway, commercial vehicle and automotive customers, increased aftermarket sales in Brazil, and a $1 million favorable impact of foreign currency exchange rate changes. Gross profit increased $5 million, primarily due to higher sales volume. Gross margin declined 50 basis points, primarily due to unfavorable material costs and unfavorable sales mix, partially offset by improved production efficiencies. SG&A expenses decreased $1 million, primarily due to the absence of a $2 million charge recorded in the prior year related to a legal matter in Brazil, which has since been settled and paid, partially offset by legal costs incurred for an environmental matter associated with a previously-owned manufacturing facility. Restructuring expenses decreased $5 million, primarily due to lower plant consolidation and severance expenses. Operating income increased $10 million to $38 million, primarily due to higher gross profit and lower restructuring expenses.

Year Ended March 31, 2017 Compared with Year Ended March 31, 2016:

Americas net sales decreased $52 million, or 9 percent, in fiscal 2017 compared with the prior year, primarily due to lower sales volume to commercial vehicle and off-highway customers in North America, partially offset by higher sales volume to automotive customers and a $5 million favorable impact of foreign currency exchange rate changes. Gross profit decreased $13 million and gross margin declined 80 basis points to 16.3 percent in fiscal 2017. These decreases were primarily due to lower sales volume and temporary production inefficiencies in North America, largely related to product launches and plant consolidation activities, partially offset by cost savings resulting from procurement initiatives, favorable material costs and lower environmental costs related to a previously-owned manufacturing facility, as compared with the prior year. Fiscal 2017 SG&A expenses decreased $2 million from fiscal 2016, primarily due to lower compensation-related expenses and a higher recovery of development costs,

partially offset by the $2 million Brazil legal charge. Restructuring expenses decreased $2 million, primarily due to lower severance expenses, partially offset by higher equipment transfer and plant consolidation costs. In addition, we sold two closed manufacturing facilities in North America and recognized gains totaling $1 million as a result. Operating income of $28 million in fiscal 2017 decreased $9 million compared with the prior year, primarily due to lower gross profit.

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Europe

(in millions)	Years ended March 31, 2018 $'s	% of sales		2017 $'s	% of sales		2016 $'s	% of sales	
Net sales	$568	100.0	%	$524	100.0	%	$524	100.0	%
Cost of sales	484	85.3	%	443	84.4	%	455	86.7	%
Gross profit	84	14.7	%	82	15.6	%	70	13.3	%
Selling, general and administrative expenses	45	7.8	%	41	7.9	%	39	7.4	%
Restructuring expenses	6	1.0	%	3	0.6	%	6	1.2	%
Gain on sale of facility	-	-		(1)	-0.2	%	-	-	
Impairment charge	-	-		-	-		10	1.9	%
Operating income	$34	5.9	%	$38	7.3	%	$15	2.8	%

Year Ended March 31, 2018 Compared with Year Ended March 31, 2017:

Europe net sales increased $44 million, or 8 percent, in fiscal 2018 compared with the prior year, primarily due to a $36 million favorable impact of foreign currency exchange rate changes and higher sales volume to automotive and off-highway customers, partially offset by the planned wind-down of certain commercial vehicle programs. Gross profit increased $2 million and was favorably impacted by $6 million from foreign currency exchange rate changes. Gross margin declined 90 basis points to 14.7 percent, primarily due to unfavorable material costs, the absence of favorable customer pricing settlements recorded in the prior year and higher depreciation expense resulting from recent production capacity investments, partially offset by improved production efficiencies. SG&A expenses increased $4 million, primarily due to a $3 million unfavorable impact of foreign currency exchange rate changes and higher compensation-related expenses. Restructuring expenses increased $3 million, primarily due to higher severance expenses and equipment transfer costs. Operating income of $34 million decreased $4 million, primarily due to higher SG&A and restructuring expenses.

Year Ended March 31, 2017 Compared with Year Ended March 31, 2016:

Europe net sales of $524 million in fiscal 2017 were consistent with the prior year, as higher sales volume to automotive customers was offset by lower sales volume to commercial vehicle and off-highway customers and a $3 million unfavorable impact of foreign currency exchange rate changes. Gross profit increased $12 million and gross margin improved 230 basis points to 15.6 percent in fiscal 2017, primarily due to cost savings resulting from procurement initiatives, favorable sales mix, and improved production efficiencies, partially offset by unfavorable material costs. SG&A expenses increased $2 million in fiscal 2017, primarily due to higher compensation-related expenses. Restructuring expenses decreased $3 million, primarily due to lower severance expenses. In addition, we sold a manufacturing facility in Europe and recognized a gain of $1 million as a result. Operating income of $38 million in fiscal 2017 increased $23 million compared with the prior year, primarily due to higher gross profit and the absence of a $10 million impairment charge in the prior year.

Asia

(in millions)	Years ended March 31, 2018 $'s	% of sales		2017 $'s	% of sales		2016 $'s	% of sales	
Net sales	$166	100.0	%	$112	100.0	%	$79	100.0	%
Cost of sales	135	81.7	%	93	83.2	%	67	84.5	%
Gross profit	30	18.3	%	19	16.8	%	12	15.5	%
Selling, general and administrative expenses	13	7.7	%	11	9.9	%	11	14.5	%
Operating income	$18	10.6	%	$8	6.9	%	$1	1.0	%

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Year Ended March 31, 2018 Compared with Year Ended March 31, 2017:

Asia net sales increased $54 million, or 48 percent, in fiscal 2018 compared with the prior year, primarily due to higher sales volume to off-highway customers in all geographic markets that we serve and automotive customers in China and India. Foreign currency exchange rate changes favorably impacted sales in fiscal 2018 by $5 million. Gross profit increased $11 million and gross margin improved 150 basis points to 18.3 percent, primarily due to higher sales volume. SG&A expenses increased $2 million compared with the prior year, yet decreased 220 basis points as a percentage of sales. The increase in SG&A expenses was primarily due to higher compensation-related expenses. Operating income of $18 million increased $10 million, primarily due to higher gross profit.

Year Ended March 31, 2017 Compared with Year Ended March 31, 2016:

Asia net sales increased $33 million, or 42 percent, in fiscal 2017 compared with the prior year, primarily due to higher sales volume to automotive and off-highway customers in China and incremental sales from a joint venture in China that was formed in late fiscal 2016, partially offset by a $4 million unfavorable impact of foreign currency exchange rate changes. Gross profit increased $7 million and gross margin improved 130 basis points to 16.8 percent in fiscal 2017, primarily due to higher sales volume. Fiscal 2017 SG&A expenses were consistent with the prior year. Operating income of $8 million in fiscal 2017 increased $7 million compared with the prior year, primarily due to higher gross profit.

BHVAC

	Years ended March 31,								
	2018			2017			2016		
(in millions)	$'s	% of sales		$'s	% of sales		$'s	% of sales	
Net sales	$191	100.0	%	$172	100.0	%	$181	100.0	%
Cost of sales	133	69.7	%	124	72.2	%	127	70.1	%
Gross profit	58	30.3	%	48	27.8	%	54	29.9	%
Selling, general and administrative expenses	36	18.8	%	34	19.7	%	39	21.6	%
Restructuring expenses	-	0.2	%	1	0.4	%	1	0.6	%
Impairment charge	1	0.7	%	-	-		-	-	
Operating income	$20	10.6	%	$13	7.7	%	$14	7.7	%

Year Ended March 31, 2018 Compared with Year Ended March 31, 2017:

BHVAC net sales increased $19 million, or 11 percent, in fiscal 2018 compared with the prior year, primarily due to higher heating and ventilation product sales in North America and a $1 million favorable impact of foreign currency exchange rate changes. Gross profit increased $10 million and gross margin improved 250 basis points to 30.3 percent, primarily due to higher sales volume and improved production efficiencies in the U.K. SG&A expenses increased $2 million, primarily due to higher commission costs resulting from higher sales. As a percentage of sales, SG&A expenses decreased 90 basis points. Restructuring expenses decreased $1 million, primarily due to the absence of severance expenses incurred in the prior year. During fiscal 2018, we discontinued a geothermal product line and, as a result, recorded a $1 million impairment charge for intangible assets we will no longer use. Operating income of $20 million increased $7 million, primarily due to higher gross profit.

Year Ended March 31, 2017 Compared with Year Ended March 31, 2016:

BHVAC net sales decreased $9 million, or 5 percent, in fiscal 2017 compared with the prior year, primarily due to an $11 million unfavorable impact of foreign currency exchange rate changes and lower school ventilation and heating product sales in North America, partially offset by increased air conditioning product sales in the U.K. Gross profit decreased $6 million and gross margin declined 210 basis points to 27.8 percent in fiscal 2017, primarily due to

unfavorable sales mix, unfavorable material costs and higher depreciation expense in the current year resulting from replacement assets associated with the Airedale fire, which we started to depreciate in the fourth quarter of fiscal 2016. In addition, gross profit was unfavorably impacted by $2 million from foreign currency exchange rate changes. Fiscal 2017 SG&A expenses decreased $5 million from fiscal 2016, primarily due to lower commission costs and compensation-related expenses and a $2 million favorable impact of foreign currency exchange rate changes. In fiscal 2017, we recorded $1 million of restructuring expenses consisting of severance expenses. Operating income of $13 million in fiscal 2017 decreased $1 million compared with the prior year, primarily due to lower gross profit, partially offset by lower SG&A expenses.

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Liquidity and Capital Resources

Our primary sources of liquidity are cash flow from operating activities, our cash and cash equivalents at March 31, 2018 of $39 million, and an available borrowing capacity of $170 million under lines of credit provided by banks in the United States and abroad. Given our extensive international operations, $36 million of our cash and cash equivalents are held by our non-U.S. subsidiaries. Amounts held by non-U.S. subsidiaries are available for general corporate use; however, these funds may be subject to foreign withholding taxes if repatriated. We have not encountered, and do not expect to encounter, any difficulty meeting the liquidity requirements of our global operations.

Net Cash Provided by Operating Activities

Net cash provided by operating activities in fiscal 2018 was $124 million, an increase of $82 million from $42 million in the prior year. This increase in operating cash flow primarily resulted from an increase in operating earnings, including contributions from our CIS segment, lower payments for costs associated with the acquisition and integration of Luvata HTS and restructuring expenses in the current year, and favorable net changes in working capital.

Net cash provided by operating activities in fiscal 2017 was $42 million, a decrease of $30 million from $72 million in the prior year. This decrease in operating cash flow was primarily due to payments for acquisition and integration costs, unfavorable net changes in working capital, and higher payments for restructuring activities.

Capital Expenditures

Capital expenditures of $71 million during fiscal 2018 increased $7 million compared with fiscal 2017, primarily due to capital expenditures by our recently-acquired CIS segment and equipment purchases to expand our manufacturing capacity in Hungary and China. In fiscal 2018, our capital spending primarily occurred in the Europe, Americas, and Asia segments, which totaled $27 million, $22 million and $12 million, respectively, and included tooling and equipment purchases in conjunction with new and renewal programs with customers, as well as investments to expand capacity in Hungary and China.

At March 31, 2018, our capital expenditure commitments totaled $24 million. Significant commitments included tooling and equipment expenditures for new and renewal programs with customers in the Europe, Americas, and Asia segments.

Dividends

We did not pay dividends in fiscal 2018, 2017, or 2016. We currently do not intend to pay dividends in fiscal 2019.

Debt

Our total debt outstanding decreased $32 million to $479 million at March 31, 2018 compared with the prior year, primarily due to repayments of debt, including repayments related to credit agreements used to finance a significant portion of the cash consideration for our acquisition of Luvata HTS in November 2016. See Note 15 of the Notes to Consolidated Financial Statements for additional information regarding our credit agreements.

Our debt agreements require us to maintain compliance with various covenants. As defined in the credit agreement, the term loans require prepayments of excess cash flows in the event our leverage ratio exceeds defined levels, or in the event of certain asset sales. In addition, under our primary debt agreements in the U.S., we are subject to leverage ratio covenants, the most restrictive of which requires us to limit our consolidated indebtedness, less a portion of our

cash balance, both as defined by the credit agreement, to no more than three and one-quarter times consolidated net earnings before interest, taxes, depreciation, amortization, and certain other adjustments (“Adjusted EBITDA”). We are also subject to an interest expense coverage ratio covenant, which requires us to maintain Adjusted EBITDA of at least three times consolidated interest expense. At March 31, 2018, our leverage ratio and interest coverage ratio were 2.4 and 8.3, respectively. We were in compliance with our debt covenants as of March 31, 2018 and expect to remain in compliance during fiscal 2019 and beyond.

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Off-Balance Sheet Arrangements

None.

Contractual Obligations

	March 31, 2018				
(in millions)	Total	Less than 1 year	1 - 3 years	4 - 5 years	More than 5 years
Long-term debt	$423.5	$ 39.5	$ 148.9	$ 201.8	$ 33.3
Interest associated with long-term debt	59.3	18.0	28.2	8.7	4.4
Operating lease obligations	75.1	14.4	22.4	13.7	24.6
Capital expenditure commitments	24.1	21.9	2.2	-	-
Other long-term obligations (a)	33.4	3.5	6.0	5.3	18.6
Total contractual obligations	$615.4	$ 97.3	$ 207.7	$ 229.5	$ 80.9

(a) Includes $19 million for estimated transition tax payments related to the Tax Act, capital lease obligations and other long-term obligations. See Note 7 of the Notes to Consolidated Financial Statements for additional information on the Tax Act.

Our liabilities for pensions, postretirement benefits, and uncertain tax positions totaled $132 million as of March 31, 2018. We are unable to determine the ultimate timing of payments for these liabilities; therefore, we have excluded these amounts from the contractual obligations table above. We expect to contribute $6 million to our U.S. pension plans during fiscal 2019.

Critical Accounting Policies

The following critical accounting policies reflect the more significant judgments and estimates used in preparing our consolidated financial statements. Application of these policies results in accounting estimates that have the greatest potential for a significant impact on our financial statements. The following discussion of these judgments and estimates is intended to supplement the significant accounting policies presented in Note 1 of the Notes to Consolidated Financial Statements. In addition, recently issued accounting pronouncements that could significantly impact our financial statement are included in Note 1 of the Notes to Consolidated Financial Statements.

Acquisitions

From time to time, we make strategic acquisitions that have a material impact on our consolidated results of operations or financial position. We allocate the purchase price of acquired businesses to the identifiable tangible and intangible assets acquired and liabilities assumed in the transaction based upon their estimated fair values as of the acquisition date. We determine the estimated fair values using information available to us and engage third-party valuation specialists when necessary. The estimates we use to determine the fair value of long-lived assets, such as intangible assets, can be complex and require significant judgments. While we use our best estimates and assumptions, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statement of operations. We also estimate the useful lives of intangible assets to determine the amount of amortization expense to record in future periods. We periodically review the estimated useful lives assigned to our intangible assets to determine whether such estimated useful lives continue to be

appropriate. During fiscal 2018, we completed the purchase price allocation for our acquisition of Luvata HTS. See Note 2 of the Notes to Consolidated Financial Statements for additional information.

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Revenue Recognition

We recognize revenue, including agreed-upon commodity prices, when the risks and rewards of ownership are transferred to our customers, which generally occurs upon shipment. Revenue is recorded net of applicable provisions for sales rebates, volume incentives, and returns and allowances. At the time of revenue recognition, we also record estimates for bad debt expense and warranty expense. We base these estimates on historical experience, current business trends, and current economic conditions. We recognize price increases that are agreed upon in advance as revenue when the products are shipped to our customers.

In fiscal 2019, we will adopt new revenue recognition accounting guidance. As a result, we expect to record an increase of less than $1 million to retained earnings as of April 1, 2018. See Note 1 of the Notes to Consolidated Financial Statements for additional information.

Impairment of Long-Lived Assets

We perform impairment evaluations of long-lived assets, including property, plant and equipment, intangible assets and equity investments, whenever business conditions or events indicate that those assets may be impaired. We consider factors such as operating losses, declining financial outlooks and market conditions, when evaluating the necessity for an impairment analysis. When the net asset values exceed undiscounted cash flows expected to be generated by the assets, or the decline in value is considered to be “other than temporary,” we write down the assets to fair value and record an impairment charge to current operations. We estimate fair value in various ways depending on the nature of the underlying assets. Fair value is generally based upon appraised value, estimated salvage value, or selling prices under negotiation, as applicable.

The most significant long-lived assets we evaluated for impairment indicators were property, plant and equipment and intangible assets, which totaled $504 million and $130 million, respectively, at March 31, 2018. Within property, plant and equipment, the most significant assets evaluated are buildings and improvements and machinery and equipment. Our most significant intangible assets evaluated are customer relationships, trade names, and acquired technology, the majority of which are related to our CIS segment. We evaluate impairment at the lowest level of separately identifiable cash flows, which is generally at the manufacturing plant level. We monitor manufacturing plant financial performance to determine whether indicators exist that would require an impairment evaluation for the facility. This includes significant adverse changes in plant profitability metrics; substantial changes in the mix of customer products manufactured in the plant; changes in manufacturing strategy; and the shifting of programs to other facilities under a manufacturing realignment strategy. When such indicators are present, we perform an impairment evaluation. During fiscal 2018, we recorded impairments totaling $3 million related to the closure of a CIS manufacturing facility in Austria and the discontinuance of a product line in our BHVAC segment. See Notes 5 and 12 of the Notes to Consolidated Financial Statements for additional information.

Impairment of Goodwill

We perform goodwill impairment tests annually, as of March 31, unless business events or other conditions exist that require a more frequent evaluation. We consider factors such as operating losses, declining financial and market outlooks, and market capitalization when evaluating the necessity for an interim impairment analysis. We test goodwill for impairment at a reporting unit level. Reporting units resulting from recent acquisitions generally represent the highest risk of impairment, which typically decreases as the businesses are integrated into the Company and positioned for future operating and financial performance. Our first step in the goodwill impairment test is to compare the fair value of the reporting unit to its carrying value. We determine the fair value of a reporting unit based upon the present value of estimated future cash flows. If the fair value of the reporting unit exceeds the carrying value of the unit’s net assets, goodwill of that reporting unit is not impaired and further testing is not required. If the carrying value of the reporting unit’s net assets exceeds the fair value of the unit, then we perform the second step of the

impairment test to determine the implied fair value of the reporting unit's goodwill and any impairment charge. In estimating the implied fair value of goodwill for a reporting unit, we assign fair value to the assets and liabilities associated with the reporting unit as if the reporting unit had been acquired in a business combination. Any excess of the carrying value of the reporting unit goodwill over its implied fair value is recorded as an impairment charge. Determining the fair value of a reporting unit involves judgment and the use of significant estimates and assumptions, which include assumptions regarding the revenue growth rates and operating profit margins used to calculate estimated future cash flows, the risk-adjusted discount rate, business trends and market conditions. We determine the expected future revenue growth rates and operating profit margins after consideration of our historical revenue growth rates and earnings levels, our assessment of future market potential and our expectations of future business performance. The discount rate used in determining discounted cash flows is a rate corresponding to our cost of capital, adjusted for country-specific risks where appropriate.

