

Ingersoll-Rand plc  
Form 10-Q  
April 25, 2018  
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UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

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FORM 10-Q

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

For the quarterly period 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 001-34400

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INGERSOLL-RAND PUBLIC LIMITED COMPANY  
(Exact name of registrant as specified in its charter)

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Ireland 98-0626632  
(State or other jurisdiction of (I.R.S. Employer  
incorporation or organization) Identification No.)  
170/175 Lakeview Dr.  
Airside Business Park  
Swords, Co. Dublin  
Ireland  
(Address of principal executive offices, including zip code)  
+(353) (0) 18707400  
(Registrant's telephone number, including area code)

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

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

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.

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. "

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

YES " NO x

The number of ordinary shares outstanding of Ingersoll-Rand plc as of April 13, 2018 was 247,965,196.

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## PART I - FINANCIAL INFORMATION

## Item 1. Financial Statements

## INGERSOLL-RAND PLC

## CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(Unaudited)

	Three months ended	
	March 31,	
In millions, except per share amounts	2018	2017
Net revenues	\$3,384.5	\$3,000.6
Cost of goods sold	(2,420.2 )	(2,126.1 )
Selling and administrative expenses	(720.9 )	(659.5 )
Operating income	243.4	215.0
Interest expense	(72.9 )	(54.0 )
Other income/(expense), net	(4.0 )	(4.7 )
Earnings before income taxes	166.5	156.3
Provision for income taxes	(33.0 )	(28.7 )
Earnings from continuing operations	133.5	127.6
Discontinued operations, net of tax	(9.4 )	(6.5 )
Net earnings	124.1	121.1
Less: Net earnings attributable to noncontrolling interests	(3.7 )	(4.0 )
Net earnings attributable to Ingersoll-Rand plc	\$120.4	\$117.1
Amounts attributable to Ingersoll-Rand plc ordinary shareholders:		
Continuing operations	\$129.8	\$123.6
Discontinued operations	(9.4 )	(6.5 )
Net earnings	\$120.4	\$117.1
Earnings (loss) per share attributable to Ingersoll-Rand plc ordinary shareholders:		
Basic:		
Continuing operations	\$0.52	\$0.48
Discontinued operations	(0.04 )	(0.03 )
Net earnings	\$0.48	\$0.45
Diluted:		
Continuing operations	\$0.51	\$0.47
Discontinued operations	(0.03 )	(0.02 )
Net earnings	\$0.48	\$0.45
Weighted-average shares outstanding:		
Basic	250.4	259.4
Diluted	253.0	262.6
Dividends declared per ordinary share	\$0.45	\$0.40
Total comprehensive income	\$276.6	\$240.2
Less: Total comprehensive income attributable to noncontrolling interests	4.1	2.5
Total comprehensive income attributable to Ingersoll-Rand plc	\$272.5	\$237.7
See accompanying notes to Condensed Consolidated Financial Statements.		

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CONDENSED CONSOLIDATED BALANCE SHEETS

(Unaudited)

In millions	March 31, 2018	December 31, 2017
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 1,175.1	\$ 1,549.4
Accounts and notes receivable, net	2,516.0	2,477.4
Inventories, net	1,778.8	1,555.4
Other current assets	601.6	536.9
Total current assets	6,071.5	6,119.1
Property, plant and equipment, net	1,611.3	1,551.3
Goodwill	6,118.9	5,935.7
Intangible assets, net	3,756.3	3,742.9
Other noncurrent assets	807.1	824.3
Total assets	\$ 18,365.1	\$ 18,173.3
<b>LIABILITIES AND EQUITY</b>		
Current liabilities:		
Accounts payable	\$ 1,666.1	\$ 1,556.1
Accrued compensation and benefits	364.4	509.7
Accrued expenses and other current liabilities	1,685.0	1,655.2
Short-term borrowings and current maturities of long-term debt	605.2	1,107.0
Total current liabilities	4,320.7	4,828.0
Long-term debt	3,745.5	2,957.0
Postemployment and other benefit liabilities	1,264.5	1,285.3
Deferred and noncurrent income taxes	768.7	757.5
Other noncurrent liabilities	1,125.3	1,138.6
Total liabilities	11,224.7	10,966.4
Equity:		
Ingersoll-Rand plc shareholders' equity:		
Ordinary shares	272.5	274.0
Ordinary shares held in treasury, at cost	(1,719.3 )	(1,719.4 )
Capital in excess of par value	249.8	461.3
Retained earnings	8,904.4	8,903.2
Accumulated other comprehensive income (loss)	(626.7 )	(778.8 )
Total Ingersoll-Rand plc shareholders' equity	7,080.7	7,140.3
Noncontrolling interests	59.7	66.6
Total equity	7,140.4	7,206.9
Total liabilities and equity	\$ 18,365.1	\$ 18,173.3

See accompanying notes to Condensed Consolidated Financial Statements.