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At March 31, 2018, our goodwill totaled $174 million, primarily related to our CIS and BHVAC segments. We conducted annual goodwill impairment tests for our CIS, BHVAC and Asia segments during the fourth quarter of fiscal 2018 by applying a fair value-based test and determined the fair value of the reporting units exceeded their respective book values.

Warranty Costs

We estimate costs related to product warranties and accrue for such costs at the time of the sale, within cost of sales. We estimate warranty costs based upon the best information available, which includes statistical and analytical analysis of both historical and current claim data. We adjust our warranty accruals, which totaled $9 million at March 31, 2018, if it is probable that expected claims will differ from previous estimates.

Pension Obligations

Our calculation of the expense and liabilities of our pension plans is dependent upon various assumptions. At March 31, 2018, our pension liabilities totaled $116 million. The most significant assumptions include the discount rate, long-term expected return on plan assets, and mortality rate tables. We base our selection of assumptions on historical trends and economic and market conditions at the time of valuation. In accordance with U.S. GAAP, actual results that differ from these assumptions are accumulated and amortized over future periods. These differences impact future pension expenses. Currently, participants in our domestic pension plans are not accruing benefits based upon their current service as the plans do not include increases in annual earnings or for future service in calculating the average annual earnings and years of credited service under the pension plan formula.

For the following discussion regarding sensitivity of assumptions, all amounts presented are in reference to our domestic pension plans, since our domestic plans comprise all of our benefit plan assets and the large majority of our pension plan expense.

To determine the expected rate of return on pension plan assets, we consider such factors as (a) the actual return earned on plan assets, (b) historical rates of return on the various asset classes in the plan portfolio, (c) projections of returns on those asset classes, (d) the amount of active management of the assets, (e) capital market conditions and economic forecasts, and (f) administrative expenses paid with the plan assets. The long-term rate of return utilized in fiscal 2018 and 2017 was 7.5 percent and 8.0 percent, respectively. For fiscal 2019, we have assumed a rate of 7.5 percent. A change of 25 basis points in the expected rate of return on assets would impact our fiscal 2019 pension expense by $0.4 million.

The discount rate reflects rates available on long-term, high-quality fixed-income corporate bonds on the measurement date of March 31. For fiscal 2018 and 2017, for purposes of determining our costs, we used a discount rate of 4.1 percent. We determined these rates based upon a yield curve that was created following an analysis of the projected cash flows from the affected plans. See Note 16 of the Notes to Consolidated Financial Statements for additional information. A change in the assumed discount rate of 25 basis points would impact our fiscal 2019 pension expense by less than $1 million.

Income Taxes

We operate in numerous taxing jurisdictions; therefore, we are subject to regular examinations by federal, state and non-U.S. taxing authorities. Due to the application of complex and sometimes ambiguous tax laws and rulings in the jurisdictions in which we do business, there is an inherent level of uncertainty within our worldwide tax provisions. Despite our belief that our tax return positions are consistent with applicable tax laws, it is possible that taxing authorities could challenge certain positions.

The Tax Act was enacted in December 2017 and included numerous changes to existing U.S. tax regulations, including U.S. corporate tax rates, business deductions, and taxes on income in foreign jurisdictions. Following the enactment, the Securities and Exchange Commission issued accounting guidance providing a one-year measurement period during which a company may complete its accounting for the impacts of the the Tax Act. During fiscal 2018, we recorded provisional charges totaling $38 million for certain income tax effects of the Tax Act. Our provisional estimates could be impacted based upon further analysis of the requirements and interpretive guidance associated with the Tax Act.

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Our deferred tax assets and liabilities reflect temporary differences between the amount of assets and liabilities for financial and tax reporting purposes. We adjust these amounts to reflect changes in tax rates expected to be in effect when the temporary differences reverse. We record a valuation allowance if we determine it is more likely than not that the net deferred tax assets in a particular jurisdiction will not be realized. This determination involves significant judgment. In performing this assessment on a jurisdiction-by-jurisdiction basis, we consider historical and projected financial results along with other pertinent information.

See Note 7 of the Notes to Consolidated Financial Statements for additional information regarding income taxes.

Other Loss Reserves

We maintain liabilities and reserves for a number of other loss exposures, such as environmental remediation costs, self-insurance reserves, uncollectible accounts receivable, regulatory compliance matters, and litigation. Establishing loss reserves for these exposures requires the use of estimates and judgment to determine the risk exposure and ultimate potential liability. We estimate these reserve requirements by using consistent and suitable methodologies for the particular type of loss reserve being calculated. See Note 18 of the Notes to Consolidated Financial Statements for additional information regarding contingencies and litigation.

Forward-Looking Statements

This report, including, but not limited to, the discussion under Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, contains statements, including information about future financial performance, accompanied by phrases such as "believes," "estimates," "expects," "plans," "anticipates," "intends," and other similar "forward-looking" statements, as defined in the Private Securities Litigation Reform Act of 1995. Modine's actual results, performance or achievements may differ materially from those expressed or implied in these statements, because of certain risks and uncertainties, including, but not limited to, those described under "Risk Factors" in Item 1A. in Part I. of this report and identified in our other public filings with the U.S. Securities and Exchange Commission. Other risks and uncertainties include, but are not limited to, the following:

Market Risks:

- Economic, social and political conditions, changes, challenges and unrest, particularly in the geographic, product and financial markets where we and our customers operate and compete, including, in particular, foreign currency exchange rate fluctuations, tariffs, inflation, changes in interest rates, recession and recovery therefrom, restrictions and uncertainty associated with cross-border trade, and the general uncertainties about the impact of regulatory and/or policy changes, including those related to tax and trade, that have been or may be implemented in the United States or by its trade partners, as well as continuing uncertainty regarding the longer-term implications of "Brexit";

- The impact of potential increases in commodity prices, which may be impacted by a variety of factors, including changes in trade laws and tariffs, and our ability to successfully manage our exposure and/or pass increasing prices of aluminum, copper, steel and stainless steel (nickel) on to customers, as well as the inherent lag in timing of such pass-through arrangements; and

- The impact of current and future environmental laws and regulations on our business and the businesses of our customers, including our ability to take advantage of opportunities to supply alternative new technologies to meet environmental and/or energy standards and objectives.

Operational Risks:

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Our ability to realize cost and revenue synergies associated with our acquisition of Luvata HTS in accordance with our expectations, and to effectively manage any unanticipated risks that arise;

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- The overall health and continually increasing price-down focus of our vehicular customers in light of economic and market-specific factors, and the potential impact on us from any deterioration in the stability or performance of any of our major customers;

- Our ability to maintain current customer programs and compete effectively for new business, including our ability to offset or otherwise address increasing pricing pressures from competitors and price reduction and overall service pressures from customers, particularly in the face of macro-economic instability;

- Unanticipated product or manufacturing difficulties or inefficiencies, including unanticipated program launch and product transfer challenges and warranty claims;

- Unanticipated delays or modifications initiated by major customers with respect to product launches, product applications or requirements;

- Unanticipated problems with suppliers meeting our time, quantity, quality and price demands, and the overall health of our suppliers;

- Our ability to consistently structure our operations in order to develop and maintain a competitive cost base with appropriately skilled and stable labor, while also positioning ourselves geographically, so that we can continue to support our customers with the technical expertise and market-leading products they demand and expect from Modine;

- Our ability to effectively and efficiently complete restructuring activities and realize the anticipated benefits thereof;

- Our ability to recruit and maintain managerial and leadership talent in light of tightening global labor markets;

- Our ability to protect our proprietary information and intellectual property from theft or attack by internal or external sources;

- Costs and other effects of the investigation and remediation of environmental contamination; particularly when related to the actions or inactions of others and/or facilities over which we have no control;

- Increasingly complex and restrictive laws and regulations, including those associated with being a U.S. public company and others present in various jurisdictions in which we operate, and the costs associated with compliance therewith;

- Work stoppages or interference at our facilities or those of our major customers and/or suppliers;

- The constant and increasing pressures associated with healthcare and associated insurance costs; and

- Costs and other effects of unanticipated litigation, claims, or other obligations.

Strategic Risks:

- Our ability to successfully take advantage of our increased presence in the “industrial” markets, with our CIS and BHVAC businesses, while maintaining appropriate focus on the market opportunities presented by our vehicular business;

- Our ability to identify and execute additional growth and diversification opportunities in order to position us for long-term success; and

- The potential expense, disruption or other impacts that could result from unanticipated actions by activist shareholders.

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Financial Risks:

- Our ability to fund our global liquidity requirements efficiently for Modine's current operations and meet our long-term commitments in the event of an unexpected disruption in or tightening of the credit markets or extended recessionary conditions in the global economy;

- The impact of potential increases in interest rates, particularly in LIBOR and EURIBOR in relation to our variable-rate debt obligations;

- Our ability to maintain our leverage ratio (net debt divided by Adjusted EBITDA, as defined in our credit agreements) in our target range of 1.5 to 2.5 in an efficient manner;

- The impact of foreign currency exchange rate fluctuations, particularly the value of the euro, Brazilian real, and British pound, relative to the U.S. dollar;

- The effects of the recently-enacted tax reform legislation in the U.S. on our business, some of which are uncertain and may be material; and

- Our ability to effectively realize the benefits of deferred tax assets in various jurisdictions in which we operate.

We do not assume any obligation to update any forward-looking statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

In the normal course of business, we are subject to market exposure from changes in foreign currency exchange rates, interest rates, commodity prices, credit risk and economic conditions.

Foreign Currency Risk

We are subject to the risk of changes in foreign currency exchange rates due to our operations in foreign countries. We have manufacturing facilities in Brazil, China, India, Mexico, South Africa, and throughout Europe. We also have joint ventures in China, Japan and South Korea. We sell and distribute products throughout the world and also purchase raw materials from suppliers in foreign countries. As a result, our financial results are affected by changes in foreign currency exchange rates and economic conditions in the foreign markets in which we do business. Whenever possible, we attempt to mitigate foreign currency risks on transactions with customers and suppliers in foreign countries by entering into contracts that are denominated in the functional currency of the entity engaging in the transaction. In addition, for certain transactions that are denominated in a currency other than the engaging entity's functional currency, we may enter into currency rate derivative contracts to further manage our foreign currency risk. In fiscal 2018, we recorded realized and unrealized foreign currency gains and losses that netted to a loss of $0.6 million, which we reported in other income and expense in the consolidated statement of operations. In addition, our consolidated financial results are impacted by the translation of revenue and expenses in foreign currencies into U.S. dollars. These translation impacts are affected by changes in exchange rates between the U.S. dollar and European currencies, primarily the euro, and changes between the U.S. dollar and the Brazilian real. In fiscal 2018, more than 50 percent of our sales were generated in countries outside the U.S. A change in foreign currency exchange rates will positively or negatively affect our sales; however, this impact will be offset, usually to a large degree, with a corresponding effect on our cost of sales and other expenses. In fiscal 2018, changes in foreign currency exchange rates positively impacted our sales by $55 million; however, the impact on our operating income was less than $3 million. Foreign currency exchange rate risk can be estimated by measuring the impact of a near-term adverse movement of 10 percent in foreign currency exchange rates. If these rates were 10 percent higher or lower during fiscal 2018, there would not have been a material impact on our fiscal 2018 earnings.

We maintain foreign-denominated, long-term debt obligations and long-term intercompany loans that are subject to foreign currency exchange risk. We seek to mitigate this risk through maintaining offsetting positions between external and intercompany loans; however, from time to time, we also enter into currency rate derivative contracts to manage the foreign exchange rate exposure. These derivative instruments are typically not accounted for as hedges, and accordingly, gains or losses on the derivatives are recorded in other income and expense in the consolidated statements of operations and act to offset any currency movement on the outstanding loans receivable or payable.

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Interest Rate Risk

We seek to reduce the potential volatility of earnings that could arise from changes in interest rates. We generally utilize a mixture of debt maturities and both fixed-rate and variable-rate debt to manage exposure to changes in interest rates. Interest on both our term loans and borrowings under our primary multi-currency revolving credit facility is based upon a variable interest rate, primarily either the London Interbank Offered Rate ("LIBOR") or Euro Interbank Offered Rate ("EURIBOR"), plus 137.5 to 250 basis points, depending on our leverage ratio. We are subject to risk of fluctuations in LIBOR and EURIBOR and changes in our leverage ratio, which would affect the variable interest rate on our term loans and revolving credit facility and could create variability in interest expense. As of March 31, 2018, our outstanding borrowings on variable-rate term loans and revolving credit facility totaled $268 million and $21 million, respectively. Based upon our outstanding debt with variable interest rates at March 31, 2018, a 100 basis point increase in interest rates would increase our annual interest expense in fiscal 2019 by approximately $3 million.

Commodity Price Risk

We are dependent upon the supply of raw materials and supplies in our production processes and, from time to time, enter into firm purchase commitments for aluminum, copper, nickel, and natural gas. We maintain agreements with certain customers to pass through specified raw material price fluctuations in order to mitigate commodity price risk. The majority of these agreements contain provisions in which the pass-through of the price fluctuations can lag behind the actual fluctuations by three months or longer, and typically the arrangements are limited to the underlying material cost based upon the London Metal Exchange and exclude additional cost elements, such as fabrication.

Credit Risk

Credit risk represents the possibility of loss from a customer failing to make payment according to contract terms. Our principal credit risk consists of outstanding trade accounts receivable. At March 31, 2018, 36 percent of our trade accounts receivable balance was concentrated with our top ten customers. These customers operate primarily in the automotive, commercial vehicle, and off-highway markets and are influenced by similar market and general economic factors. In the past, credit losses from our customers have not been significant.

We manage credit risk through a focus on the following:

- Cash and investments – We review cash deposits and short-term investments to ensure banks have acceptable credit ratings, and short-term investments are maintained in secured or guaranteed instruments. We consider our holdings in cash and investments to be stable and secure at March 31, 2018;
- Trade accounts receivable – Prior to granting credit, we evaluate each customer, taking into consideration the customer's financial condition, payment experience and credit information. After credit is granted, we actively monitor the customer's financial condition and applicable business news;
- Pension assets – We have retained outside advisors to assist in the management of the assets in our pension plans. In making investment decisions, we utilize an established risk management protocol that focuses on protection of the plan assets against downside risk. We ensure that investments within these plans provide appropriate diversification, the investments are monitored by investment teams, and portfolio managers adhere to the established investment policies. We believe the plan assets are subject to appropriate investment policies and controls; and
- Insurance – We monitor our insurance providers to ensure they have acceptable financial ratings. We have not identified any concerns in this regard based upon our reviews.

Economic Risk

Economic risk represents the possibility of loss resulting from economic instability in certain areas of the world or downturns in markets in which we operate. We sell a broad range of products that provide thermal solutions to customers operating primarily in the automotive, commercial vehicle, off-highway, and commercial, industrial, and building HVAC&R markets. We operate in diversified markets as a strategy for offsetting the risk associated with a downturn in any of the markets we serve. However, risk associated with market downturns is still present.

We monitor economic conditions in the U.S. and abroad. As we expand our global presence, we also encounter risks imposed by potential trade restrictions, including tariffs, embargoes, and the like. We continue to pursue non-speculative opportunities to mitigate these economic risks, and capitalize, when possible, on changing market conditions.

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We pursue new market opportunities after careful consideration of the potential associated risks and benefits. Successes in new markets are dependent upon our ability to commercialize our investments. Current examples of new and emerging markets for us include those related to electric vehicles, coils and coolers in certain markets, and coatings. Our investment in these areas is subject to the risks associated with technological success, customer and market acceptance, and our ability to meet the demands of our customers as these markets grow.

In an effort to manage and reduce our costs, we have been consolidating our supply base. As a result, we are dependent upon limited sources of supply for certain components used in the manufacture of our products, including aluminum, copper, steel and stainless steel (nickel). We are exposed to the risk of suppliers of certain raw materials not being able to meet strong customer demand (including the potential effects of trade laws and tariffs), as they may not increase their output capacity as quickly as customers increase their orders, and of increased prices being charged by raw material suppliers.

In addition, we purchase parts from suppliers that use our tooling to create the parts. In most instances, and for financial reasons, we do not have duplicate tooling for the manufacture of the purchased parts. As a result, we are exposed to the risk of a supplier being unable to provide the quantity or quality of parts that we require. Even in situations where suppliers are manufacturing parts without the use of our tooling, we face the challenge of obtaining consistently high-quality parts from suppliers that are financially stable. We utilize a supplier risk management program that leverages internal and third-party tools to identify and mitigate higher-risk supplier situations.

In addition to the above risks on the supply side, we are also exposed to risks associated with demands by our customers for decreases in the price of our products. We attempt to offset this risk with firm agreements with our customers whenever possible, but these agreements sometimes contain provisions for future price reductions. In addition, customers occasionally link price reductions to future program awards, and we must assess the overall implications of such requests on a case-by-case basis.

Hedging and Foreign Currency Forward Contracts

We use derivative financial instruments as a tool to manage certain financial risks. We prohibit the use of leveraged derivatives.

Commodity derivatives: From time to time, we enter into over-the-counter forward contracts related to forecasted purchases of aluminum and copper. Our strategy is to reduce our exposure to changing market prices of these commodities. In fiscal 2018, we designated certain commodity forward contracts as cash flow hedges for accounting purposes. Accordingly, for these designated hedges, we record unrealized gains and losses related to the change in the fair value of the contracts in other comprehensive income (loss) within shareholders' equity and subsequently recognize the gains and losses within cost of sales as the underlying inventory is sold. In fiscal 2017 and 2016, we did not designate commodity forward contracts for hedge accounting. Accordingly, unrealized gains and losses on these contracts have been recorded within cost of sales. In fiscal 2018, 2017 and 2016, net gains and losses related to commodity forward contracts were less than $1 million in each year.

Foreign currency forward contracts: We use derivative financial instruments in a limited way to mitigate foreign currency exchange risk. We periodically enter into foreign currency forward contracts to hedge specific foreign currency-denominated assets and liabilities as well as forecasted transactions. We have designated certain hedges of forecasted transactions as cash flow hedges for accounting purposes. Accordingly, for these designated hedges, we record unrealized gains and losses related to the change in the fair value of the contracts in other comprehensive income (loss) within shareholders' equity and subsequently recognize the gains and losses as a component of earnings at the same time and in the same financial statement line item that the underlying transactions impact earnings. We have not designated forward contracts related to foreign currency-denominated assets and liabilities as hedges. Accordingly, for these non-designated contracts, we record unrealized gains and losses related to the change in the fair

value of the contracts in other income and expense. Gains and losses on these non-designated foreign currency forward contracts are offset by foreign currency gains and losses associated with the related assets and liabilities.