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INGERSOLL-RAND PLC  
 CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
 (Unaudited)

In millions	Three months ended	
	2018	2017
Cash flows from operating activities:		
Net earnings	\$124.1	\$121.1
Discontinued operations, net of tax	9.4	6.5
Adjustments for non-cash transactions:		
Asset impairment	—	8.4
Depreciation and amortization	93.4	86.7
Changes in assets and liabilities, net	(330.7 )	(293.0 )
Other non-cash items, net	58.0	37.0
Net cash provided by (used in) continuing operating activities	(45.8 )	(33.3 )
Net cash provided by (used in) discontinued operating activities	(20.4 )	(10.1 )
Net cash provided by (used in) operating activities	(66.2 )	(43.4 )
Cash flows from investing activities:		
Capital expenditures	(52.8 )	(35.2 )
Acquisition of businesses, net of cash acquired	(201.6 )	(9.8 )
Advance to equity investment	(4.0 )	—
Proceeds from sale of property, plant and equipment	0.7	0.4
Net cash provided by (used in) continuing investing activities	(257.7 )	(44.6 )
Cash flows from financing activities:		
Short-term borrowings (payments), net	247.9	—
Proceeds from long-term debt	1,147.0	—
Payments of long-term debt	(1,115.4 )	—
Net proceeds (repayments) from debt	279.5	—
Debt issuance costs	(8.5 )	(0.2 )
Dividends paid to ordinary shareholders	(111.6 )	(102.7 )
Dividends paid to noncontrolling interests	(11.0 )	(6.9 )
Repurchase of ordinary shares	(250.0 )	(250.1 )
Other financing activities, net	5.2	18.4
Net cash provided by (used in) continuing financing activities	(96.4 )	(341.5 )
Effect of exchange rate changes on cash and cash equivalents	46.0	37.3
Net increase (decrease) in cash and cash equivalents	(374.3 )	(392.2 )
Cash and cash equivalents - beginning of period	1,549.4	1,714.7
Cash and cash equivalents - end of period	\$1,175.1	\$1,322.5

See accompanying notes to Condensed Consolidated Financial Statements.

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INGERSOLL-RAND PLC

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Unaudited)

Note 1. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements of Ingersoll-Rand plc (Plc or Parent Company), a public limited company incorporated in Ireland in 2009, and its consolidated subsidiaries (collectively, the Company), reflect the consolidated operations of the Company and have been prepared in accordance with United States Securities and Exchange Commission (SEC) interim reporting requirements. Accordingly, the accompanying condensed consolidated financial statements do not include all disclosures required by accounting principles generally accepted in the United States of America (GAAP) for full financial statements and should be read in conjunction with the consolidated financial statements included in the Ingersoll-Rand plc Annual Report on Form 10-K for the year ended December 31, 2017. In the opinion of management, the accompanying condensed consolidated financial statements contain all adjustments, which include only normal recurring adjustments, necessary to fairly state the condensed consolidated results for the interim periods presented.

Note 2. Recent Accounting Pronouncements

The Financial Accounting Standards Board (FASB) Accounting Standards Codification is the sole source of authoritative GAAP other than SEC issued rules and regulations that apply only to SEC registrants. The FASB issues an Accounting Standards Update (ASU) to communicate changes to the codification. The Company considers the applicability and impact of all ASU's. ASU's not listed below were assessed and determined to be either not applicable or are not expected to have a material impact on the consolidated financial statements.

Recently Adopted Accounting Pronouncements

In October 2016, the FASB issued ASU 2016-16, "Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory" (ASU 2016-16) which removed the prohibition in Topic 740 against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. As a result, the income tax consequences of an intra-entity transfer of assets other than inventory will be recognized in the current period income statement rather than being deferred until the assets leave the consolidated group. The Company applied ASU 2016-16 on a modified retrospective basis through a cumulative-effect adjustment which reduced Retained earnings by \$9.1 million as of January 1, 2018.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers" (ASC 606), which created a comprehensive, five-step model for revenue recognition that requires a company to recognize revenue to depict the transfer of promised goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. Under ASC 606, a company will be required to use more judgment and make more estimates when considering contract terms as well as relevant facts and circumstances when identifying performance obligations, estimating the amount of variable consideration in the transaction price and allocating the transaction price to each separate performance obligation. The Company adopted this standard on January 1, 2018 using the modified retrospective approach and recorded a cumulative effect adjustment to increase Retained earnings by \$2.4 million with related amounts not materially impacting Net revenues, Operating income or the Balance Sheet. Refer to Note 11, "Revenue," for a further discussion on the adoption of ASC 606.