Counterparty risks: We manage counterparty risks by ensuring that counterparties to derivative instruments have credit ratings acceptable to us. At March 31, 2018, all counterparties had a sufficient long-term credit rating.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

MODINE MANUFACTURING COMPANY
CONSOLIDATED STATEMENTS OF OPERATIONS
For the years ended March 31, 2018, 2017 and 2016
(In millions, except per share amounts)

	2018	2017	2016
Net sales	$2,103.1	$1,503.0	$1,352.5
Cost of sales	1,746.6	1,248.6	1,118.9
Gross profit	356.5	254.4	233.6
Selling, general and administrative expenses	245.8	203.2	170.0
Restructuring expenses	16.0	10.9	16.6
Impairment charges	2.5	-	9.9
Gain on sale of facilities	-	(2.0)	-
Operating income	92.2	42.3	37.1
Interest expense	(25.6)	(17.2)	(11.1)
Other expense - net	(3.3)	(4.3)	(35.9)
Earnings (loss) before income taxes	63.3	20.8	(9.9)
(Provision) benefit for income taxes	(39.5)	(5.9)	8.9
Net earnings (loss)	23.8	14.9	(1.0)
Net earnings attributable to noncontrolling interest	(1.6)	(0.7)	(0.6)
Net earnings (loss) attributable to Modine	$22.2	$14.2	$(1.6)
Net earnings (loss) per share attributable to Modine shareholders:			
Basic	$0.44	$0.29	$(0.03)
Diluted	$0.43	$0.29	$(0.03)
Weighted-average shares outstanding:			
Basic	49.9	47.8	47.3
Diluted	50.9	48.3	47.3

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

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MODINE MANUFACTURING COMPANY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
For the years ended March 31, 2018, 2017 and 2016
(In millions)

	2018	2017	2016
Net earnings (loss)	$23.8	$14.9	$(1.0)
Other comprehensive income (loss):			
Foreign currency translation	41.8	(10.8)	4.6
Defined benefit plans, net of income taxes of ($0.2), $1.7 and $11.8 million	0.1	3.2	19.7
Cash flow hedges, net of income taxes of $0.1, $0 and $0 million	0.1	-	-
Total other comprehensive income (loss)	42.0	(7.6)	24.3
Comprehensive income (loss)	65.8	7.3	23.3
Comprehensive income attributable to noncontrolling interest	(2.1)	(0.7)	(0.5)
Comprehensive income attributable to Modine	$63.7	$6.6	$22.8

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

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MODINE MANUFACTURING COMPANY
CONSOLIDATED BALANCE SHEETS
March 31, 2018 and 2017
(In millions, except per share amounts)

	2018	2017
ASSETS		
Cash and cash equivalents	$39.3	$34.2
Trade accounts receivable – net	342.4	295.2
Inventories	191.3	168.5
Other current assets	70.1	55.4
Total current assets	643.1	553.3
Property, plant and equipment – net	504.3	459.0
Intangible assets – net	129.9	134.1
Goodwill	173.8	165.1
Deferred income taxes	96.9	108.4
Other noncurrent assets	25.4	29.6
Total assets	$1,573.4	$1,449.5
LIABILITIES AND SHAREHOLDERS' EQUITY		
Short-term debt	$53.2	$73.4
Long-term debt – current portion	39.9	31.8
Accounts payable	277.9	230.3
Accrued compensation and employee benefits	97.3	74.8
Other current liabilities	47.2	45.1
Total current liabilities	515.5	455.4
Long-term debt	386.3	405.7
Deferred income taxes	9.9	9.7
Pensions	109.6	119.4
Other noncurrent liabilities	53.6	38.1
Total liabilities	1,074.9	1,028.3
Commitments and contingencies (see Note 18)		
Shareholders' equity:		
Preferred stock, $0.025 par value, authorized 16.0 million shares, issued - none	-	-
Common stock, $0.625 par value, authorized 80.0 million shares, issued 52.3 million and 51.8 million shares	32.7	32.4
Additional paid-in capital	229.9	216.4
Retained earnings	394.9	372.4
Accumulated other comprehensive loss	(140.3)	(181.8)
Treasury stock, at cost, 1.8 million and 1.7 million shares	(27.1)	(25.4)
Total Modine shareholders' equity	490.1	414.0
Noncontrolling interest	8.4	7.2
Total equity	498.5	421.2
Total liabilities and equity	$1,573.4	$1,449.5

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

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MODINE MANUFACTURING COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended March 31, 2018, 2017 and 2016
(In millions)

	2018	2017	2016
Cash flows from operating activities:			
Net earnings (loss)	$23.8	$14.9	$(1.0)
Adjustments to reconcile net earnings (loss) to net cash provided by operating activities:			
Depreciation and amortization	76.7	58.3	50.2
Stock-based compensation expense	9.5	7.4	4.9
Impairment charges	2.5	-	9.9
Gain on sale of facilities	-	(2.0)	-
Deferred income taxes	12.1	(4.6)	(18.8)
Pension and postretirement expense	3.9	3.4	45.1
Insurance proceeds from Airedale fire	-	-	5.9
Other – net	5.1	0.5	0.1
Changes in operating assets and liabilities, excluding acquisitions:			
Trade accounts receivable	(26.1)	(25.7)	8.0
Inventories	(12.5)	(3.3)	(2.7)
Accounts payable	25.2	19.9	(9.9)
Accrued compensation and employee benefits	16.4	(6.5)	0.8
Other assets	(5.4)	(2.5)	(14.5)
Other liabilities	(7.4)	(18.2)	(5.6)
Net cash provided by operating activities	123.8	41.6	72.4
Cash flows from investing activities:			
Expenditures for property, plant and equipment	(71.0)	(64.4)	(62.8)
Acquisitions – net of cash acquired	-	(364.2)	(1.4)
Proceeds from dispositions of assets	0.3	5.7	0.4
Purchases of short-term investments	(5.5)	(3.5)	(2.7)
Proceeds from maturities of short-term investments	4.8	2.2	2.1
Insurance proceeds from Airedale fire	-	3.0	27.4
Costs to replace building and equipment damaged in Airedale fire	-	(1.0)	(41.7)
Other – net	(0.2)	-	0.9
Net cash used for investing activities	(71.6)	(422.2)	(77.8)
Cash flows from financing activities:			
Borrowings of debt	171.0	559.1	38.0
Repayments of debt	(222.9)	(202.4)	(27.1)
Dividend paid to noncontrolling interest	(0.9)	-	(0.9)
Financing fees paid	-	(8.7)	-
Purchases of treasury stock under share repurchase program	-	-	(6.9)
Other – net	2.7	(0.4)	(0.4)
Net cash (used for) provided by financing activities	(50.1)	347.6	2.7
Effect of exchange rate changes on cash	3.0	(1.7)	1.1
Net increase (decrease) in cash and cash equivalents	5.1	(34.7)	(1.6)
Cash and cash equivalents - beginning of year	34.2	68.9	70.5
Cash and cash equivalents - end of year	$39.3	$34.2	$68.9

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

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MODINE MANUFACTURING COMPANY
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
For the years ended March 31, 2018, 2017 and 2016
(In millions)

	Common stock Shares	Common stock Amount	Additional paid-in capital	Retained earnings	Accumulated other comprehensive loss	Treasury stock, at cost	Non-controlling interest	Total
Balance, March 31, 2015	48.6	$ 30.4	$ 180.6	$ 359.8	$ (198.6)	$ (16.2)	$ 4.6	$ 360.6
Net loss attributable to Modine	-	-	-	(1.6)	-	-	-	(1.6)
Other comprehensive income	-	-	-	-	24.4	-	(0.1)	24.3
Stock options and awards including related tax benefits	0.4	0.2	0.1	-	-	-	-	0.3
Purchase of treasury stock	-	-	-	-	-	(7.8)	-	(7.8)
Stock-based compensation expense	-	-	4.9	-	-	-	-	4.9
Contribution by noncontrolling interest	-	-	-	-	-	-	2.3	2.3
Dividend paid to noncontrolling interest	-	-	-	-	-	-	(0.9)	(0.9)
Net earnings attributable to noncontrolling interest	-	-	-	-	-	-	0.6	0.6
Balance, March 31, 2016	49.0	30.6	185.6	358.2	(174.2)	(24.0)	6.5	382.7
Net earnings attributable to Modine	-	-	-	14.2	-	-	-	14.2
Other comprehensive loss	-	-	-	-	(7.6)	-	-	(7.6)
Shares issued for acquisition of Luvata HTS	2.2	1.4	22.9	-	-	-	-	24.3
Stock options and awards including related tax benefits	0.6	0.4	0.5	-	-	-	-	0.9
Purchase of treasury stock	-	-	-	-	-	(1.4)	-	(1.4)
Stock-based compensation expense	-	-	7.4	-	-	-	-	7.4
Net earnings attributable to noncontrolling interest	-	-	-	-	-	-	0.7	0.7
Balance, March 31, 2017	51.8	32.4	216.4	372.4	(181.8)	(25.4)	7.2	421.2
Net earnings attributable to Modine	-	-	-	22.2	-	-	-	22.2
Other comprehensive income	-	-	-	-	41.5	-	0.5	42.0
Stock options and awards	0.5	0.3	3.9	-	-	-	-	4.2
Purchase of treasury stock	-	-	-	-	-	(1.7)	-	(1.7)
Adoption of new accounting guidance –stock based compensation (Note 1)	-	-	0.1	0.3	-	-	-	0.4
Stock-based compensation expense	-	-	9.5	-	-	-	-	9.5
Dividend paid to noncontrolling interest	-	-	-	-	-	-	(0.9)	(0.9)
Net earnings attributable to noncontrolling interest	-	-	-	-	-	-	1.6	1.6
Balance, March 31, 2018	52.3	$ 32.7	$ 229.9	$ 394.9	$ (140.3)	$ (27.1)	$ 8.4	$ 498.5

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

MODINE MANUFACTURING COMPANY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(In millions, except per share amounts)

Note 1: Significant Accounting Policies

Nature of operations: Modine Manufacturing Company ("Modine" or the "Company") specializes in providing innovative thermal management solutions to diversified global markets and customers. The Company is a leading provider of engineered heat transfer systems and high-quality heat transfer components for use in on- and off-highway original equipment manufacturer ("OEM") vehicular applications. In addition, the Company is a global leader in thermal management technology and solutions for sale into a wide array of commercial, industrial, and building heating, ventilating, air conditioning, and refrigeration ("HVAC&R") markets. The Company's primary product groups include i) powertrain cooling and engine cooling; ii) coils, coolers, and coatings; and iii) heating, ventilation and air conditioning.

Acquisition of Luvata HTS: On November 30, 2016, the Company completed the acquisition of 100 percent of the shares of multiple companies held by Luvata Heat Transfer Solutions II AB, a company incorporated in Sweden. Combined, these acquired companies represented the Luvata Heat Transfer Solutions ("Luvata HTS") business. See Note 2 for additional information.

Basis of presentation: The Company prepares its consolidated financial statements in conformity with generally accepted accounting principles ("GAAP") in the United States. These principles require management to make certain estimates and assumptions in determining assets, liabilities, revenue, expenses and related disclosures. Actual amounts could differ materially from those estimates.

Consolidation principles: The consolidated financial statements include the accounts of Modine Manufacturing Company and its majority-owned or Modine-controlled subsidiaries. The Company eliminates intercompany transactions and balances in consolidation.

The Company accounts for investments in non-consolidated affiliated companies in which its ownership is 20 percent or more using the equity method. The Company states these investments at cost, plus or minus a proportionate share of undistributed net earnings. The Company includes Modine's share of the affiliate's net earnings in other income and expense. See Note 11 for additional information.

Airedale facility fire: In September 2013, a fire caused significant destruction to the Company's Airedale manufacturing facility and offices in Rawdon (Leeds), United Kingdom. The Company reports Airedale's financial results within the Building HVAC ("BHVAC") segment. During fiscal 2016, the Company completed the reconstruction of the Rawdon facility and recorded a $9.5 million gain within other income related to an insurance settlement for equipment losses. This gain represented the replacement assets' cost in excess of the carrying value of the equipment at the time they were destroyed by the fire.

Revenue recognition: The Company recognizes sales revenue, including agreed upon commodity prices, when it is both earned and realized or realizable. The Company's policy is to recognize revenue when title to the product and risk of loss have transferred to the customer, persuasive evidence of an arrangement exists, and collection of the sales proceeds is reasonably assured, all of which generally occur upon shipment of goods to customers. The Company makes appropriate provisions for uncollectible accounts receivable based upon historical data or specific customer economic data. The Company records sales discounts, which are offered for prompt payment by certain customers, as a reduction to net sales.

Tooling costs: The Company accounts for production tooling costs as a component of property, plant and equipment when it owns title to the tooling and amortizes the capitalized cost to cost of sales over the estimated life of the asset, which is generally three years. At March 31, 2018 and 2017, Company-owned tooling totaled $22.4 million and $20.8 million, respectively. In certain instances, the Company makes upfront payments for customer-owned tooling costs, and subsequently receives reimbursement from customers for the upfront payments. At the time customer-owned tooling is completed and customer acceptance is obtained, the Company records tooling revenue and related production costs within net sales and cost of sales, respectively, in its consolidated statements of operations. The Company accounts for unbilled customer-owned tooling costs as a receivable within other current assets when the customer has guaranteed reimbursement to the Company. No significant arrangements exist where customer-owned tooling costs were not accompanied by guaranteed reimbursement. At March 31, 2018 and 2017, cost reimbursement receivables related to customer-owned tooling totaled $10.7 million and $7.8 million, respectively.

Warranty: The Company provides product warranties for specific product lines and accrues for estimated future warranty costs in the period in which the sale is recorded. The Company records warranty expense, within cost of sales, based upon historical and current claims data or based upon estimated future claims. Accrual balances, which are recorded within other current liabilities, are monitored and adjusted if it is probable that expected claims will differ from previous estimates. See Note 14 for additional information.

Shipping and handling costs: The Company records shipping and handling costs incurred upon the shipment of products to its customers in cost of sales, and related amounts billed to these customers in net sales.

Stock-based compensation: The Company recognizes stock-based compensation using the fair value method. Accordingly, compensation expense for stock options, restricted stock and performance-based stock awards is calculated based upon the fair value of the instruments at the time of grant, and is recognized as expense over the respective vesting periods. See Note 4 for additional information.

Research and development: The Company expenses research and development costs as incurred within selling, general and administrative ("SG&A") expenses. For the years ended March 31, 2018, 2017, and 2016, research and development costs charged to operations totaled $65.8 million, $64.4 million, and $61.1 million, respectively.

Translation of foreign currencies: The Company translates assets and liabilities of foreign subsidiaries and equity investments into U.S. dollars at the period-end exchange rates, and translates income and expense items at the monthly average exchange rate for the period in which the transactions occur. The Company reports resulting translation adjustments within accumulated other comprehensive income (loss) within shareholders' equity. The Company includes foreign currency transaction gains or losses in the statement of operations within other income and expense.

Derivative instruments: The Company enters into derivative financial instruments from time to time to manage certain financial risks. The Company enters into forward contracts to reduce exposure to changing future purchase prices for aluminum and copper and into foreign currency exchange contracts to hedge specific foreign currency-denominated assets and liabilities as well as forecasted transactions. The Company designates certain derivative financial instruments as cash flow hedges for accounting purposes. These instruments are used to manage financial risks and are not speculative. See Note 17 for additional information.

Income taxes: The Company determines deferred tax assets and liabilities based upon the difference between the amounts reported in the financial statements and the tax basis of assets and liabilities, using enacted tax rates in effect in the years in which the differences are expected to reverse. The Company establishes a valuation allowance if it is more likely than not that a deferred tax asset, or portion thereof, will not be realized. See Note 7 for additional information.

Earnings per share: The Company calculates basic earnings per share based upon the weighted-average number of common shares outstanding during the period, while the calculation of diluted earnings per share includes the dilutive effect of potential common shares outstanding during the period. The calculation of diluted earnings per share excludes potential common shares if their inclusion would have an anti-dilutive effect. Certain outstanding restricted stock awards provide recipients with a non-forfeitable right to receive dividends declared by the Company. Therefore, these restricted stock awards are included in computing earnings per share pursuant to the two-class method. See Note 8 for additional information.

Cash and cash equivalents: The Company considers all highly-liquid investments with original maturities of three months or less to be cash equivalents. Under the Company's cash management system, cash balances at certain banks are funded when checks are presented for payment. To the extent checks issued, but not yet presented for payment, exceed the balance on hand at the specific bank against which they were written, the Company reports the amount of those checks within accounts payable in the consolidated balance sheets.

Short-term investments: The Company invests in time deposits with original maturities of more than three months but no more than one year. The Company records these short-term investments at cost, which approximates fair value, within other current assets in the consolidated balance sheets. As of March 31, 2018 and 2017, the Company's short-term investments totaled $5.7 million and $4.7 million, respectively.

Trade accounts receivable: The Company records trade receivables at the invoiced amount. Trade receivables do not bear interest if paid according to the original terms. The Company recorded an allowance for doubtful accounts of $2.3 million and $1.4 million at March 31, 2018 and 2017, respectively, representing its estimated uncollectible receivables. The Company enters into supply chain financing programs from time to time to sell accounts receivable, without recourse, to third-party financial institutions. Sales of accounts receivable are reflected as a reduction of accounts receivable on the consolidated balance sheets and the proceeds are included in cash flows from operating activities in the consolidated statements of cash flows. During the years ended March 31, 2018, 2017, and 2016, the Company sold $65.8 million, $55.4 million, and $71.3 million, respectively, of accounts receivable to accelerate cash receipts. During the years ended March 31, 2018, 2017, and 2016, the Company recorded a loss on the sale of accounts receivable of $0.4 million, $0.3 million, and $0.3 million, respectively, in the consolidated statements of operations.

Inventories: The Company values inventories using a first-in, first-out or weighted-average basis, at the lower of cost and net realizable value.

Property, plant and equipment: The Company records property, plant and equipment at cost. For financial reporting purposes, the Company computes depreciation using the straight-line method over the expected useful lives of the assets. The Company charges maintenance and repair costs to operations as incurred. The Company capitalizes costs of improvements. Upon the sale or other disposition of an asset, the Company removes the cost and related accumulated depreciation from the accounts and includes the gain or loss in the consolidated statements of operations. Capital expenditures of $15.8 million, $12.5 million, and $12.1 million were accrued within accounts payable at March 31, 2018, 2017, and 2016, respectively.

Goodwill: The Company does not amortize goodwill; rather, it tests for impairment annually unless conditions exist that would require a more frequent evaluation. The Company performs an assessment of the fair value of its reporting units for goodwill impairment testing based upon, among other things, the present value of expected future cash flows. The Company performed its goodwill impairment test as of March 31, 2018, which did not result in an impairment charge. See Note 13 for additional information.

Impairment of long-lived assets: The Company reviews long-lived assets, including property, plant and equipment and intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be fully recoverable. In these instances, the Company compares the undiscounted future cash flows expected to be generated from the asset with its carrying value. If the asset's carrying value exceeds expected future cash flows, the Company measures and records an impairment loss, if any, as the amount by which the carrying value of the asset exceeds its fair value. The Company estimates fair value using a variety of valuation techniques, including discounted cash flows, market values and comparison values for similar assets.

Assets held for sale: The Company considers assets to be held for sale when management approves and commits to a formal plan to actively market the asset for sale at a reasonable price in relation to its fair value, the asset is available for immediate sale in its present condition, an active program to locate a buyer and other actions required to complete the sale have been initiated, the sale of the asset is expected to be completed within one year and it is unlikely that significant changes will be made to the plan. Upon designation as held for sale, the Company records the carrying value of the assets at the lower of its carrying value or its estimated fair value, less costs to sell, within other noncurrent assets. The Company ceases to record depreciation expense at the time of designation as held for sale. The carrying value of assets held for sale totaled $1.7 million and $5.0 million at March 31, 2018 and 2017, respectively.

Deferred compensation trusts: The Company maintains deferred compensation trusts to fund future obligations under its non-qualified deferred compensation plans. The trusts' investments in third-party debt and equity securities are presented within other noncurrent assets in the consolidated balance sheets.

Self-insurance reserves: The Company retains a portion of the financial risk for certain insurance coverage, including property, general liability, workers compensation, and employee healthcare, and therefore maintains reserves that estimate the impact of unreported and under-reported claims that fall below various stop-loss limits and deductibles under its insurance policies. The Company maintains reserves for the estimated settlement cost of known claims, as well as estimates of incurred but not reported claims. The Company charges costs of claims, including the impact of changes in reserves due to claim experience and severity, to operations. The Company reviews and updates the amount of its insurance-related reserves on a quarterly basis.

Environmental liabilities: The Company records liabilities for environmental assessments and remediation activities in the period in which its responsibility is probable and the costs can be reasonably estimated. The Company records environmental indemnification assets from third parties, including prior owners, when recovery is probable. To the extent that the required remediation procedures change, or additional contamination is identified, the Company's estimated environmental liabilities may also change. See Note 18 for additional information.

New Accounting Guidance:

Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income
In February 2018, the Financial Accounting Standards Board ("FASB") issued new guidance related to the accounting for certain stranded income tax effects in accumulated other comprehensive income (loss) resulting from tax reform legislation that was enacted in the U.S. in December 2017. This guidance provides companies with the option to reclassify stranded income tax effects to retained earnings and will be effective for the Company's first quarter of fiscal 2020. The Company is currently evaluating the impact this guidance will have on its consolidated financial statements.

Derivatives and Hedging

In August 2017, the FASB issued new guidance related to hedge accounting. The main objectives of the new guidance include aligning hedge accounting with the companies' risk management strategies and increasing disclosure transparency regarding both the scope and the results of hedging programs. The Company early adopted the new guidance in the third quarter of fiscal 2018. This new guidance did not have a material impact on the Company's consolidated financial statements.

Pension Costs

In March 2017, the FASB issued new guidance related to the income statement presentation of pension and postretirement costs. This guidance requires companies to continue to present the service cost component of net periodic benefit cost within the same financial statement line item as other employee compensation costs; however, other components of net benefit cost are required to be presented outside of results from operations. The Company adopted this guidance, on a retrospective basis, in fiscal 2018. As a result, the Company recorded $3.3 million of net periodic benefit cost within other income and expense for the fiscal year ended March 31, 2018 and reclassified the net periodic benefit cost, exclusive of service cost, to other income and expense for the prior-year periods. For fiscal 2017 and 2016, the Company reclassified net periodic benefit cost totaling $2.9 million ($1.1 million from cost of sales and $1.8 million from SG&A expenses) and $44.6 million ($10.1 million from cost of sales and $34.5 million from SG&A expenses), respectively, to other income and expense.

Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory

In October 2016, the FASB issued new guidance related to income tax accounting for intercompany asset transfers. This new guidance requires companies to recognize the income tax effects of intercompany asset transfers other than inventory at the transaction date. The income tax effects of these transfers were previously deferred. This new guidance is effective for the Company's first quarter of fiscal 2019. As a result of adopting this new guidance using the modified-retrospective transition method, the Company expects to record a decrease to retained earnings of approximately $8.0 million as of April 1, 2018.

Stock-based Compensation

In March 2016, the FASB issued new guidance to simplify several aspects of accounting for stock-based payment transactions. The Company adopted this guidance beginning in its first quarter of fiscal 2018. The Company elected to account for forfeitures in the period in which they occur and recorded a cumulative-effect adjustment to equity. In addition, the Company prospectively adopted the guidance requiring all excess tax benefits or deficiencies to be recognized as income tax expense or benefit when share-based awards are settled. The provisions of this guidance did not have a material impact on the Company's consolidated financial statements. As a result of adopting this new guidance, the Company recorded a $0.4 million increase to both deferred tax assets and equity as of April 1, 2017.

Leases

In February 2016, the FASB issued new comprehensive lease accounting guidance that supersedes existing lease accounting guidance. Upon adoption of this new guidance, the Company will be required to recognize most leases on its balance sheet. This guidance is effective for the Company's first quarter of fiscal 2020. The Company is currently evaluating the impact this guidance will have on its consolidated financial statements.

Revenue Recognition

In May 2014, the FASB issued new guidance that outlines a comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The core principle of the new guidance is that companies are to recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration

to which the entity expects to be entitled in exchange for those goods or services. The new guidance also includes a cohesive set of disclosure requirements intended to provide users of financial statements with comprehensive information about revenue arising from contracts with customers. This new guidance is effective for the Company's first quarter of fiscal 2019, and the Company plans to adopt it using a modified-retrospective transition method. The Company will recognize the cumulative effect of initially applying the standard as an adjustment to retained earnings.

The Company has assessed customer contracts and evaluated contractual provisions in light of the new guidance. Under current guidance, the Company generally recognizes revenue when products are shipped and risk of loss has transferred to the customer. Through its evaluation process, the Company has identified a limited number of customer contracts that provide an enforceable right to payment for customized products, which will require revenue recognition prior to the product being shipped to the customer. In addition, the Company has evaluated pricing provisions contained in certain of its customer contracts to determine the appropriate amount and timing of revenue recognized based upon the new guidance. As a result of its adoption of the new guidance, the Company expects to record an increase of less than $1.0 million to retained earnings as of April 1, 2018, along with related balance sheet reclassifications. The expected increase to retained earnings reflects approximately $3.0 million of net sales that, had the new guidance been in effect, the Company would have recognized as of March 31, 2018. The Company is still assessing the enhanced disclosure requirements of the new guidance.

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Supplemental cash flow information:

	Years ended March 31,		
	2018	2017	2016
Interest paid	$ 23.4	$ 15.4	$ 10.7
Income taxes paid	20.1	12.7	10.1

Note 2: Acquisitions

Luvata HTS

On November 30, 2016, the Company completed its acquisition of a 100 percent ownership interest in the Luvata HTS business for consideration totaling $415.6 million ($388.2 million, net of cash acquired). The purchase price included 2.2 million Modine common shares, valued at $24.3 million as of November 30, 2016. Operating as Modine's Commercial and Industrial Solutions ("CIS") segment, this business is a leading global supplier of coils, coolers and coatings to the heating, ventilation, air conditioning, and refrigeration industry. For the year ended March 31, 2018, the Company included $620.0 million of net sales and operating income of $25.8 million within its consolidated statement of operations attributable to CIS operations. For the year ended March 31, 2017, the Company included $177.7 million of net sales and operating income of $7.5 million attributable to four months of CIS operations. In fiscal 2018 and 2017, the Company recorded $4.3 million and $14.8 million, respectively, of costs incurred directly related to the acquisition and integration of Luvata HTS as SG&A expenses within the consolidated statements of operations. The fiscal 2018 costs primarily consisted of incremental costs associated with integration activities, including legal and accounting professional services and severance expenses. The fiscal 2017 costs primarily consisted of transaction advisory and due diligence costs and incremental costs directly associated with integration activities.

The Company has completed the purchase price allocation for its acquisition of Luvata HTS. The purchase price of $415.6 million was allocated to the identifiable tangible and intangible assets acquired and the liabilities assumed based upon their estimated fair values as of the acquisition date. The Company based the estimated fair values primarily upon third-party valuations using assumptions developed by management and other information compiled by management, including, but not limited to, future expected cash flows. The Company allocated the excess of the purchase price over the net assets recognized to goodwill in the amount of $151.9 million, none of which is deductible for income tax purposes. During the first and second quarters of fiscal 2018, the Company recorded measurement-period adjustments which resulted in a $1.3 million increase to the $150.6 million of goodwill preliminarily recorded as of March 31, 2017. The increase was primarily due to increases to income tax reserves and changes in liabilities for product warranties. Goodwill represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Specifically, the goodwill recorded as part of the acquisition includes Luvata HTS's workforce and anticipated future cost and revenue synergies.

The Company's allocation of the purchase price for its acquisition of Luvata HTS was as follows:

Cash and cash equivalents	$ 27.4
Trade accounts receivable	86.1
Inventories	55.0
Property, plant and equipment	120.4
Intangible assets	130.2

Goodwill	151.9
Other assets	39.1
Accounts payable	(73.7)
Accrued compensation and employee benefits	(24.3)
Deferred income taxes	(39.5)
Pensions	(14.3)
Other liabilities	(42.7)
Purchase price	$415.6

Below is a summary of the methodologies and significant assumptions used in estimating the fair value of certain classes of acquired assets. The fair values were primarily based upon significant inputs that are not observable in the market and thus represent Level 3 measurements. See Note 3 for information regarding Level 3 fair value measurements.

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Inventories: The Company determined the fair value of acquired inventory by estimating the selling price of the respective finished goods, less an estimate of costs to be incurred to sell the inventory and to complete the work-in-process inventory, if applicable. For raw materials acquired, the Company estimated the cost of replacement. As a result, the Company wrote-up acquired inventory by $4.3 million and subsequently charged this write-up to cost of sales as the underlying inventory was sold in fiscal 2017.

Property, plant and equipment: The Company valued property, plant and equipment primarily utilizing the cost approach and also utilized the market approach in valuing acquired land and buildings. The cost approach considers the amount required to replace an asset by constructing or purchasing a new asset with similar utility and adjusting the value in consideration of depreciation as of the acquisition date. The cost approach relies on assumptions regarding replacement costs and the age and estimated remaining useful lives of the assets. The fair value of property, plant and equipment will be recognized as depreciation expense in our results of operations over the expected remaining useful lives of the individual assets.

Intangible assets: The Company determined the fair value of acquired intangible assets by using variations of the income approach. These methods generally forecast expected future net cash flows discretely associated with each of the identified intangible assets and adjust the forecasts to present value by applying a discount rate intended to reflect risk factors associated with the cash flows and the time value of money. Acquired intangible assets were as follows:

	Gross Carrying Value	Weighted-Average Useful Life
Customer relationships	$ 58.4	17 years
Trade names	50.1	20 years
Acquired technology	21.7	12 years
Total intangible assets acquired	$ 130.2	

Customer relationships, for valuation purposes, represent the estimated fair value of Luvata HTS's business relationship with existing customers, and were calculated by projecting the future after-tax cash flows from these customers, including the right to deploy and market additional products to them. The Company forecasted anticipated earnings from existing customers using recent years' sales levels and considering a customer attrition rate based upon historical customer revenue information.

The Company determined the value of acquired trade names using the relief-from-royalty method, a variation of the income approach, which applies an assumed royalty rate to revenue expected to be derived under the acquired trade names. The fair value was estimated to be the present value of the royalties saved because the Company owns the trade names.

The Company also used the relief-from royalty method for its valuation of acquired technology, which largely relates to the design of mechanical and electrical components. The Company considered factors including the estimated contribution of the technology to the overall profitability of the products and the awareness level of the technology and its position in the market.

The following unaudited supplemental pro forma information presents the Company's consolidated results of operations as though the acquisition of Luvata HTS had occurred at the beginning of fiscal 2016. This pro forma financial information is presented for illustrative purposes only and is not considered to be indicative of the operating

results that would have been achieved had the acquisition been completed as of the date indicated.

	Years ended March 31,	
	2017	2016
Net sales	$ 1,881.6	$ 1,871.9
Net earnings attributable to Modine	35.8	1.5
Net earnings per share attributable to Modine shareholders:		
Basic	$ 0.72	$ 0.03
Diluted	0.71	0.03

The supplemental pro forma financial information includes adjustments for: (i) annual amortization and depreciation expense totaling approximately $13.0 million for acquired tangible and intangible assets, (ii) estimated annual interest expense of approximately $14.0 million resulting from acquisition-related borrowings, and (iii) the estimated income tax impacts related to the pro forma adjustments, considering the statutory tax rates within the applicable jurisdictions. In addition, the pro forma financial information assumes that both $8.6 million of acquisition-related transaction costs, not including costs for integration-related activities, and $4.3 million of inventory purchase accounting adjustments were incurred during fiscal 2016. The pro forma financial information does not reflect achieved or expected cost or revenue synergies.

Modine Puxin Thermal Systems (Jiangsu) Co. Ltd

On January 29, 2016, the Company formed a joint venture, Modine Puxin Thermal Systems (Jiangsu) Co. Ltd. of Yangzhou, China, of which it owns 67 percent, and the joint venture partner, Jiangsu Puxin Heat Exchange System Co., Ltd, owns 33 percent. This joint venture, which is reported in the Asia segment, expedited the Company's introduction of stainless steel heat exchangers for the light-, medium-, and heavy-duty commercial vehicle markets in China. In fiscal 2016, the Company contributed $1.4 million of cash and equipment and other assets totaling $2.3 million. In fiscal 2017, the Company contributed $0.3 million of additional cash consideration after certain seller indemnification obligations under the agreement were satisfied. The Company recorded assets acquired and liabilities assumed at their respective fair values. The purchase price allocation resulted in acquired equipment and other long-lived assets totaling $1.5 million and working capital net assets of $0.8 million. The Company controls the primary management decisions and revenue-generating activities of the joint venture, and, therefore, the financial results of the joint venture are included in the Company's consolidated financial statements. The Company did not present pro forma financial information for this acquisition as the effect is not material to its results of operations or financial position.

Note 3: Fair Value Measurements

Fair value is defined as the price that would be received for an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Fair value measurements are classified under the following hierarchy:

- Level 1 – Quoted prices for identical instruments in active markets.
- Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable in active markets.
- Level 3 – Model-derived valuations in which one or more significant inputs are not observable.

When available, the Company uses quoted market prices to determine fair value and classifies such measurements as Level 1. In some cases, where market prices are not available, the Company uses observable market-based inputs to calculate fair value, in which case the measurements are classified as Level 2. If quoted or observable market prices are not available, the Company determines fair value based upon valuation models that use, where possible, market-based data such as interest rates, yield curves or currency rates. These measurements are classified as Level 3.

The carrying values of cash and cash equivalents, short-term investments, trade accounts receivable, accounts payable, and short-term debt approximate fair value due to the short-term nature of these instruments. The Company holds trading securities in deferred compensation trusts to fund obligations under certain non-qualified deferred compensation plans. The securities' fair values, which are recorded as other noncurrent assets, are determined based upon quoted prices from active markets and classified within Level 1 of the valuation hierarchy. The Company's deferred compensation obligations, which are recorded as other noncurrent liabilities, are recorded at the fair values of the investments held by the trust. The fair values of the Company's trading securities and deferred compensation obligations each totaled $5.8 million and $5.0 million at March 31, 2018 and 2017, respectively. The fair value of the Company's long-term debt is disclosed in Note 15.

Plan assets related to the Company's pension plans were classified as follows:

	March 31, 2018		
	Level 1	Level 2	Total
Money market investments	$-	$ 11.4	$11.4
Common stocks	9.4	2.6	12.0
Corporate bonds	-	9.7	9.7
Pooled equity funds	64.4	-	64.4
Pooled fixed-income funds	27.3	-	27.3
U.S. government and agency securities	-	16.2	16.2
Other	0.2	1.7	1.9
Fair value excluding investment measured at net asset value	101.3	41.6	142.9
Investment measured at net asset value (a)			14.8
Total Fair Value			$157.7

	March 31, 2017		
	Level 1	Level 2	Total
Money market investments	$-	$ 5.6	$5.6
Common stocks	17.8	2.0	19.8
Corporate bonds	-	9.3	9.3
Pooled equity funds	56.8	-	56.8
Pooled fixed-income funds	26.5	-	26.5
U.S. government and agency securities	-	18.7	18.7
Other	1.4	1.4	2.8
Fair value excluding investment measured at net asset value	102.5	37.0	139.5
Investment measured at net asset value (a)			8.7
Total Fair Value			$148.2

(a) As a practical expedient, the Company valued a collective trust fund using its net asset value per unit, and therefore, has not classified this investment within the fair value hierarchy.

The Company determined the fair value of money market investments to approximate their net asset values, without discounts for credit quality or liquidity restrictions, and classified them within Level 2 of the valuation hierarchy. The Company determined the fair value of common stocks, pooled equity funds and pooled fixed-income funds based upon quoted prices from active markets and classified them within Level 1 of the valuation hierarchy. The Company determined the fair value of certain common stocks, corporate bonds and U.S. government and agency securities based upon recent bid prices or the average of recent bid and asking prices when available and, if not available, the Company valued them through matrix pricing models developed by sources considered by management to be reliable. The Company classified these assets within Level 2 of the valuation hierarchy. As of March 31, 2018 and 2017, the Company held no Level 3 assets within its pension plans.

Note 4: Stock-Based Compensation

The Company's stock-based incentive programs consist of the following: (1) a long-term incentive compensation program for officers and other executives that consists of stock awards, stock options, and performance-based stock awards granted for retention and performance, (2) a discretionary equity program for other management and key employees, and (3) stock awards for non-employee directors. The Company's Board of Directors and the Officer Nomination and Compensation Committee, as applicable, have discretionary authority to set the terms of the stock awards. Grants to employees during fiscal 2018 and prior were issued under the Company's Amended and Restated 2008 Incentive Compensation Plan. All future grants will be issued under the Company's 2017 Incentive Compensation Plan. At present, the Company accomplishes the fulfillment of equity-based grants through the issuance of new common shares. As of March 31, 2018, approximately 3.6 million shares authorized under the 2017 Incentive Compensation Plan remain available for future grants. Employee participants have the opportunity to deliver back to the Company the number of shares from the vesting of stock awards sufficient to satisfy the individual's minimum tax withholding obligations. These shares are held as treasury shares. The Company recorded stock-based compensation expense of $9.5 million, $7.4 million, and $4.9 million in fiscal 2018, 2017, and 2016, respectively.

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Stock Options: The Company recorded $1.2 million, $1.1 million, and $0.9 million of compensation expense related to stock options in fiscal 2018, 2017, and 2016, respectively. The fair value of stock options that vested during fiscal 2018, 2017, and 2016 was $1.2 million, $1.0 million, and $0.9 million, respectively. As of March 31, 2018, the total compensation expense not yet recognized related to non-vested stock options was $2.2 million and the weighted-average period in which the remaining expense is expected to be recognized was 2.5 years.