Recently Issued Accounting Pronouncements

In February 2018, the FASB issued ASU 2018-02, "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income" (ASU 2018-02), which allows companies to reclassify stranded tax effects in Accumulated other comprehensive income (loss) that have been caused by the Tax Cuts and Jobs Act of 2017 (the Act) to Retained earnings for each period in which the effect of the change in the U.S. federal corporate income tax rate is recorded. The FASB has made the reclassification optional. ASU 2018-02 is effective for annual reporting periods beginning after December 15, 2018 with early adoption permitted. The Company is currently assessing the impact of the ASU on its financial statements and whether or not it will exercise the option to reclassify the stranded tax effects caused by the Act.

In August 2017, the FASB issued ASU 2017-12, "Derivatives and hedging (Topic 815): Targeted improvements to accounting for hedging activities" (ASU 2017-12). This standard more closely aligns the results of cash flow and fair

value hedge accounting with risk management activities through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results in the financial statements. This standard also addresses specific limitations in current GAAP by expanding hedge accounting for both nonfinancial and financial risk components and by refining the measurement of hedge results to better reflect an entity's hedging strategies. Additionally, by aligning the timing of recognition of hedge results with the earnings effect of the hedged item for cash flow and net investment hedges, and by including the earnings effect of the hedging instrument in the same income statement line item in which the earnings effect of the hedged item is presented, the results of an entity's hedging program and the cost of executing that program will be more visible to users of financial statements. ASU



2017-12 is effective for annual reporting periods beginning after December 15, 2018 with early adoption permitted. The Company is currently assessing the impact of this ASU on its financial statements.

In February 2016, the FASB issued ASU 2016-02, "Leases" (ASU 2016-02) which requires the lease rights and obligations arising from lease contracts, including existing and new arrangements, to be recognized as assets and liabilities on the balance sheet. The standard also requires additional disclosures by lessees and contains targeted changes to accounting by lessors. ASU 2016-02 is effective for annual periods beginning after December 15, 2018, including interim periods within those annual periods, with early adoption permitted. The standard is required to be adopted at the earliest period presented using a modified retrospective approach. The Company has developed an implementation plan and is currently gathering data to further assess the impact of the ASU on its financial statements. The adoption is anticipated to have a material impact on assets and liabilities due to the recognition of lease rights and obligations on the Balance Sheet effective January 1, 2019. However, the Company does not expect the adoption to have a material impact to its Statements of Cash Flows or Statements of Comprehensive Income.

#### Note 3. Inventories

Depending on the business, U.S. inventories are stated at the lower of cost or market using the last-in, first-out (LIFO) method or the lower of cost or market using the first-in, first-out (FIFO) method. Non-U.S. inventories are primarily stated at the lower of cost or market using the FIFO method.

The major classes of inventory were as follows:

In millions	March 31, December 31,	
	2018	2017
Raw materials	\$528.4	\$ 502.8
Work-in-process	210.9	180.5
Finished goods	1,106.9	941.0
	1,846.2	1,624.3
LIFO reserve	(67.4 )	(68.9 )
Total	\$1,778.8	\$ 1,555.4

The Company performs periodic assessments to determine the existence of obsolete, slow-moving and non-saleable inventories and records necessary provisions to reduce such inventories to net realizable value. Reserve balances, primarily related to obsolete and slow-moving inventories, were \$122.0 million and \$120.3 million at March 31, 2018 and December 31, 2017, respectively.

#### Note 4. Goodwill

The Company records as goodwill the excess of the purchase price over the fair value of the net assets acquired in an acquisition. Measurement period adjustments may be recorded once a final valuation has been performed. Goodwill is tested and reviewed annually for impairment during the fourth quarter or whenever there is a significant change in events or circumstances that indicate that the fair value of the asset may be less than the carrying amount of the asset.

The changes in the carrying amount of goodwill for the three months ended March 31, 2018 were as follows:

In millions	Climate	Industrial	Total
Net balance as of December 31, 2017	\$5,065.1	\$ 870.6	\$5,935.7
Acquisitions <sup>(1)</sup>	119.9	2.3	122.2
Currency translation	51.9	9.1	61.0
Net balance as of March 31, 2018	\$5,236.9	\$ 882.0	\$6,118.9

(1) Refer to Note 16, "Acquisitions and Divestitures" for more information regarding acquisitions during the period. The net goodwill balances at March 31, 2018 and December 31, 2017 include \$2,496.0 million of accumulated impairment. The accumulated impairment relates entirely to a charge in the fourth quarter of 2008 associated with the Climate segment.

#### Note 5. Intangible Assets

Indefinite-lived intangible assets are tested and reviewed annually for impairment during the fourth quarter or whenever there is a significant change in events or circumstances that indicate that the fair value of the asset may be less than the carrying amount



of the asset. All other intangible assets with finite useful lives are amortized on a straight-line basis over their estimated useful lives.

The gross amount of the Company's intangible assets and related accumulated amortization were as follows:

In millions	March 31, 2018			December 31, 2017		
	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Completed technologies/patents	\$211.3	\$(180.7)	\$30.6	\$209.4	\$(177.3)	\$32.1
Customer relationships	2,111.4	(1,091.7)	1,019.7	2,068.9	(1,056.9)	1,012.0
Other	86.6	(50.8)	35.8	93.9	(52.7)	41.2
Total finite-lived intangible assets	2,409.3	(1,323.2)	1,086.1	2,372.2	(1,286.9)	1,085.3
Trademarks (indefinite-lived)	2,670.2	—	2,670.2	2,657.6	—	2,657.6
Total	\$5,079.5	\$(1,323.2)	\$3,756.3	\$5,029.8	\$(1,286.9)	\$3,742.9

Intangible asset amortization expense was \$35.2 million and \$32.3 million for the three months ended March 31, 2018 and 2017, respectively.

#### Note 6. Debt and Credit Facilities

Short-term borrowings and current maturities of long-term debt consisted of the following:

In millions	March 31, December 31,	
	2018	2017
Debentures with put feature	\$ 343.0	\$ 343.0
6.875% Senior notes due 2018 <sup>(1)</sup>	—	749.6
Commercial Paper	247.9	—
Other current maturities of long-term debt	7.7	7.7
Short-term borrowings	6.6	6.7
Total	\$ 605.2	\$ 1,107.0

(1) During the first quarter of 2018, the Company redeemed its 6.875% senior notes due 2018.

#### Commercial Paper Program

The Company uses borrowings under its commercial paper program for general corporate purposes. The maximum aggregate amount of unsecured commercial paper notes available to be issued, on a private placement basis, under the commercial paper program is \$2.0 billion as of March 31, 2018. The Company had \$247.9 million of commercial paper outstanding as of March 31, 2018.

#### Debentures with Put Feature

At March 31, 2018 and December 31, 2017, the Company had \$343.0 million of fixed rate debentures outstanding which contain a put feature that the holders may exercise on each anniversary of the issuance date. If exercised, the Company is obligated to repay in whole or in part, at the holder's option, the outstanding principal amount of the debentures plus accrued interest. If these options are not exercised, the final contractual maturity dates would range between 2027 and 2028. Holders of these debentures had the option to exercise the put feature on \$37.2 million of the outstanding debentures in February 2018, subject to the notice requirement. No material exercises were made.

Long-term debt, excluding current maturities, consisted of the following:

In millions	March 31, December 31,	
	2018	2017
2.875% Senior notes due 2019 <sup>(1)</sup>	—	349.4
2.625% Senior notes due 2020	299.0	298.9
2.900% Senior notes due 2021	297.7	—
9.000% Debentures due 2021	124.9	124.9
4.250% Senior notes due 2023	696.7	696.5
7.200% Debentures due 2018-2025	52.3	52.3
3.550% Senior notes due 2024	495.4	495.2
6.480% Debentures due 2025	149.7	149.7
3.750% Senior notes due 2028	544.0	—
5.750% Senior notes due 2043	494.1	494.0
4.650% Senior notes due 2044	295.6	295.6
4.300% Senior notes due 2048	295.7	—
Other loans and notes	0.4	0.5
Total	\$ 3,745.5	\$ 2,957.0

(1) During the first quarter of 2018, the Company redeemed its 2.875% senior notes due 2019.