The Company estimated the fair value of option awards on the date of grant using the Black-Scholes option valuation model and the following assumptions:

	Years ended March 31,		
	2018	2017	2016
Fair value of options	$7.30	$4.60	$7.11
Expected life of awards in years	6.4	6.4	6.3
Risk-free interest rate	1.9 %	1.4 %	1.9 %
Expected volatility of the Company's stock	44.3%	45.5%	66.9%
Expected dividend yield on the Company's stock	0.0 %	0.0 %	0.0 %

Stock options expire no later than 10 years after the grant date and have an exercise price equal to the fair market value of Modine's common stock on the date of grant. The risk-free interest rate was based upon yields of U.S. Treasury zero-coupon issues with a term corresponding to the expected life of the options. The expected volatility assumption was based upon changes in the Company's historical common stock prices over the same time frame as the expected life of the awards. The expected dividend yield is zero, as the Company currently does not anticipate paying dividends over the expected life of the options. The expected lives of the awards are based upon historical patterns and the terms of the options. Outstanding options granted vest 25 percent annually for four years.

A summary of stock option activity for fiscal 2018 was as follows:

	Shares	Weighted-average exercise price	Weighted-average remaining contractual term (years)	Aggregate intrinsic value
Outstanding, beginning	1.5	$ 9.83		
Granted	0.2	15.90		
Exercised	(0.4)	8.89		
Forfeited or expired	(0.1)	12.64		
Outstanding, ending	1.2	$ 11.16	6.1	$ 12.2
Exercisable, March 31, 2018	0.7	$ 9.99	4.6	$ 8.0

The aggregate intrinsic value represents the difference between the closing price of Modine's common shares on the last trading day of fiscal 2018 over the exercise price of the stock options, multiplied by the number of options outstanding or exercisable. The aggregate intrinsic value is not recorded for financial statement purposes, and this value will change based upon daily changes in the fair value of Modine's common shares.

Additional information related to stock options exercised is as follows:

Years ended March 31,

	2018	2017	2016
Intrinsic value of stock options exercised	$ 4.9	$ 0.5	$ 0.4
Proceeds from stock options exercised	$ 4.3	$ 0.9	$ 0.5

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Restricted Stock: The Company recorded $3.9 million, $3.8 million, and $3.5 million of compensation expense related to restricted stock in fiscal 2018, 2017, and 2016, respectively. The fair value of restricted stock awards that vested during fiscal 2018, 2017, and 2016 was $3.9 million, $4.0 million, and $3.4 million, respectively. At March 31, 2018, the Company had $5.0 million of unrecognized compensation expense related to non-vested restricted stock, which it expects to recognize over a weighted-average period of 2.5 years. The Company values restricted stock awards using the closing market value of its common shares on the date of grant. The restricted stock awards vest 25 percent annually for four years, with the exception of awards to non-employee directors, which fully vest upon grant.

A summary of restricted stock activity for fiscal 2018 was as follows:

	Shares	Weighted-average price
Non-vested balance, beginning	0.6	$ 11.21
Granted	0.3	16.12
Vested	(0.3)	12.56
Non-vested balance, ending	0.6	$ 12.24

Restricted Stock – Performance-Based Shares: The Company recorded $4.4 million, $2.5 million, and $0.5 million of compensation expense related to performance-based stock awards in fiscal 2018, 2017, and 2016, respectively. At March 31, 2018, the Company had $4.3 million of total unrecognized compensation expense related to non-vested performance-based stock awards, which is expected to be recognized over a weighted-average period of 1.7 years. The Company values performance-based stock awards using the closing market value of its common shares on the date of grant.

Shares are earned under the performance portion of the restricted stock award program based upon the attainment of certain financial goals over a three-year period and are awarded after the end of that three-year performance period, if the performance targets have been achieved. The performance components of the programs initiated in fiscal 2018, 2017, and 2016 were based upon both a target three-year average consolidated return on average capital employed (“ROACE”) and a target three-year average annual revenue growth at the end of a three-year performance period, commencing with the fiscal year of grant.

Note 5: Restructuring Activities

During fiscal 2018, the Company ceased production at its Gailtal, Austria manufacturing facility, primarily to reduce excess capacity and lower manufacturing costs in Europe. As a result of this facility closure, the Company recorded $8.3 million of restructuring expenses, within the CIS segment, during fiscal 2018. These restructuring expenses primarily related to employee severance and related benefits. The Company also recorded a $1.3 million asset impairment charge to reduce the carrying value of the Gailtal, Austria facility to its estimated fair value, less costs to sell.

The Company’s restructuring actions during fiscal 2018 also included targeted headcount reductions in the Europe and Americas segments, plant consolidation activities in the Americas segment, and costs resulting from the transfer of production of certain product lines to Hungary from other manufacturing facilities within the Europe segment. The Company’s objective for the product line transfers to Hungary was primarily to expand its low-cost country footprint in Europe and to ensure continued competitiveness in the region. In addition, the Company recorded restructuring costs

associated with the discontinuance of its geothermal product line within its BHVAC segment.

During fiscal 2017, the Company completed a voluntary retirement program for certain U.S. salaried employees and implemented targeted headcount reductions at several locations, both in support of its objective to reduce operational and SG&A cost structures.

During fiscal 2016, the Company announced a plan to close its Washington, Iowa manufacturing facility and recorded severance costs as a result. The Company completed the transfer of production from Washington to other Americas segment manufacturing facilities in fiscal 2017. Also during fiscal 2016, the Company completed the transfer of production from its McHenry, Illinois manufacturing facility to other Americas segment manufacturing facilities. These restructuring activities reflect the Company's focus on operating scale manufacturing facilities to improve overall competitiveness and profitability.

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Restructuring and repositioning expenses were as follows:

	Years ended March 31,		
	2018	2017	2016
Employee severance and related benefits	$ 13.0	$ 5.3	$ 12.8
Other restructuring and repositioning expenses	3.0	5.6	3.8
Total	$ 16.0	$ 10.9	$ 16.6

Other restructuring and repositioning expenses primarily consist of equipment transfer and plant consolidation costs.

The Company accrues severance in accordance with its written plans, procedures, and relevant statutory requirements. Changes in accrued severance were as follows:

	Years ended March 31,	
	2018	2017
Beginning balance	$ 6.5	$ 14.7
Additions	13.0	5.3
Payments	(9.4)	(12.9)
Effect of exchange rate changes	0.9	(0.6)
Ending balance	$ 11.0	$ 6.5

During fiscal 2017, the Company sold two previously-closed manufacturing facilities within its Americas segment and a facility within its Europe segment, for cash proceeds totaling $5.4 million. As a result of the facility sales, the Company recorded net gains totaling $2.0 million.

During fiscal 2016, the Company recorded an asset impairment charge of $9.9 million within its Europe segment to write down long-lived assets at a manufacturing facility in Germany to fair value.

Note 6: Other Income and Expense

Other income and expense consisted of the following:

	Years ended March 31,		
	2018	2017	2016
Equity in earnings of non-consolidated affiliate	$ 0.2	$ 0.1	$ 0.1
Interest income	0.4	0.4	0.4
Foreign currency transactions (a)	(0.6)	(1.9)	(1.3)
Net periodic benefit cost (b)	(3.3)	(2.9)	(44.6)
Gain from insurance recovery (c)	-	-	9.5
Total other expense - net	$ (3.3)	$ (4.3)	$ (35.9)

(a) Foreign currency transactions primarily consist of foreign currency transaction gains and losses on the re-measurement or settlement of foreign currency-denominated assets and liabilities, including intercompany loans and transactions denominated in a foreign currency, along with gains and losses on foreign currency exchange contracts.

(b) Represents net periodic benefit cost, exclusive of service cost, for the Company's pension and postretirement plans.

(c) During fiscal 2016, the Company settled an insurance claim related to machinery and equipment destroyed in a fire at its Airedale facility and recorded a gain of $9.5 million. See Note 1 for additional information.

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Note 7: Income Taxes

The U.S. and foreign components of earnings before income taxes and the provision or benefit for income taxes consisted of the following:

	Years ended March 31,		
	2018	2017	2016
Components of earnings (loss) before income taxes:			
United States	$2.5	$(8.6)	$(15.4)
Foreign	60.8	29.4	5.5
Total earnings (loss) before income taxes	$63.3	$20.8	$(9.9)
Income tax provision (benefit):			
Federal:			
Current	$11.6	$0.1	$0.1
Deferred	23.3	(3.8)	(13.0)
State:			
Current	(0.3)	0.3	0.2
Deferred	2.0	(0.2)	(2.5)
Foreign:			
Current	16.1	10.1	9.6
Deferred	(13.2)	(0.6)	(3.3)
Total income tax provision (benefit)	$39.5	$5.9	$(8.9)

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”). The Tax Act includes broad and complex changes to the U.S. tax code, including (i) a reduction in the U.S. federal corporate tax rate from 35 percent to 21 percent effective January 1, 2018, and (ii) a transition tax on certain unrepatriated earnings of foreign subsidiaries. For fiscal 2018, the Company recorded its income tax provision based on a blended U.S. statutory tax rate of 31.5 percent, which is based on a proration of the applicable tax rates before and after the effective date of the Tax Act. The statutory tax rate of 21 percent will apply for fiscal 2019 and beyond.

The Tax Act also puts in place new tax laws that may impact the Company’s taxable income beginning in fiscal 2019, which include, but are not limited to (i) creating a base erosion anti-abuse tax (“BEAT”), which is a new minimum tax, (ii) generally eliminating U.S. federal income taxes on dividends from foreign subsidiaries, (iii) adding a new provision designed to tax global intangible low taxed income (“GILTI”), (iv) adding a provision that could limit the amount of deductible interest expense, and (v) limiting the deductibility of certain executive compensation.

Shortly after the Tax Act was enacted, the Securities and Exchange Commission issued accounting guidance, which provides a one-year measurement period during which a company may complete its accounting for the impacts of the Tax Act. To the extent a company’s accounting for certain income tax effects of the Tax Act is incomplete, the company may determine a reasonable estimate for those effects and record a provisional estimate in its financial statements. If a company cannot determine a provisional estimate to be included in the financial statements, it should continue to apply the provisions of the tax laws that were in effect immediately prior to the Tax Act being enacted.

During fiscal 2018, the Company recorded provisional discrete tax charges of $38.0 million related to the Tax Act. The Company adjusted its U.S. deferred tax assets by $19.0 million due to the reduction in the U.S. federal corporate tax rate. This net reduction in deferred tax assets also included the estimated impact on the Company's net state deferred tax assets. In addition, the Company recorded a $19.0 million charge for the transition tax. The Company is in process of evaluating whether to utilize its deferred tax attributes for the transition tax. If the Company does not utilize its deferred tax attributes for the transition tax, it expects to pay the estimated $19.0 million tax liability over the next eight years, beginning with an estimated payment of $1.5 million in fiscal 2019. The Company is also awaiting additional technical guidance on the treatment of the deemed inclusion and its impact on fiscal year taxpayers.

The Company is in process of analyzing other provisions of the Tax Act to determine whether they will impact the Company's effective tax rate in the future. These provisions include BEAT, as described above, the elimination of U.S. federal income taxes on dividends from foreign subsidiaries, new limits on the deductibility of interest expense and executive compensation, and the state tax implications of the Tax Act, including the impact of the transition tax and the impact on the realizability of tax attributes and valuation allowances.

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The Tax Act includes a provision designed to tax GILTI, as described above, starting in fiscal 2019. The Company has elected to record the tax effects of the GILTI provision as a period expense in the applicable tax year. As a result, GILTI did not impact the Company's fiscal 2018 income tax provision. As of March 31, 2018, the Company is still assessing the impact GILTI will have on its deferred tax attributes.

The Company has not yet completed its accounting for the income tax effects of certain elements of the Tax Act. In regards to the reduction in the U.S. corporate tax rate, the Company will continue to analyze its temporary differences through finalization of the fiscal 2018 U.S. federal return. In regards to the transition tax, the Company is awaiting further interpretative guidance, continuing to assess available tax methods and elections, and continuing to gather additional information in order to more precisely compute the amount of this tax. Previously, the Company's practice and intention was to reinvest, with certain insignificant exceptions, the earnings of its non-U.S. subsidiaries outside of the U.S. As a result, the Company did not record U.S. deferred income taxes or foreign withholding taxes for these earnings. The Company is currently analyzing its global working capital requirements and the potential tax liabilities that would be incurred if the non-U.S. subsidiaries distribute cash to the U.S. parent, which include local country withholding tax and potential U.S. state taxes. The Company expects to complete its analysis of the accounting guidance related to the Tax Act and its evaluation of the impacts of the Tax Act in first half of fiscal 2019.

The Company's accounting policy is to allocate the income tax provision between net earnings and other comprehensive income. The Company applies its accounting for income taxes by tax jurisdiction, and in periods in which there is a loss before income taxes and pre-tax income in other comprehensive income, it first allocates the income tax provision to other comprehensive income, and then records a related tax benefit in the income tax provision.

The reconciliation between the U.S. federal statutory rate and the Company's effective tax rate was as follows:

	Years ended March 31,		
	2018	2017	2016
Statutory federal tax	31.5 %	35.0%	35.0 %
State taxes, net of federal benefit	2.9	(3.3)	11.5
Taxes on non-U.S. earnings and losses	(3.8)	(3.5)	26.4
Valuation allowances	(5.6)	1.2	(20.9)
Tax credits	(17.3)	(9.0)	20.5
Compensation	(0.8)	2.9	(3.7)
Tax rate or law changes	60.1	(2.5)	1.3
Uncertain tax positions, net of settlements	(0.8)	5.6	(4.3)
Notional interest deductions	(3.2)	(8.8)	-
Dividend repatriation	0.2	7.1	16.0
Other	(0.8)	3.7	8.1
Effective tax rate	62.4 %	28.4%	89.9 %

During fiscal 2018, the Company recorded provisional charges totaling $38.0 million related to the Tax Act, as discussed above, and recognized a $9.0 million Hungarian development tax credit. Also in fiscal 2018, the Company reversed a portion of the valuation allowance on certain deferred tax assets in a foreign jurisdiction after determining it was more likely than not these assets would be realized, and, as a result, recorded an income tax benefit of $2.8 million. In addition, the Company recorded a $1.8 million income tax benefit in fiscal 2018 associated with the reduction in unrecognized tax benefits resulting from a lapse in statues of limitations.

During fiscal 2017, the Company recorded a valuation allowance of $2.0 million on certain deferred tax assets in a foreign jurisdiction after determining it was more likely than not the deferred tax assets would not be realized. Also during fiscal 2017, the Company recorded a net reduction of deferred tax asset valuation allowances totaling $1.8 million in other tax jurisdictions.

During fiscal 2016, the Company reversed a valuation allowance of $3.0 million on certain deferred tax assets in a foreign jurisdiction after determining it was more likely than not the deferred tax assets would be realized. Also during fiscal 2016, the Company recorded a net increase in deferred tax asset valuation allowances totaling $5.0 million in other tax jurisdictions.

The Company may release the valuation allowance (approximately $3.0 million) on certain deferred tax assets in a foreign jurisdiction during fiscal 2019. The Company will continue to provide valuation allowances against its net deferred tax assets in each applicable tax jurisdiction until the need for a valuation allowance is eliminated. The need for a valuation allowance is eliminated when the Company determines it is more likely than not the deferred tax assets will be realized.

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The tax effects of temporary differences that gave rise to deferred tax assets and liabilities were as follows:

	March 31,	
	2018	2017
Deferred tax assets:		
Accounts receivable	$0.3	$0.4
Inventories	4.1	5.0
Plant and equipment	2.3	3.7
Pension and employee benefits	36.0	51.8
Net operating loss, capital loss, and credit carryforwards	139.2	147.5
Other, principally accrued liabilities	9.9	10.9
Total gross deferred tax assets	191.8	219.3
Less: valuation allowances	(48.9)	(49.6)
Net deferred tax assets	142.9	169.7
Deferred tax liabilities:		
Plant and equipment	17.6	21.2
Goodwill	5.2	4.7
Intangible assets	32.4	43.3
Other	0.7	1.8
Total gross deferred tax liabilities	55.9	71.0
Net deferred tax assets	$87.0	$98.7

Unrecognized tax benefits were as follows:

	Years ended March 31,	
	2018	2017
Beginning balance	$ 14.2	$ 5.9
Gross increases - tax positions in prior period	0.8	0.3
Gross decreases - tax positions in prior period (a)	(1.2)	(0.2)
Gross increases - due to acquisition	1.4	7.3
Gross increases - tax positions in current period	0.5	0.9
Settlements	(0.3)	-
Lapse of statute of limitations	(1.8)	-
Ending balance	$ 13.6	$ 14.2

(a) Includes $1.0 million related to the reduction of the U.S. federal corporate tax rate as a result of the Tax Act.

The Company’s liability for unrecognized tax benefits as of March 31, 2018 was $13.6 million, and if recognized, $12.1 million would have an effective tax rate impact. The Company estimates a $2.2 million decrease in unrecognized tax benefits during fiscal 2019 due to lapses in statutes of limitations and settlements. If recognized, these reductions would have a $1.6 million impact on the Company’s effective tax rate.

The Company recognizes interest and penalties related to unrecognized tax benefits as a component of income tax expense. During fiscal 2018 and 2017, interest and penalties included within income tax expense in the consolidated

statements of operations were not significant. At March 31, 2018 and 2017, accrued interest and penalties totaled $1.0 million and $0.8 million, respectively.

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The Company files income tax returns in multiple jurisdictions and is subject to examination by taxing authorities throughout the world. At March 31, 2018, the Company was under income tax examination in the United States and a number of foreign jurisdictions. The following tax years remain subject to examination for the Company's major tax jurisdictions:

Germany	Fiscal 2011 - Fiscal 2017
Italy	Calendar 2013 - Fiscal 2017
United States	Fiscal 2015 - Fiscal 2017

At March 31, 2018, the Company had federal and state tax credits of $31.5 million that, if not utilized against U.S. taxes, will expire between fiscal 2019 and 2038. The Company also had state and local tax loss carryforwards totaling $183.1 million that, if not utilized against state apportioned taxable income, will expire between fiscal 2019 and 2038. In addition, the Company had tax loss and foreign attribute carryforwards totaling $475.0 million in various tax jurisdictions throughout the world. Certain of the carryforwards in the U.S. and in foreign jurisdictions are offset by valuation allowances. If not utilized against taxable income, $132.7 million of these carryforwards will expire between fiscal 2019 and 2038, and $342.3 million, mainly related to Germany and Italy, will not expire due to an unlimited carryforward period.

Prior to the Tax Act, the Company considered substantially all earnings in its foreign subsidiaries to be permanently reinvested and recorded no provision for taxes that would be payable upon the distribution of such earnings. The Company's current intention is to continue to permanently reinvest its undistributed earnings in its foreign operations, subject to certain insignificant exceptions, although, as discussed above, the Company has not completed its evaluation of the impacts of the Tax Act. At this time, the Company estimates the net amount of unrecognized foreign withholding tax and deferred tax liabilities would total approximately $6.0 million if the accumulated foreign earnings were distributed; however, the actual tax expense would be dependent on circumstances existing when remittance occurs.

Note 8: Earnings Per Share

The components of basic and diluted earnings per share were as follows:

	Years ended March 31,		
	2018	2017	2016
Basic Earnings Per Share:			
Net earnings (loss) attributable to Modine	$22.2	$14.2	$(1.6)
Less: Undistributed earnings attributable to unvested shares	(0.2)	(0.2)	-
Net earnings (loss) available to Modine shareholders	$22.0	$14.0	$(1.6)
Weighted-average shares outstanding - basic	49.9	47.8	47.3
Net earnings (loss) per share - basic	$0.44	$0.29	$(0.03)
Diluted Earnings Per Share:			
Net earnings (loss) attributable to Modine	$22.2	$14.2	$(1.6)
Less: Undistributed earnings attributable to unvested shares	(0.1)	(0.1)	-
Net earnings (loss) available to Modine shareholders	$22.1	$14.1	$(1.6)

Weighted-average shares outstanding - basic	49.9	47.8	47.3
Effect of dilutive securities	1.0	0.5	-
Weighted-average shares outstanding - diluted	50.9	48.3	47.3
Net earnings (loss) per share - diluted	$ 0.43	$ 0.29	$ (0.03)

For the years ended March 31, 2018, 2017 and 2016, the calculation of diluted earnings per share excluded 0.2 million, 0.8 million, and 0.8 million stock options, respectively, because they were anti-dilutive. For the year ended March 31, 2016, the total number of potentially-dilutive securities was 0.4 million. However, these securities were not included in the computation of diluted net loss per share since to do so would have decreased the loss per share.

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Note 9: Inventories

Inventories consisted of the following:

	March 31,	
	2018	2017
Raw materials	$114.5	$100.2
Work in process	34.8	27.5
Finished goods	42.1	40.8
Total inventories	$191.3	$168.5

Note 10: Property, Plant and Equipment

Property, plant and equipment, including depreciable lives, consisted of the following:

	March 31,	
	2018	2017
Land	$22.6	$18.9
Buildings and improvements (10-40 years)	295.6	255.6
Machinery and equipment (3-12 years)	840.8	755.5
Office equipment (3-10 years)	93.0	92.5
Construction in progress	50.2	55.1
	1,302.2	1,177.6
Less: accumulated depreciation	(797.9)	(718.6)
Net property, plant and equipment	$504.3	$459.0

Depreciation expense totaled $67.0 million, $54.2 million, and $48.6 million for the years ended March 31, 2018, 2017, and 2016, respectively. Gains and losses related to the disposal of property, plant and equipment are recorded in SG&A expenses. For the years ended March 31, 2018, 2017, and 2016, total losses related to the disposal of property, plant and equipment were $0.7 million, $0.4 million, and $0.4 million, respectively.

Note 11: Investment in Affiliate

The Company owns 50 percent of Nikkei Heat Exchanger Company, Ltd. (“NEX”). The Company accounts for its investment in this non-consolidated affiliate using the equity method. At March 31, 2018 and 2017, the Company included its investment in NEX of $3.6 million and $3.3 million, respectively, within other noncurrent assets on the consolidated balance sheets. At March 31, 2018, the investment in NEX is equal to the Company's investment in the underlying assets.

The Company reports its equity in earnings from NEX within other income and expense in the consolidated statements of operations, using a one-month reporting delay. The Company’s share of NEX’s earnings for the years ended March 31, 2018, 2017, and 2016 was $0.2 million, $0.1 million, and $0.1 million, respectively.

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Note 12: Intangible Assets

Intangible assets consisted of the following:

	March 31, 2018			March 31, 2017		
	Gross Carrying Value	Accumulated Amortization	Net Intangible Assets	Gross Carrying Value	Accumulated Amortization	Net Intangible Assets
Customer relationships	$64.2	$ (5.7)	$ 58.5	$60.5	$ (1.7)	$ 58.8
Trade names	60.6	(10.8)	49.8	58.4	(7.2)	51.2
Acquired technology	25.2	(3.6)	21.6	27.0	(2.9)	24.1
Total intangible assets	$150.0	$ (20.1)	$ 129.9	$145.9	$ (11.8)	$ 134.1

During the fourth quarter of fiscal 2018, the BHVAC segment discontinued its geothermal product line and, as a result, recorded a $1.2 million impairment charge for acquired technology intangible assets it will no longer use. Annual revenue for this discontinued product line was less than $1.0 million.

The Company recorded $9.7 million, $4.1 million, and $1.6 million of amortization expense during fiscal 2018, 2017, and 2016, respectively. The Company estimates that it will record approximately $9.0 million of amortization expense in each of the next five fiscal years.

Note 13: Goodwill

Changes in the carrying amount of goodwill, by segment and in the aggregate, were as follows:

	Asia	BHVAC	CIS	Total
Balance, March 31, 2016	$0.5	$ 15.3	$-	$15.8
Acquired goodwill (a)	-	-	150.6	150.6
Effect of exchange rate changes	-	(1.6)	0.3	(1.3)
Balance, March 31, 2017	0.5	13.7	150.9	165.1
Acquired goodwill (a)	-	-	1.3	1.3
Effect of exchange rate changes	-	1.3	6.1	7.4
Balance, March 31, 2018	$0.5	$ 15.0	$158.3	$173.8

(a) See Note 2 for additional information about the goodwill recorded as a result of the acquisition of Luvata HTS.

The Company assesses goodwill for impairment annually, or more frequently if events or circumstances change that would, more likely than not, reduce the fair value of a reporting unit below its carrying value. The Company conducted its annual assessment for goodwill impairment during the fourth quarter of fiscal 2018 for its Asia, BHVAC, and CIS segments, by applying a fair value-based test, and determined that the fair value of its reporting units exceeded their respective book values.

At both March 31, 2018 and 2017, accumulated goodwill impairment losses totaled $31.6 million and $8.7 million within the Americas and Europe segments, respectively.

Note 14: Product Warranties, Operating Leases, and Other Commitments

Product warranties: Most of the Company's products are covered under a warranty period ranging from one to five years. The Company records a liability for product warranty obligations at the time of sale to a customer based upon historical warranty experience. In addition, the Company adjusts its warranty accruals if it becomes probable that expected claims will differ from initial estimates.

Changes in accrued warranty costs were as follows:

	Years ended March 31,	
	2018	2017
Beginning balance	$ 10.0	$ 8.3
Warranties recorded at time of sale	6.7	5.2
Adjustments to pre-existing warranties	(0.8)	0.3
Additions and adjustments due to acquisition (a)	(1.0)	4.1
Settlements	(6.2)	(7.6)
Effect of exchange rate changes	0.6	(0.3)
Ending balance	$ 9.3	$ 10.0

(a) During fiscal 2018, the Company decreased its liability for product warranties by $1.0 million as a result of measurement period adjustments made in connection with purchase accounting for the acquisition of Luvata HTS. See Note 2 for additional information.

Operating leases: The Company leases various facilities and equipment under operating leases. Rental expense for these leases totaled $18.5 million, $12.8 million, and $11.9 million in fiscal 2018, 2017, and 2016, respectively.

Future minimum rental commitments at March 31, 2018 under non-cancelable operating leases were as follows:

Fiscal Year	
2019	$14.4
2020	12.0
2021	10.4
2022	7.1
2023	6.6
2024 and beyond	24.6
Total	$75.1

Indemnification agreements: From time to time, the Company provides indemnification agreements related to the sale or purchase of an entity or facility. These indemnification agreements cover customary representations and warranties typically provided in conjunction with such transactions, including income, sales, excise or other tax matters, environmental matters and other third-party claims. The indemnification periods provided generally range from less than one year to fifteen years. In addition, standard indemnification provisions reside in many commercial agreements to which the Company is a party and relate to responsibility in the event of potential third-party claims. The fair value of the Company’s outstanding indemnification obligations at March 31, 2018 was not material.

Commitments: At March 31, 2018, the Company had capital expenditure commitments of $24.1 million. Significant commitments include tooling and equipment expenditures for new and renewal programs with customers in the Europe, Americas, and Asia segments. The Company utilizes inventory arrangements with certain vendors in the normal course of business under which the vendors maintain inventory stock at the Company’s facilities or at outside facilities. Title passes to the Company at the time goods are withdrawn for use in production. The Company has agreements with the vendors to use the material within a specific period of time. In some cases, the Company bears the risk of loss for the inventory because Modine is required to insure the inventory against damage and/or theft. This

inventory is included within the Company's consolidated balance sheets as raw materials inventory.

Note 15: Indebtedness

Long-term debt consisted of the following:

	Fiscal year of maturity	March 31, 2018	March 31, 2017
Term Loans	2022	$ 267.8	$ 268.9
6.8% Senior Notes	2021	101.0	117.0
5.8% Senior Notes	2027	50.0	50.0
Other (a)	2032	12.8	8.3
		431.6	444.2
Less: current portion		(39.9)	(31.8)
Less: unamortized debt issuance costs		(5.4)	(6.7)
Total long-term debt		$ 386.3	$ 405.7

(a) Other long-term debt includes borrowings by foreign subsidiaries, capital lease obligations and other financing-type obligations.

Long-term debt matures as follows:

Fiscal Year	
2019	$39.9
2020	47.2
2021	102.5
2022	193.9
2023	8.8
2024 & beyond	39.3
Total	$431.6

The Company maintains an amended and restated credit agreement with a syndicate of banks that provides for both U.S. dollar- and euro-denominated term loan facilities and a multi-currency $175.0 million revolving credit facility expiring in November 2021. Based upon the terms of the credit agreement and currency denomination, borrowings under both the term loans and revolving credit facility bear interest at a variable rate, primarily either the London Interbank Offered Rate ("LIBOR") or Euro Interbank Offered Rate ("EURIBOR"), plus 137.5 to 250 basis points depending on the Company's leverage ratio, as described below. At March 31, 2018, the weighted-average interest rate for both the outstanding term loans and the revolving credit facility borrowings was 3.3 percent.

At March 31, 2018 and 2017, the Company reported its revolving credit facility borrowings of $21.3 million and $40.4 million, respectively, as short-term debt on the consolidated balance sheets. At March 31, 2018, domestic letters of credit totaled $3.1 million, resulting in available borrowings under the Company's revolving credit facility of $150.6 million. The Company also maintains credit agreements for its foreign subsidiaries, with outstanding short-term borrowings at March 31, 2018 and 2017 of $31.9 million and $33.0 million, respectively. At March 31, 2018, the Company's foreign unused lines of credit totaled $19.7 million. In aggregate, the Company had total available lines of credit of $170.3 million at March 31, 2018.

Provisions in the Company’s amended and restated credit agreement, Senior Note agreements, and various foreign credit agreements require the Company to maintain compliance with various covenants and include certain cross-default clauses. Under its primary debt agreements in the U.S., the Company has provided liens on substantially all domestic assets. In addition, as defined in the credit agreement, the term loans require prepayments of excess cash flows in the event our leverage ratio exceeds defined levels, or in the event of certain asset sales. The Company is also subject to leverage ratio covenants, the most restrictive of which requires the Company to limit its consolidated indebtedness, less a portion of its cash balance, both as defined by the credit agreement, to no more than three and one-quarter times consolidated net earnings before interest, taxes, depreciation, amortization, and certain other adjustments (“Adjusted EBITDA”). The Company is also subject to an interest expense coverage ratio covenant, which requires the Company to maintain Adjusted EBITDA of at least three times consolidated interest expense. The Company was in compliance with its debt covenants as of March 31, 2018.

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The Company estimates the fair value of long-term debt using discounted future cash flows at rates offered to the Company for similar debt instruments of comparable maturities. At March 31, 2018 and 2017, the carrying value of Modine's long-term debt approximated fair value, with the exception of the Senior Notes, which had an aggregate fair value of approximately $153.1 million and $170.0 million, respectively. The fair value of the Senior Notes are categorized as Level 2 within the fair value hierarchy. Refer to Note 3 for the definition of a Level 2 fair value measurement.

Note 16: Pension and Employee Benefit Plans

Defined Contribution Employee Benefit Plans:

The Company maintains a domestic 401(k) plan that allows employees to contribute a portion of their salary to help them save for retirement. The Company currently matches employee contributions up to 4.5 percent of their compensation for participants. The Company's expense for defined contribution employee benefit plans during fiscal 2018, 2017, and 2016 was $5.2 million, $4.7 million, and $4.6 million, respectively.

In addition, the Company maintains non-qualified deferred compensation plans for eligible employees, and various non-U.S. subsidiaries have government-required defined contribution plans in place, under which they contribute a percentage of employee earnings into accounts, consistent with local laws.

Statutory Termination Plans:

Certain non-U.S. subsidiaries have statutory termination indemnity plans covering eligible employees. The benefits under these plans are based upon years of service and final average compensation levels or a monthly retirement benefit amount. These programs are all substantially unfunded in accordance with local laws, but are often covered by national obligatory umbrella insurance programs that protect employees from losses in the event that an employer defaults on its obligations.

Defined Benefit Employee Benefit Plans:

Pension plans: The Company maintains non-contributory defined benefit pension plans that cover eligible domestic employees. These plans are closed to new participants. The primary domestic plans cover most domestic employees hired on or before December 31, 2003 and provide benefits based primarily upon years of service and average compensation for salaried and some hourly employees. Benefits for other hourly employees are based upon a monthly retirement benefit amount. Currently, the Company's domestic pension plans do not include increases in annual earnings or future service in calculating the average annual earnings and years of credited service under the pension plan benefit formula. Certain non-U.S. subsidiaries of the Company also have legacy defined benefit plans which cover a smaller number of active employees and are substantially unfunded. The primary non-U.S. plans are maintained in Germany, Austria, and Italy and are closed to new participants.

The Company contributed $13.4 million, $8.1 million, and $6.7 million to its U.S. pension plans during fiscal 2018, 2017, and 2016, respectively. In addition, the Company contributed $2.6 million, $1.4 million, and $1.2 million to its non-U.S. pension plans during fiscal 2018, 2017, and 2016, respectively. These contributions are reported in the change in other liabilities in the consolidated statements of cash flows.

During fiscal 2016, in an effort to reduce the size, volatility, mortality risk, and costs associated with its U.S. pension plans, the Company offered a voluntary lump-sum payout program to certain eligible former employees. Approximately 2,000 participants accepted the lump-sum settlement offer and a total of $65.3 million was paid from pension plan assets during fiscal 2016, which reduced the Company's pension obligation by the same amount. In connection with these lump-sum payouts, the Company recorded $42.1 million of non-cash settlement losses as other income and expense within the consolidated statement of operations related to the accelerated recognition of unamortized actuarial losses previously recorded on the consolidated balance sheets within accumulated other comprehensive loss.

Postretirement plans: The Company provides selected healthcare and life insurance benefits for eligible retired domestic employees. The Company periodically amends these unfunded plans to change the contribution rate of retirees and the amounts and forms of coverage. An annual limit on the Company's cost is defined for the majority of these plans. The Company's net periodic income for its postretirement plans during fiscal 2018, 2017, and 2016 was $0.2 million, $0.3 million, and $0.3 million, respectively.

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Measurement date: The Company uses March 31 as the measurement date for its pension and postretirement plans.

Changes in benefit obligations and plan assets, as well as the funded status of the Company's pension plans, for the fiscal years ended March 31, 2018 and 2017 were as follows:

	2018	2017
Change in benefit obligation:		
Benefit obligation at beginning of year	$269.8	$261.0
Service cost	0.5	0.6
Interest cost	9.9	9.8
Actuarial loss (gain)	4.4	(0.5)
Benefits paid	(16.9)	(19.8)
Curtailment gain (a)	(0.3)	-
Acquired obligations (b)	-	20.3
Effect of exchange rate changes	6.2	(1.6)
Benefit obligation at end of year	$273.6	$269.8
Change in plan assets:		
Fair value of plan assets at beginning of year	$148.2	$141.5
Actual return on plan assets	10.4	11.0
Benefits paid	(16.9)	(19.8)
Employer contributions	16.0	9.5
Acquired plan assets (b)	-	6.0
Fair value of plan assets at end of year	$157.7	$148.2
Funded status at end of year	$(115.9)	$(121.6)
Amounts recognized in the consolidated balance sheets:		
Current liability	$(6.3)	$(2.2)
Noncurrent liability	(109.6)	(119.4)
	$(115.9)	$(121.6)

(a) During the third quarter of fiscal 2018, the Company recorded a pension curtailment gain associated with the closure of a manufacturing facility in Austria (CIS segment). See Note 5 for additional information regarding the closure of this facility.

(b) In fiscal 2017, as a result of its acquisition of Luvata HTS, the Company acquired pension plans in Italy, Austria and the U.S. See Note 2 for additional information regarding this acquisition.

The accumulated benefit obligation for pension plans was $271.8 million and $266.8 million as of March 31, 2018 and 2017, respectively. The net actuarial loss related to the pension plans recognized in accumulated other comprehensive loss was $157.9 million and $156.8 million as of March 31, 2018 and 2017, respectively.

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Costs for the Company's pension plans included the following components for the fiscal years ended March 31, 2018, 2017, and 2016:

	2018	2017	2016
Components of net periodic benefit cost:			
Service cost	$0.5	$0.6	$0.6
Interest cost	9.9	9.8	11.2
Expected return on plan assets	(11.9)	(12.3)	(14.9)
Amortization of net actuarial loss	5.6	5.6	6.4
Settlements (a)	0.3	-	42.1
Curtailment gain (b)	(0.3)	-	-
Net periodic benefit cost	$4.1	$3.7	$45.4
Other changes in benefit obligation recognized in other comprehensive income (loss):			
Net actuarial loss	$(5.8)	$(1.0)	$(17.5)
Amortization of net actuarial loss (a)	5.9	5.6	48.5
Total recognized in other comprehensive income (loss)	$0.1	$4.6	$31.0

(a) During fiscal 2016, in connection with lump-sum payouts to pension plan participants, the Company recorded $42.1 million of settlement losses, which were previously recorded in accumulated other comprehensive loss.

(b) During the third quarter of fiscal 2018, the Company recorded a pension curtailment gain associated with the closure of a manufacturing facility in Austria (CIS segment). See Note 5 for additional information regarding the closure of this facility.

The Company estimates $5.6 million of net actuarial loss for its pension plans will be amortized from accumulated other comprehensive loss into net periodic benefit cost during fiscal 2019.

The Company used a discount rate of 4.0% and 4.1% as of March 31, 2018 and 2017, respectively, for determining its benefit obligations under its U.S. pension plans. The Company used a weighted-average discount rate of 1.7% as of both March 31, 2018 and 2017, for determining its benefit obligations under its non-U.S. pension plans. The Company used a discount rate of 4.1%, 4.1%, and 4.3% to determine its costs under its U.S. pension plans for fiscal 2018, 2017, and 2016, respectively. The Company used a weighted-average discount rate of 1.9%, 1.7%, and 1.3% to determine its costs under its non-U.S. pension plans for fiscal 2018, 2017, and 2016, respectively. The Company determined the discount rates used for its U.S. pension plans by modeling a portfolio of high-quality corporate bonds, with appropriate consideration given to expected defined benefit payment terms and duration of the respective pension obligations. The Company used a similar process to determine the discount rate for its non-U.S. pension obligations.