#### Issuance and Redemption of Senior Notes

In February 2018, the Company issued \$1.15 billion principal amount of senior notes in three tranches through an indirect, wholly-owned subsidiary. The tranches consist of \$300 million aggregate principal amount of 2.900% senior notes due 2021, \$550 million aggregate principal amount of 3.750% senior notes due 2028 and \$300 million aggregate principal amount of 4.300% senior notes due 2048. The notes are fully and unconditionally guaranteed by each of Ingersoll Rand plc, Ingersoll-Rand Irish Holdings Unlimited Company, Ingersoll-Rand Lux International Holding Company S.à.r.l, Ingersoll-Rand Company and Ingersoll-Rand Luxembourg Finance S.A. The Company has the option to redeem the notes in whole or in part at any time, prior to their stated maturity date at redemption prices set forth in the indenture agreement. The notes are subject to certain customary covenants, however, none of these covenants are considered restrictive to the Company's operations. In March 2018, the Company used the proceeds to fund the redemption of \$750 million aggregate principal amount of 6.875% senior notes due 2018 and \$350 million aggregate principal amount of 2.875% senior notes due 2019, with the remainder used for general corporate purposes. As a result of the early redemption, the Company recognized \$15.4 million of premium expense and \$1.2 million of unamortized costs in Interest expense.

#### Other Credit Facilities

The Company maintains two 5-year, \$1.0 billion revolving credit facilities (the Facilities) through its wholly-owned subsidiaries, Ingersoll-Rand Global Holding Company Limited and Ingersoll-Rand Luxembourg Finance S.A. (collectively, the Borrowers). Each senior unsecured credit facility provides support for the Company's commercial paper program and can be used for working capital and other general corporate purposes. Ingersoll-Rand plc, Ingersoll-Rand Irish Holdings Unlimited Company, Ingersoll-Rand Lux International Holding Company S.à.r.l. and Ingersoll-Rand Company each provide irrevocable and unconditional guarantees for these Facilities. In addition, each Borrower will guarantee the obligations under the Facilities of the other Borrower. Total commitments of \$2.0 billion were unused at March 31, 2018 and December 31, 2017. On April 17, 2018, the Company entered into a new 5-year, \$1.0 billion senior unsecured credit facility and terminated its 5-year, \$1.0 billion facility set to expire in March 2019. As a result, the current maturity dates of the Facilities are March 2021 and March 2023.

#### Fair Value of Debt

The carrying value of the Company's short-term borrowings is a reasonable estimate of fair value due to the short-term nature of the instruments. The fair value of the Company's debt instruments at March 31, 2018 and December 31, 2017 was \$4.6 billion and \$4.4 billion, respectively. The Company measures the fair value of its long-term debt instruments for disclosure purposes based upon observable market prices quoted on public exchanges for similar assets. These fair value inputs are considered Level 2 within the fair value hierarchy. The methodologies used by the Company to determine the fair value of its long-term debt instruments at March 31, 2018 are the same as those used at

December 31, 2017.

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## Note 7. Financial Instruments

In the normal course of business, the Company is exposed to certain risks arising from business operations and economic factors. These fluctuations can increase the cost of financing, investing and operating the business. The Company may use various financial instruments, including derivative instruments, to manage the risks associated with interest rate and currency rate exposures. These financial instruments are not used for trading or speculative purposes. On the date a derivative contract is entered into, the Company designates the derivative instrument as a cash flow hedge of a forecasted transaction or as an undesignated derivative. The Company formally documents its hedge relationships, including identification of the derivative instruments and the hedged items, as well as its risk management objectives and strategies for undertaking the hedge transaction. This process includes linking derivative instruments that are designated as hedges to specific assets, liabilities or forecasted transactions.

The Company assesses at inception, and at least quarterly thereafter, whether the derivatives used in cash flow hedging transactions are highly effective in offsetting the changes in the cash flows of the hedged item. To the extent the derivative is deemed to be a highly effective hedge, the fair market value changes of the instrument are recorded in Accumulated other comprehensive income (AOCI). Any ineffective portion of a derivative instrument's change in fair value is recorded in Net earnings in the period of change. If the hedging relationship ceases to be highly effective, or it becomes probable that a forecasted transaction is no longer expected to occur, the hedging relationship will be undesignated and any future gains and losses on the derivative instrument will be recorded in Net earnings.

The fair values of derivative instruments included within the Condensed Consolidated Balance Sheets were as follows:

In millions	Derivative assets		Derivative liabilities	
	March 31, 2018	December 31, 2017	March 31, 2018	December 31, 2017
Derivatives designated as hedges:				
Currency derivatives designated as hedges	\$ 1.3	\$ —	\$ 0.2	\$ 1.3
Derivatives not designated as hedges:				
Currency derivatives not designated as hedges	11.0	7.2	5.5	1.2
Total derivatives	\$ 12.3	\$ 7.2	\$ 5.7	\$ 2.5

Asset and liability derivatives included in the table above are recorded within Other current assets and Accrued expenses and other current liabilities, respectively.

### Currency Derivative Instruments

The notional amount of the Company's currency derivatives was \$0.6 billion and \$0.7 billion at March 31, 2018 and December 31, 2017, respectively. At March 31, 2018 and December 31, 2017, a net gain of \$1.1 million and \$1.2 million, net of tax, respectively, was included in AOCI related to the fair value of the Company's currency derivatives designated as accounting hedges. The amount expected to be reclassified into Net earnings over the next twelve months is a gain of \$1.1 million. The actual amounts that will be reclassified to Net earnings may vary from this amount as a result of changes in market conditions. Gains and losses associated with the Company's currency derivatives not designated as hedges are recorded in Net earnings as changes in fair value occur. At March 31, 2018, the maximum term of the Company's currency derivatives was approximately 12 months.

### Other Derivative Instruments

Prior to 2015, the Company utilized forward-starting interest rate swaps and interest rate locks to manage interest rate exposure in periods prior to the anticipated issuance of certain fixed-rate debt. These instruments were designated as cash flow hedges and had a notional amount of \$1.3 billion. Consequently, when the contracts were settled upon the issuance of the underlying debt, any realized gains or losses in the fair values of the instruments were deferred into AOCI. These deferred gains or losses are subsequently recognized in Interest expense over the term of the related notes. The net unrecognized gain in AOCI was \$7.2 million at March 31, 2018 and \$6.6 million at December 31, 2017. The net deferred gain at March 31, 2018 will continue to be amortized over the term of notes with maturities ranging from 2023 to 2044. The amount expected to be amortized over the next twelve months is a net gain of \$0.7 million. The Company has no forward-starting interest rate swaps or interest rate lock contracts outstanding at March 31, 2018 or December 31, 2017.



The following table represents the amounts associated with derivatives designated as hedges affecting Net earnings and AOCI for the three months ended March 31:

In millions	Amount of gain (loss) recognized in AOCI		Location of gain (loss) reclassified from AOCI and recognized into Net earnings	Amount of gain (loss) reclassified from AOCI and recognized into Net earnings	
	2018	2017		2018	2017
Currency derivatives designated as hedges	\$ 2.1	\$ 1.2	Cost of goods sold	\$ (0.4 )	\$ (0.3 )
Interest rate swaps & locks	—	—	Interest expense	(0.6 )	(0.1 )
Total	\$ 2.1	\$ 1.2		\$ (1.0 )	\$ (0.4 )

The following table represents the amounts associated with derivatives not designated as hedges affecting Other income/(expense), net for the three months ended March 31:

In millions	Amount of gain (loss) recognized in Net earnings	
	2018	2017
Currency derivatives not designated as hedges	\$ 9.7	\$ 20.0
Total	\$ 9.7	\$ 20.0

The gains and losses associated with the Company's undesignated currency derivatives are materially offset in Other income/(expense), net by changes in the fair value of the underlying transactions.

#### Concentration of Credit Risk

The counterparties to the Company's forward contracts consist of a number of investment grade major international financial institutions. The Company could be exposed to losses in the event of nonperformance by the counterparties. However, the credit ratings and the concentration of risk in these financial institutions are monitored on a continuous basis and present no significant credit risk to the Company.

#### Note 8. Fair Value Measurements

ASC 820, "Fair Value Measurement," (ASC 820) defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 also establishes a three-level fair value hierarchy that prioritizes information used in developing assumptions when pricing an asset or liability as follows:

- Level 1: Observable inputs such as quoted prices in active markets;
- Level 2: Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
- Level 3: Unobservable inputs where there is little or no market data, which requires the reporting entity to develop its own assumptions.

ASC 820 requires the use of observable market data, when available, in making fair value measurements. When inputs used to measure fair value fall within different levels of the hierarchy, the level within which the fair value measurement is categorized is based on the lowest level input that is significant to the fair value measurement.

The following table presents the Company's fair value hierarchy for those assets and liabilities measured at fair value on a recurring basis as of March 31, 2018:

In millions	Fair Value	Fair value measurements		
		Level 1	Level 2	Level 3
Assets:				
Derivative instruments	\$ 12.3	\$ —	\$ 12.3	\$ —
Liabilities:				



Derivative instruments \$ 5.7    \$ -5.7    \$ —

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The following table presents the Company's fair value hierarchy for those assets and liabilities measured at fair value on a recurring basis as of December 31, 2017:

In Millions	Fair Value	Fair value measurements		
		Level 1	Level 2	Level 3
		1	2	3

Assets:

Derivative instruments \$ 7.2 \$ — \$ 7.2 \$ —

Liabilities:

Derivative instruments \$ 2.5 \$ — \$ 2.5 \$ —

Derivative instruments include forward foreign currency contracts and instruments related to non-functional currency balance sheet exposures. The fair value of the derivative instruments are determined based on a pricing model that uses spot rates and forward prices from actively quoted currency markets that are readily accessible and observable. The carrying values of cash and cash equivalents, accounts receivable, and accounts payable are a reasonable estimate of their fair value due to the short-term nature of these instruments. These methodologies used by the Company to determine the fair value of its financial assets and liabilities at March 31, 2018 are the same as those used at December 31, 2017. There have been no transfers between levels of the fair value hierarchy.