Plan assets in the Company's U.S. pension plans comprise 100 percent of the Company's world-wide pension plan assets. The Company's U.S. pension plan weighted-average asset allocations at the measurement dates of March 31, 2018 and 2017 were as follows:

	Target allocation as of March 31, 2018	Plan assets	
		2018	2017
Equity securities	60 %	58 %	58 %

Debt securities	38 %	38 %	38 %
Cash and cash equivalents	2 %	4 %	4 %
	100 %	100 %	100 %

Due to market conditions and other factors, including timing of benefit payments and other transactions, actual asset allocation may vary from the target allocation outlined above. The Company periodically rebalances the assets to the target allocations. As of March 31, 2018 and 2017, the Company's pension plans did not directly own shares of Modine common stock.

The Company employs a total return investment approach, whereby a mix of equities and fixed-income investments are used to maximize the long-term return of plan assets, while avoiding excessive risk. The Company has established pension plan guidelines based upon an evaluation of market conditions, tolerance for risk and cash requirements for benefit payments. The Company measures and monitors investment risk on an ongoing basis through quarterly investment portfolio reviews, annual liability measurements and periodic asset/liability studies.

The expected rate of return on U.S. plan assets is based upon historical return experience and forward-looking return expectations for major asset class categories. For fiscal 2018, 2017, and 2016 U.S. pension plan expense, the expected rate of return on plan assets was 7.5 percent, 8.0 percent and 8.0 percent, respectively. For fiscal 2019 U.S. pension plan expense, the Company has assumed a rate of return on plan assets of 7.5 percent.

The Company's funding policy for its U.S. pension plans is to contribute annually, at a minimum, the amount necessary on an actuarial basis to provide for benefits in accordance with applicable laws and regulations. The Company expects to make contributions of approximately $6.0 million to these plans during fiscal 2019.

Estimated pension benefit payments for the next ten fiscal years are as follows:

Fiscal Year	Estimated Pension Benefit Payments
2019	$ 20.4
2020	16.5
2021	17.0
2022	17.2
2023	17.4
2024-2028	85.2

Note 17: Derivative Instruments

The Company uses derivative financial instruments from time to time as a tool to manage certain financial risks. The Company's policy prohibits the use of leveraged derivatives. Accounting for derivatives and hedging activities requires derivative financial instruments to be measured at fair value and recognized as assets or liabilities in the consolidated balance sheets. Accounting for the gain or loss resulting from the change in fair value of the derivative financial instruments depends on whether it has been designated as a hedge, and, if so, on the nature of the hedging activity.

Commodity derivatives: The Company periodically enters into over-the-counter forward contracts related to forecasted purchases of aluminum and copper. The Company's strategy in entering into these contracts is to reduce its exposure to changing market prices of these commodities. In fiscal 2018, the Company designated certain commodity forward contracts as cash flow hedges for accounting purposes. Accordingly, for these designated hedges, the Company records unrealized gains and losses related to the change in the fair value of the contracts in other comprehensive income (loss) within shareholders' equity and subsequently recognizes the gains and losses within cost of sales as the underlying inventory is sold. The Company did not designate commodity contracts entered into in fiscal 2017 or 2016 for hedge accounting. Accordingly, unrealized gains and losses on these contracts have been recorded within cost of sales.

Foreign exchange contracts: The Company's foreign exchange risk management strategy uses derivative financial instruments to mitigate foreign currency exchange risk. The Company periodically enters into foreign currency forward contracts to hedge specific foreign currency-denominated assets and liabilities as well as forecasted transactions. In fiscal 2018, the Company designated certain hedges of forecasted transactions as cash flow hedges for accounting purposes. Accordingly, for these designated hedges, the Company records unrealized gains and losses related to the change in the fair value of the contracts in other comprehensive income (loss) within shareholders' equity and subsequently recognizes the gains and losses as a component of earnings at the same time and in the same

financial statement line that the underlying transactions impact earnings. The Company has not designated forward contracts related to foreign currency-denominated assets and liabilities as hedges. Accordingly, for these non-designated contracts, the Company records unrealized gains and losses related to changes in fair value in other income and expense. Gains and losses on these foreign currency contracts are offset by foreign currency gains and losses associated with the related assets and liabilities.

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The fair value of the Company's derivative financial instruments recorded in the consolidated balance sheets were as follows:

	Balance Sheet Location	March 31, 2018	March 31, 2017
Derivatives designated as hedges:			
Commodity derivatives	Other current assets	$ 0.1	$ -
Foreign exchange contracts	Other current assets	0.1	-
Derivatives not designated as hedges:			
Commodity derivatives	Other current assets	$ -	$ 0.7
Commodity derivatives	Other current liabilities	0.2	-
Foreign exchange contracts	Other current assets	0.2	0.2
Foreign exchange contracts	Other current liabilities	0.6	-

The amounts recorded during fiscal 2018 in the consolidated financial statements resulting from gains or losses on the Company's designated derivative financial instruments were not material. In fiscal 2018, the Company recorded gains for designated commodity and foreign exchange contracts totaling $0.2 million and $0.1 million, respectively, in other comprehensive income (loss). The Company subsequently reclassified $0.1 million of gains from foreign exchange contracts to net sales in the consolidated statement of operations.

The amounts recorded in the consolidated statements of operations for the Company's non-designated derivative financial instruments were as follows:

	Statement of Operations Location	Years ended March 31, 2018	2017	2016
Commodity derivatives	Cost of sales	$ 0.4	$ 0.5	$ (0.7)
Foreign exchange contracts	Net sales	(0.1)	-	-
Foreign exchange contracts	Other income (expense) - net	(0.5)	1.3	0.6
Total gains (losses)		$ (0.2)	$ 1.8	$ (0.1)

Note 18: Contingencies and Litigation

Market Risk
The Company sells a broad range of products that provide thermal solutions to customers operating primarily in the automotive, commercial vehicle, off-highway, and commercial, industrial, and building HVAC&R markets. The Company operates in diversified markets as a strategy for offsetting the risk associated with a downturn in any one or more of the markets it serves. The Company pursues new market opportunities after careful consideration of the potential associated risks and benefits. However, the risk associated with market downturns is still present.

Credit Risk
The Company invests excess cash primarily in investment quality, short-term liquid debt instruments. Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of accounts receivable. The Company sells a broad range of products that provide thermal solutions to customers operating throughout the world. In fiscal 2018, 2017, and 2016, two customers each accounted for ten percent or more of the Company's total sales. Sales to the Company's top ten customers were 48 percent, 54 percent, and 63

percent of total sales in fiscal 2018, 2017, and 2016, respectively. At March 31, 2018 and 2017, 36 percent and 35 percent, respectively, of the Company's trade accounts receivable were due from the Company's top ten customers. These customers operate primarily in the automotive, commercial vehicle and off-highway markets, which are influenced by similar market and general economic factors, as well as the commercial air conditioning markets. Collateral or advanced payments are generally not required. The Company has not experienced significant credit losses to customers in the markets served.

The Company manages credit risk through its focus on the following:

- Cash and investments – reviewing cash deposits and short-term investments to ensure banks have credit ratings acceptable to the Company and that short-term investments are maintained in secured or guaranteed instruments;
- Accounts receivable – performing periodic customer credit evaluations and actively monitoring their financial condition and applicable business news;

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- Pension assets – ensuring that investments within pension plans provide appropriate diversification, monitoring of investment teams, ensuring that portfolio managers adhere to the Company's investment policies and directives, and ensuring that exposure to high risk investments is limited; and
- Insurance – ensuring that insurance providers maintain acceptable financial ratings.

Counterparty Risk

The Company manages counterparty risk through its focus on the following:

- Customers – performing thorough reviews of customer credit reports and accounts receivable aging reports by internal credit committees;
- Suppliers – maintaining a supplier risk management program and utilizing industry sources to identify and mitigate high risk situations; and
- Derivatives – ensuring that counterparties to derivative instruments maintain credit ratings that are acceptable to the Company.

Environmental

The Company has recorded environmental investigation and remediation accruals related to soil and groundwater contamination at two manufacturing facilities in the United States, one of which the Company no longer owns, and at its former manufacturing facility in the Netherlands, along with accruals for lesser environmental matters at certain other facilities in the United States and Brazil. These accruals generally relate to facilities where past operations followed practices and procedures that were considered acceptable under then-existing regulations, or where the Company is a successor to the obligations of prior owners, and current laws and regulations require investigative and/or remedial work to ensure sufficient environmental compliance. The accruals for these environmental matters totaled $16.7 million and $16.8 million at March 31, 2018 and 2017, respectively. As additional information becomes available, the Company will re-assess the liabilities related to these matters and revise the estimated accruals, if necessary. Based upon currently available information, the Company believes the ultimate outcome of these matters, individually and in the aggregate, will not have a material adverse effect on its financial position. However, these matters are subject to inherent uncertainties, and unfavorable outcomes could occur, including significant monetary damages.

Brazil Antitrust Investigation

As of March 31, 2017, the Company accrued $4.7 million related to alleged violations of Brazil's antitrust regulations. During fiscal 2018, the Company paid $4.7 million to Brazil's Administrative Council for Economic Defense to settle this matter.

Other Litigation

In the normal course of business, the Company and its subsidiaries are named as defendants in various lawsuits and enforcement proceedings by private parties, governmental agencies and/or others in which claims are asserted against Modine. In the opinion of management, the liabilities, if any, which may ultimately result from such lawsuits or proceedings are not expected to have a material adverse effect on the Company's financial position.

Note 19: Accumulated Other Comprehensive Loss

Changes in accumulated other comprehensive loss were as follows:

	Foreign	Defined	Cash Flow	Total

	Currency Translation	Benefit Plans	Hedges	
Balance, March 31, 2017	$ (46.8)	$(135.0)	$ -	$(181.8)
Other comprehensive income (loss) before reclassifications	41.3	(5.7)	0.3	35.9
Reclassifications for amortization of unrecognized net loss (a)	-	5.6	-	5.6
Reclassifications of realized gains (b)	-	-	(0.1)	(0.1)
Income taxes	-	0.2	(0.1)	0.1
Total other comprehensive income	41.3	0.1	0.1	41.5
Balance, March 31, 2018	$ (5.5)	$(134.9)	$ 0.1	$(140.3)

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	Foreign Currency Translation	Defined Benefit Plans	Total
Balance, March 31, 2016	$ (36.0)	$(138.2)	$(174.2)
Other comprehensive income (loss) before reclassifications	(10.8)	(0.3)	(11.1)
Reclassifications for amortization of unrecognized net loss (a)	-	5.2	5.2
Income taxes	-	(1.7)	(1.7)
Total other comprehensive income (loss)	(10.8)	3.2	(7.6)
Balance, March 31, 2017	$ (46.8)	$(135.0)	$(181.8)

(a) Amounts are included in the calculation of net periodic benefit cost for the Company's defined benefit plans, which include pension and other postretirement plans. See Note 16 for additional information about the Company's pension plans.
(b) Amounts reclassified to net earnings. See Note 17 for additional information regarding derivative instruments.

Note 20: Segment and Geographic Information

The Company's product lines consist of heat-transfer components and systems. The Company serves vehicular and commercial, industrial, and building HVAC&R markets. In November 2016, the Company acquired Luvata HTS and, commencing from the acquisition date, has operated and reported results for the acquired business as its CIS segment. See Note 2 for additional information regarding the Luvata HTS acquisition.

The Company's Americas, Europe, and Asia segments represent its vehicular businesses and primarily serve the automotive, commercial vehicle, and off-highway markets. In addition, the Americas segment serves the automotive and commercial vehicle aftermarket in Brazil and provides coils to the commercial HVAC&R market in North America. The Company's CIS segment provides coils, coolers, and coating solutions to customers throughout the world. The Company's BHVAC segment provides heating, ventilating and air conditioning products to customers throughout the world.

Each operating segment is managed by a vice president and has separate financial results reviewed by the Company's chief operating decision maker. These results are used by management in evaluating the performance of each segment and in making decisions on the allocation of resources among the Company's various businesses.

Effective April 1, 2018, the Company combined its Americas, Europe, and Asia segment operations with the objective of operating as a more global, product-based organization. As part of this segment combination and its CIS integration activities, the Company also merged its Americas coils business into the CIS segment and expects to achieve operational improvements and organizational efficiencies as a result. Beginning for fiscal 2019, the Company will report financial results for the new Vehicular Thermal Solutions segment, which will include the current Americas, Europe and Asia segments.

The following is a summary of net sales, gross profit, and operating income by segment:

Years ended March 31,

Net sales:	2018	2017	2016
Americas	$580.7	$534.0	$585.5
Europe	568.3	524.3	524.1
Asia	165.8	111.5	79.0
CIS	620.0	177.7	-
BHVAC	191.2	171.6	181.4
Segment total	2,126.0	1,519.1	1,370.0
Corporate and eliminations	(22.9)	(16.1)	(17.5)
Net sales	$2,103.1	$1,503.0	$1,352.5

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	Years ended March 31,					
	2018		2017		2016	
Gross profit:	$'s	% of sales	$'s	% of sales	$'s	% of sales
Americas	$91.9	15.8%	$87.0	16.3%	$100.3	17.1%
Europe	83.8	14.7%	81.6	15.6%	69.5	13.3%
Asia	30.3	18.3%	18.7	16.8%	12.2	15.5%
CIS	92.1	14.9%	26.0	14.6%	-	-
BHVAC	58.0	30.3%	47.8	27.8%	54.2	29.9%
Segment total	356.1	16.8%	261.1	17.2%	236.2	17.2%
Corporate and eliminations (a)	0.4	-	(6.7)	-	(2.6)	-
Gross profit	$356.5	17.0%	$254.4	16.9%	$233.6	17.3%

	Years ended March 31,		
Operating income:	2018	2017	2016
Americas	$38.2	$27.9	$36.9
Europe	33.6	38.2	14.7
Asia	17.6	7.7	0.8
CIS	25.8	7.5	-
BHVAC	20.3	13.2	13.9
Segment total	135.5	94.5	66.3
Corporate and eliminations (a)	(43.3)	(52.2)	(29.2)
Operating income	$92.2	$42.3	$37.1

(a) During fiscal 2018 and 2017, the Company recorded $4.3 million and $14.8 million, respectively, of costs incurred directly related to the acquisition and integration of Luvata HTS within SG&A expenses at Corporate. During fiscal 2017, the Company recorded $4.3 million in cost of sales related to an inventory purchase accounting adjustment at Corporate, as the impact was excluded from the Company's measure of segment operating performance.

Inter-segment sales are accounted for based upon an established markup over production costs. Net sales for Corporate and eliminations primarily represent the elimination of inter-segment sales. The operating loss for Corporate includes certain research and development costs, legal, finance and other general corporate and central services expenses, and other costs that are either not directly attributable to an operating segment or not considered when management evaluates segment performance.

The following is a summary of total assets by segment:

	March 31,	
	2018	2017
Americas	$290.6	$282.9
Europe	324.0	269.4
Asia	144.5	111.3
CIS	630.0	576.0
BHVAC	88.1	85.2

Corporate and eliminations (a)	96.2	124.7
Total assets	$1,573.4	$1,449.5

(a) The decrease in total assets at Corporate was primarily due to a decrease in deferred tax assets resulting from the impact of tax reform in the U.S. See Note 7 for additional information regarding the reduction in the corporate tax rate in the U.S.

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The following is a summary of capital expenditures and depreciation and amortization expense by segment:

	Years ended March 31,		
Capital expenditures:	2018	2017	2016
Americas	$ 22.2	$ 26.3	$ 26.7
Europe	26.8	24.7	24.8
Asia	12.4	8.5	6.2
CIS	9.0	3.4	-
BHVAC	0.6	1.5	5.1
Total capital expenditures	$ 71.0	$ 64.4	$ 62.8

	Years ended March 31,		
Depreciation and amortization expense:	2018	2017	2016
Americas	$ 22.2	$ 22.7	$ 22.1
Europe	18.4	16.5	18.0
Asia	7.6	7.0	6.5
CIS	24.3	7.9	-
BHVAC	4.2	4.2	3.6
Total depreciation and amortization expense	$ 76.7	$ 58.3	$ 50.2

The following is a summary of net sales by geographical area, based upon the location of the selling unit:

	Years ended March 31,		
	2018	2017	2016
United States	$911.4	$657.8	$627.6
Italy	211.5	94.4	44.1
China	156.0	73.7	29.3
Hungary	153.9	145.6	145.9
Austria	151.7	125.2	113.1
Germany	132.6	130.1	155.3
Other	386.0	276.2	237.2
Net sales	$2,103.1	$1,503.0	$1,352.5

The following is a summary of property, plant and equipment by geographical area:

	March 31,	
	2018	2017
United States	$121.5	$124.7
Italy	62.0	55.8
Hungary	59.3	37.7
China	49.6	40.0
Mexico	49.4	47.0
Austria	42.8	44.3
Germany	37.2	28.9
Other	82.5	80.6
Total property, plant and equipment	$504.3	$459.0

The following is a summary of net sales by end market:

	Years ended March 31,		
	2018	2017	2016
Automotive	$526.0	$461.0	$396.8
Commercial vehicle	381.7	382.5	459.8
Off-highway	271.2	202.8	206.2
Other vehicular	61.9	55.8	57.6
Commercial & residential air conditioning	371.3	136.5	48.8
Commercial refrigeration	158.7	52.2	-
Other HVAC&R	332.3	212.2	183.3
Net sales	$2,103.1	$1,503.0	$1,352.5

Note 21: Quarterly Financial Data (Unaudited)

Quarterly financial data is summarized below for the years ended March 31, 2018 and 2017:

	Fiscal 2018 quarters ended				
	June	Sept.	Dec.	March	Fiscal 2018
Net sales	$515.5	$508.3	$512.7	$566.6	$ 2,103.1
Gross profit	88.5	86.1	85.4	96.5	356.5
Net earnings (loss) (a)	17.4	16.3	(27.9)	18.0	23.8
Net earnings (loss) attributable to Modine (a)	17.0	15.9	(28.3)	17.6	22.2
Net earnings (loss) per share attributable to Modine shareholders:					
Basic	$0.34	$0.32	$(0.57)	$0.35	$ 0.44
Diluted	0.34	0.31	(0.57)	0.34	0.43

	Fiscal 2017 quarters ended				
	June	Sept.	Dec.	March	Fiscal 2017
Net sales	$347.2	$317.7	$349.8	$488.3	$ 1,503.0
Gross profit	62.3	48.0	59.0	85.1	254.4
Net earnings (loss) (b)	8.9	(4.0)	1.9	8.1	14.9
Net earnings (loss) attributable to Modine (b)	8.6	(4.1)	1.7	8.0	14.2
Net earnings (loss) per share attributable to Modine shareholders:					
Basic	$0.18	$(0.09)	$0.04	$0.16	$ 0.29
Diluted	0.18	(0.09)	0.04	0.16	0.29

(a) During fiscal 2018, restructuring expenses totaled $1.7 million, $0.4 million, $9.4 million, and $4.5 million for the quarters ended June 30, 2017, September 30, 2017, December 31, 2017, and March 31, 2018, respectively (see Note 5). During the third quarter of fiscal 2018, the Company recorded a $1.3 million asset impairment charge related to a manufacturing facility in Austria (see Note 5). During the fourth quarter of fiscal 2018, the Company recorded a $1.2 million impairment charge related to intangible assets (see Note 12). During fiscal 2018, costs directly related to the acquisition and integration of Luvata HTS totaled $1.6 million, $1.1 million, $1.0 million,

and $0.6 million for the quarters ended June 30, 2017, September 30, 2017, December 31, 2017, and March 31, 2018, respectively (see Note 2). The Company recorded charges totaling $35.7 million and $2.3 million resulting for certain income tax effects of recently-enacted U.S. tax legislation in the quarters ended December 31, 2017 and March 31, 2018, respectively (see Note 7). During the fourth quarter of fiscal 2018, the Company reversed a portion of a valuation allowance related to a foreign tax jurisdiction, and, as a result, recorded an income tax benefit of $2.8 million (see Note 7).