Note 9. Pensions and Postretirement Benefits Other than Pensions

The Company sponsors several U.S. defined benefit and defined contribution plans covering substantially all of the Company's U.S. employees. Additionally, the Company has many non-U.S. defined benefit and defined contribution plans covering eligible non-U.S. employees. Postretirement benefits other than pensions (OPEB) provide healthcare benefits, and in some instances, life insurance benefits for certain eligible employees.

Pension Plans

The noncontributory defined benefit pension plans covering non-collectively bargained U.S. employees provide benefits on a final average pay formula while plans for most collectively bargained U.S. employees provide benefits on a flat dollar benefit formula or a percentage of pay formula. The non-U.S. pension plans generally provide benefits based on earnings and years of service. The Company also maintains additional other supplemental plans for officers and other key or highly compensated employees.

The components of the Company's net periodic pension benefit cost for the three months ended March 31 were as follows:

In millions	Three months ended	
	2018	2017
Service cost	\$ 17.9	\$ 17.8
Interest cost	27.0	27.0
Expected return on plan assets	(36.9 )	(35.2 )
Net amortization of:		
Prior service costs	1.1	1.0
Net actuarial losses	12.5	13.6
Net periodic pension benefit cost	\$ 21.6	\$ 24.2
Net curtailment and settlement (gains) losses	—	2.3
Net periodic pension benefit cost after net curtailment and settlement (gains) losses	\$ 21.6	\$ 26.5
Amounts recorded in continuing operations:		
Operating income	\$ 17.6	\$ 17.1

Other		
income/(expense), net	1.9	7.0
Amounts recorded in		
discontinued operations	2.1	2.4
Total	\$ 21.6	\$ 26.5

During the three months ended March 31, 2017, the Company recognized a curtailment loss associated with certain defined benefit plan freezes that is effective on January 1, 2022.

The Company made contributions to its defined benefit pension plans of \$10.9 million and \$5.6 million during the three months ended March 31, 2018 and 2017, respectively. The Company currently projects that it will contribute approximately \$80 million to its plans worldwide in 2018.

#### Postretirement Benefits Other Than Pensions

The Company sponsors several postretirement plans that provide for healthcare benefits, and in some instances, life insurance benefits that cover certain eligible employees. These plans are unfunded and have no plan assets, but are instead funded by the Company on a pay-as-you-go basis in the form of direct benefit payments. Generally, postretirement health benefits are contributory with contributions adjusted annually. Life insurance plans for retirees are primarily noncontributory.

The components of net periodic postretirement benefit cost for the three months ended March 31 were as follows:

In millions	Three months ended	
	2018	2017
Service cost	\$0.7	\$0.8
Interest cost	3.8	4.3
Net amortization of:		
Prior service gains	(1.0 )	(2.2 )
Net actuarial losses	—	—
Net periodic postretirement benefit cost	\$3.5	\$2.9
Amounts recorded in continuing operations:		
Operating income	\$0.7	\$0.8
Other income/(expense), net	2.0	1.2
Amounts recorded in discontinued operations	0.8	0.9
Total	\$3.5	\$2.9

#### Note 10. Equity

The authorized share capital of Ingersoll-Rand plc is 1,185,040,000 shares, consisting of (1) 1,175,000,000 ordinary shares, par value \$1.00 per share, (2) 40,000 ordinary shares, par value EUR 1.00 and (3) 10,000,000 preference shares, par value \$0.001 per share. There were no Euro-denominated ordinary shares or preference shares outstanding at March 31, 2018 or December 31, 2017.