(b) During fiscal 2017, restructuring expenses totaled $2.3 million, $2.1 million, $1.6 million, and $4.9 million for the quarters ended June 30, 2016, September 30, 2016, December 31, 2016, and March 31, 2017, respectively (see Note 5). During fiscal 2017, the Company sold two previously-closed manufacturing facilities in its Americas segment and a facility in its Europe segment and recognized net gains totaling $1.2 million and $0.8 million in the quarters ended September 30, 2016 and March 31, 2017, respectively. During fiscal 2017, costs directly related to the acquisition and integration of Luvata HTS totaled $1.4 million, $3.0 million, $7.2 million, and $3.2 million for the quarters ended June 30, 2016, September 30, 2016, December 31, 2016, and March 31, 2017, respectively (see Note 2). During the fourth quarter of fiscal 2017, the Company recorded a deferred tax valuation allowance related to a foreign tax jurisdiction, and, as a result, recorded income tax expense of $2.0 million (see Note 7).

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Modine Manufacturing Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the consolidated financial statements, including the related notes, as listed in the index appearing under Item 15(a)(1), and the financial statement schedule listed in the index appearing under Item 15(a)(2) of Modine Manufacturing Company and its subsidiaries (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of March 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of March 31, 2018 and 2017, and the results of their operations and their cash flows for each of the three years in the period ended March 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of March 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for the presentation of pension costs in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our

audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

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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/ PricewaterhouseCoopers LLP
Milwaukee, Wisconsin
May 24, 2018

We have served as the Company's auditor since 1935.

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES.

Conclusion Regarding Disclosure Controls and Procedures

As of the end of the period covered by this Annual Report on Form 10-K, management of the Company, at the direction of the General Counsel and under the supervision, and with the participation, of the Company's President and Chief Executive Officer and Vice President, Finance and Chief Financial Officer, evaluated the effectiveness of the Company's disclosure controls and procedures, at a reasonable assurance level, as defined in the Securities Exchange Act Rules 13a-15(e) and 15d-15(e). Based upon that evaluation, the President and Chief Executive Officer and Vice President, Finance and Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective, at a reasonable assurance level, as of March 31, 2018.

Management’s Report on Internal Control Over Financial Reporting

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended. The Company’s internal control over financial reporting is a process designed by, or under the supervision of, the Company’s President and Chief Executive Officer and Vice President, Finance and Chief Financial Officer, and effected by the Company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of its financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. The Company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) 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 (iii) 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.

Management, with the participation of the Company’s President and Chief Executive Officer and Vice President, Finance and Chief Financial Officer, assessed the effectiveness of the Company’s internal control over financial reporting as of March 31, 2018. In making its assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in “Internal Control—Integrated Framework (2013).” Based upon this assessment, management concluded that, as of March 31, 2018, the Company’s internal control over financial reporting was effective.

The effectiveness of the Company’s internal control over financial reporting as of March 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control Over Financial Reporting

There have been no changes in internal control over financial reporting during the fourth quarter of fiscal 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

ITEM 9B. OTHER INFORMATION.

None.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Directors. The Company incorporates by reference the information appearing in the Company's Proxy Statement for the 2018 Annual Meeting of Shareholders to be held on July 19, 2018 (the “2018 Annual Meeting Proxy Statement”) under the caption “Election of Directors.”

Executive Officers. The information in response to this Item appears under the caption "Executive Officers of the Registrant" in this Form 10-K.

Compliance with Section 16(a) of the Exchange Act. The Company incorporates by reference the information appearing in the 2018 Annual Meeting Proxy Statement under the caption “Section 16(a) Beneficial Ownership Reporting Compliance.”

Code of Conduct. The Company incorporates by reference the information appearing in the 2018 Annual Meeting Proxy Statement under the caption “Corporate Governance – Code of Conduct.” The Company's Code of Conduct is included on its website, www.modine.com (About Modine link).

Board Committee Charters. The Board of Directors has approved charters for its Audit Committee, Officer Nomination and Compensation Committee, Corporate Governance and Nominating Committee and Technology Committee. These charters are included on the Company’s website, www.modine.com (Investors link).

Audit Committee Financial Expert. The Company incorporates by reference the information appearing in the 2018 Annual Meeting Proxy Statement under the caption “Committees of the Board of Directors – Audit Committee.”

Audit Committee Disclosure. The Company incorporates by reference the information appearing in the 2018 Annual Meeting Proxy Statement under the captions “Committees of the Board of Directors – Audit Committee” and “Board Meetings and Committees.”

Guidelines on Corporate Governance. The Board of Directors has adopted Guidelines on Corporate Governance. The Company’s Guidelines on Corporate Governance are included on its website, www.modine.com (Investors link).

Security Holder Recommendation of Board Nominees. The Company incorporates by reference the information appearing in the 2018 Annual Meeting Proxy Statement under the caption “Shareholder Nominations and Recommendations of Director Candidates.”

ITEM 11. EXECUTIVE COMPENSATION.

The information appearing in the 2018 Annual Meeting Proxy Statement under the captions “Compensation Discussion and Analysis,” “Compensation of Directors,” “Committees of the Board of Directors – Officer Nomination and Compensation Committee: Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report” is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The Company incorporates by reference the information relating to stock ownership under the caption “Security Ownership of Certain Beneficial Owners and Management,” and under the caption “Equity Compensation Plan

Information," in the 2018 Annual Meeting Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The Company incorporates by reference the information contained in the 2018 Annual Meeting Proxy Statement under the captions "Certain Relationships and Related Party Transactions" and "Director Independence."

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The Company incorporates by reference the information contained in the 2018 Annual Meeting Proxy Statement under the caption "Independent Auditor's Fees for Fiscal 2018 and 2017."

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) Documents Filed. The following documents are filed as part of this Report:

	Page in Form 10-K
1. The consolidated financial statements of Modine Manufacturing Company and its subsidiaries filed under Item 8:	
Consolidated Statements of Operations for the years ended March 31, 2018, 2017 and 2016	41
Consolidated Statements of Comprehensive Income for the years ended March 31, 2018, 2017 and 2016	42
Consolidated Balance Sheets at March 31, 2018 and 2017	43
Consolidated Statements of Cash Flows for the years ended March 31, 2018, 2017 and 2016	44
Consolidated Statements of Shareholders' Equity for the years ended March 31, 2018, 2017 and 2016	45
Notes to Consolidated Financial Statements	46-74
Report of Independent Registered Public Accounting Firm	75-76
2. Financial Statement Schedules	
The following financial statement schedule should be read in conjunction with the consolidated financial statements set forth in Item 8:	
Schedule II -- Valuation and Qualifying Accounts	80
Schedules other than those listed above are omitted because they are not applicable, not required, or because the required information is included in the consolidated financial statements and the notes thereto.	
3. Exhibits and Exhibit Index.	81-83

See the Exhibit Index included as the last part of this report, which is incorporated herein by reference. Each management contract and compensatory plan or arrangement required to be filed as an exhibit to this report is identified in the Exhibit Index by an asterisk following its exhibit number.

ITEM 16. FORM 10-K SUMMARY.

None.

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MODINE MANUFACTURING COMPANY AND SUBSIDIARIES
(A Wisconsin Corporation)

SCHEDULE II VALUATION AND QUALIFYING ACCOUNTS
For the years ended March 31, 2018, 2017 and 2016
(In millions)

Description	Balance at Beginning of Period	Additions Charged (Benefit) to Costs and Expenses	Charged to Other Accounts		Balance at End of Period
2018: Valuation Allowance for Deferred Tax Assets	$ 49.6	$ (6.7)	$ 6.0	(a)	$ 48.9
2017: Valuation Allowance for Deferred Tax Assets	$ 50.8	$ (0.3)	$ (0.9)	(a)	$ 49.6
2016: Valuation Allowance for Deferred Tax Assets	$ 48.0	$ 1.5	$ 1.3	(a)	$ 50.8

Notes:

(a) Foreign currency translation, increases due to the acquisition of Luvata HTS and other adjustments

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MODINE MANUFACTURING COMPANY
(THE "REGISTRANT")
(COMMISSION FILE NO. 1-1373)

EXHIBIT INDEX
TO
2018 ANNUAL REPORT ON FORM 10-K

Exhibit No.	Description	Incorporated Herein By Referenced To	Filed Herewith
2.1	Share Sale and Purchase Agreement between Luvata Heat Transfer Solutions II AB and Modine Manufacturing Company, dated as of September 6, 2016.	Exhibit 2.1 to Registrant's Current Report on Form 8-K dated September 6, 2016	
3.1	Amended and Restated Articles of Incorporation, as amended.		X
3.2	Bylaws, as amended.	Exhibit 3.1 to Registrant's Current Report on Form 8-K dated July 20, 2017	
4.1	Form of Stock Certificate of the Registrant.	Exhibit 4(a) to Form 10-K for the fiscal year ended March 31, 2003 ("2003 10-K")	
4.2	Amended and Restated Articles of Incorporation, as amended.	See Exhibit 3.1 hereto.	
4.3**	Note Purchase and Private Shelf Agreement (the "Original Note Purchase Agreement") dated as of August 12, 2010 among the Registrant and the Series A Purchasers named therein of $125,000,000 6.83% Secured Senior Notes, Series A, due August 12, 2020 and $25,000,000 Private Shelf Facility and each Prudential Affiliate (as defined therein) that may become bound by certain provisions thereof.	Exhibit 4.2 to Registrant's Current Report on Form 8-K dated August 12, 2010 ("August 12, 2010 8-K")	
4.4**	Amended and Restated Collateral Agency Intercreditor Agreement (the "Original Intercreditor Agreement") dated as of August 12, 2010 among the Lenders (as defined therein), the Noteholders (as defined therein) and JPMorgan Chase Bank, N.A. as Collateral Agent.	Exhibit 4.3 to August 12, 2010 8-K	
4.5**	First Amendment to Note Purchase and Private Shelf Agreement and Waiver dated as of March 15, 2012, with Prudential Investment Management, Inc., The Prudential Insurance Company of America and Prudential Retirement Insurance and Annuity Company (collectively the "Noteholders") pursuant to which the Company and the Noteholders amended the Original Note Purchase Agreement.	Exhibit 4.2 to Registrant's Current Report on Form 8-K dated March 15, 2012	
4.6**	Second Amendment to Note Purchase and Private Shelf Agreement dated as of April 20, 2012, with Prudential Investment Management,	Exhibit 4.2 to Registrant's Current Report on Form	

	Inc., The Prudential Insurance Company of America and Prudential Retirement Insurance and Annuity Company (collectively the "Noteholders") pursuant to which the Company and the Noteholders amended the Original Note Purchase Agreement, as amended.	8-K dated April 20, 2012
4.7**	Third Amendment to Note Purchase and Private Shelf Agreement dated as of August 6, 2012, with Prudential Investment Management, Inc., The Prudential Insurance Company of America and Prudential Retirement Insurance and Annuity Company (collectively the "Noteholders") pursuant to which the Company and the Noteholders amended the Original Note Purchase Agreement, as amended.	Exhibit 4.2 to Registrant's Current Report on Form 8-K dated August 6, 2012

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4.8**	Second Amended and Restated Credit Agreement dated as of August 30, 2013, with JPMorgan Chase Bank, N.A., as Administrative Agent, LC Issuer, Swing Line Lender and as a Lender, and U.S. Bank, N.A. and Wells Fargo Bank, N.A. as Syndication Agents and as Lenders, BMO Harris Bank N.A., as Documentation Agent and as Lender and Associated Bank, N.A., Comerica Bank and Sovereign Bank as Lenders.	Exhibit 4.1 to Registrant's Current Report on Form 8-K dated August 30, 2013 ("August 30, 2013 8-K")
4.9**	Fourth Amendment to Note Purchase and Private Shelf Agreement (the "Fourth Note Purchase Amendment") dated as of August 30, 2013, with Prudential Investment Management, Inc., The Prudential Insurance Company of America and Prudential Retirement Insurance and Annuity Company (collectively the "Note Holders") pursuant to which the Company and the Note Holders amended the Original Note Purchase Agreement, as amended.	Exhibit 4.2 to August 30, 2013 8-K
4.10**	First Amendment to the Original Intercreditor Agreement, among the Lenders, the Note Holders and JPMorgan as Collateral Agent, pursuant to which the Lenders, the Note Holders and JPMorgan amended the Original Intercreditor Agreement.	Exhibit 4.3 to August 30, 2013 8-K
4.11	Credit Facility Agreement among Modine Holding GmbH, Modine Europe GmbH and Deutsche Bank AG dated as of April 27, 2012.	Exhibit 4.10 to Registrant's Form 10-K for the fiscal year ended March 31, 2012
4.12	Third Amended and Restated Credit Agreement dated as of November 15, 2016.	Exhibit 4.1 to Registrant's Current Report on Form 8-K dated November 15, 2016 ("November 15, 2016 8-K")
4.13	Amended and Restated Note Purchase and Private Shelf Agreement dated as of November 15, 2016.	Exhibit 4.2 to November 15, 2016 8-K
10.1*	Director Emeritus Retirement Plan effective April 1, 1992 (and frozen as of July 1, 2000).	Exhibit 10(a) to Registrant's Form 10-K for the fiscal year ended March 31, 2002
10.2*	Employment Agreement between the Registrant and Thomas A. Burke dated as of June 15, 2007.	Exhibit 10.3 to Registrant's Current Report on Form 8-K dated June 15, 2007
10.3*	Form of Amendment No. 1 to Employment Agreement entered into as of July 1, 2008 with Thomas A. Burke.	Exhibit 10.1 to Registrant's Current Report on Form 8-K dated July 1, 2008
10.4*	Form of Change in Control and Termination Agreement (amended and restated) between the Registrant and officers other than Thomas A. Burke.	Exhibit 10(f) to Registrant's Form 10-K for the year ended March 31, 2004

10.5*	Employment Agreement, dated July 1, 2014, between Modine Holding GmbH and Holger Schwab, effective as of July 1, 2015.	Exhibit 10.1 to Registrant’s Current Report on Form 8-K dated July 1, 2014
10.6*	Executive Supplemental Retirement Plan (as amended).	Exhibit 10(f) to Registrant's Form 10-K for the fiscal year ended March 31, 2000
10.7*	Deferred Compensation Plan (as amended).	Exhibit 10(y) to 2003 10-K

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10.8*	2008 Incentive Compensation Plan (Amended and Restated effective May 7, 2014).	Exhibit 10.1 to Registrant's Current Report on Form 8-K dated July 17, 2014	
10.9*	2008 Incentive Compensation Plan Performance Stock Award Agreement.	Exhibit 10.1 to Registrant’s Form 10-Q for the quarter ended June 30, 2017	
10.10*	2008 Incentive Compensation Plan Incentive Stock Option Award Agreement.	Exhibit 10.2 to Registrant’s Form 10-Q for the quarter ended June 30, 2017	
10.11*	2008 Incentive Compensation Plan Restricted Stock Unit Award Agreement.	Exhibit 10.3 to Registrant’s Form 10-Q for the quarter ended June 30, 2017	
10.12*	2008 Incentive Compensation Plan Non-Qualified Stock Option Award Agreement.	Exhibit 10.4 to Registrant’s Form 10-Q for the quarter ended June 30, 2017	
10.13*	Amendment No. 1 to Form of Change in Control and Termination Agreement (amended and restated) between the Registrant and Officers other than Thomas A. Burke.	Exhibit 10.17 to Registrant's Form 10-K for the fiscal year ended March 31, 2011	
10.14*	Supplemental Severance Policy.	Exhibit 10.1 to Registrant’s Current Report on Form 8-K dated October 17, 2011	
10.15*	2017 Incentive Compensation Plan.	Exhibit 10.1 to Registrant’s Current Report on Form 8-K dated July 20, 2017	
10.16*	2017 Incentive Compensation Plan Non-Employee Director Restricted Stock Unit Award.	Exhibit 10.2 to Registrant’s Form 10-Q for the quarter ended September 30, 2017	
21	List of subsidiaries of the Registrant.		X
23	Consent of independent registered public accounting firm.		X
31.1	Rule 13a-14(a)/15d-14(a) Certification of Thomas A. Burke, President and Chief Executive Officer.		X
31.2	Rule 13a-14(a)/15d-14(a) Certification of Michael B. Lucareli, Vice President, Finance and Chief Financial Officer.		X
32.1	Section 1350 Certification of Thomas A. Burke, President and Chief Executive Officer.		X
32.2			X

	Section 1350 Certification of Michael B. Lucareli, Vice President, Finance and Chief Financial Officer.	
101.INS	Instance Document	X
101.SCH	XBRL Taxonomy Extension Schema	X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	X

* Denotes management contract or executive compensation plan or arrangement required to be filed as an exhibit pursuant to Item 15 of Form 10-K.

** Pursuant to Item 601(b)(4)(iii)(A) of Regulation S-K, the Registrant has omitted certain agreements with respect to long-term debt not exceeding 10% of consolidated total assets. The Registrant agrees to furnish a copy of any such agreements to the Securities and Exchange Commission upon request.

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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.

Date: May 24, 2018	Modine Manufacturing Company	
	By:	/s/ Thomas A. Burke Thomas A. Burke, President and Chief Executive Officer (Principal Executive Officer)

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 indicated.

/s/ Thomas A. Burke Thomas A. Burke President, Chief Executive Officer and Director (Principal Executive Officer)	May 24, 2018
/s/ Michael B. Lucareli Michael B. Lucareli Vice President, Finance and Chief Financial Officer (Principal Financial and Accounting Officer)	May 24, 2018
/s/ Marsha C. Williams Marsha C. Williams Director	May 24, 2018
/s/ David J. Anderson David J. Anderson Director	May 24, 2018
/s/ David G. Bills David G. Bills Director	May 24, 2018
/s/ Charles P. Cooley Charles P. Cooley Director	May 24, 2018
/s/ Suresh V. Garimella Suresh V. Garimella Director	May 24, 2018
/s/ Larry O. Moore	

Larry O. Moore
Director
May 24, 2018

/s/ Christopher W. Patterson
Christopher W. Patterson
Director
May 24, 2018

/s/ Christine Y. Yan
Christine Y. Yan
Director
May 24, 2018