Changes in ordinary shares and treasury shares for the three months ended March 31, 2018 are as follows:

In millions	Ordinary shares issued	Ordinary shares held in treasury
December 31, 2017	274.0	24.5
Shares issued under incentive plans, net	1.3	—
Repurchase of ordinary shares	(2.8 )	—
March 31, 2018	272.5	24.5

Share repurchases are made from time to time in accordance with the Company's capital allocation strategy, subject to market conditions and regulatory requirements. In April 2017, the Company completed a \$1.5 billion share repurchase program that began in April 2014. Shares repurchased prior to October 2014 were canceled upon repurchase and accounted for as a reduction of Ordinary shares and Capital in excess of par value, or Retained earnings to the extent Capital in excess of par value was exhausted. Beginning in October 2014, repurchased shares were held in treasury, recognized at cost and presented separately on the balance sheet as a reduction to Equity. In February 2017, the Company's Board of Directors authorized the repurchase of up to \$1.5 billion of its ordinary shares upon completion of the prior authorized program. Repurchases under this program, which began in May 2017, totaled approximately \$600 million at December 31, 2017 and are held in treasury. During the three months ended March 31, 2018, the Company repurchased and canceled approximately \$250 million of its ordinary shares.



The components of Equity for the three months ended March 31, 2018 were as follows:

In millions	Shareholders' equity	Noncontrolling interests	Total equity
Balance at December 31, 2017	\$ 7,140.3	\$ 66.6	\$7,206.9
Net earnings	120.4	3.7	124.1
Currency translation	143.9	0.4	144.3
Derivatives qualifying as cash flow hedges, net of tax	2.8	—	2.8
Pension and OPEB adjustments, net of tax	5.4	—	5.4
Total comprehensive income (loss)	272.5	4.1	276.6
Share-based compensation	30.0	—	30.0
Adoption of ASC 606	2.4	—	2.4
Adoption of ASU 2016-16	(9.1	) —	(9.1 )
Dividends declared to noncontrolling interests	—	(11.0	) (11.0 )
Dividends declared to ordinary shareholders	(112.0	) —	(112.0 )
Shares issued under incentive plans, net of tax benefit	6.6	—	6.6
Repurchase of ordinary shares	(250.0	) —	(250.0 )
Balance at March 31, 2018	\$ 7,080.7	\$ 59.7	\$7,140.4

The components of Equity for the three months ended March 31, 2017 were as follows:

In millions	Shareholders' equity	Noncontrolling interests	Total equity
Balance at December 31, 2016	\$ 6,643.8	\$ 74.5	\$6,718.3
Net earnings	117.1	4.0	121.1
Currency translation	112.4	(1.5	) 110.9
Derivatives qualifying as cash flow hedges, net of tax	1.6	—	1.6
Pension and OPEB adjustments, net of tax	6.6	—	6.6
Total comprehensive income (loss)	237.7	2.5	240.2
Share-based compensation	23.3	—	23.3
Adoption of ASU 2016-09 <sup>(1)</sup>	15.1	—	15.1
Dividends declared to noncontrolling interests	—	(6.9	) (6.9 )
Dividends declared to ordinary shareholders	(103.0	) —	(103.0 )
Shares issued under incentive plans, net of tax benefit	16.8	—	16.8
Repurchase of ordinary shares	(250.1	) —	(250.1 )
Other	0.2	—	0.2
Balance at March 31, 2017	\$ 6,583.8	\$ 70.1	\$6,653.9

(1) The Company adopted ASU No. 2016-09, "Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting" (ASU 2016-09) on January 1, 2017.

Accumulated Other Comprehensive Income (Loss)

The changes in Accumulated other comprehensive income (loss) for the three months ended March 31, 2018 are as follows:

In millions	Derivative Instruments	Pension and OPEB	Foreign Currency Translation	Total
Balance at December 31, 2017	\$ 4.7	\$(494.3)	\$ (289.2 )	\$(778.8)
Other comprehensive income (loss) before reclassifications	2.1	(4.6 )	143.9	141.4
Amounts reclassified from AOCI	1.0	12.6	—	13.6
Provision for income taxes	(0.3 )	(2.6 )	—	(2.9 )
Net current period other comprehensive income (loss)	\$ 2.8	\$5.4	\$ 143.9	\$152.1
Balance at March 31, 2018	\$ 7.5	\$(488.9)	\$ (145.3 )	\$(626.7)

The changes in Accumulated other comprehensive income (loss) for the three months ended March 31, 2017 are as follows:

In millions	Derivative Instruments	Pension and OPEB	Foreign Currency Translation	Total
Balance at December 31, 2016	\$ 2.9	\$(554.4)	\$ (739.0 )	\$(1,290.5)
Other comprehensive income (loss) before reclassifications	1.2	(0.8 )	112.4	112.8
Amounts reclassified from AOCI	0.4	12.4	—	12.8
Provision for income taxes	—	(5.0 )	—	(5.0 )
Net current period other comprehensive income (loss)	\$ 1.6	\$6.6	\$ 112.4	\$120.6
Balance at March 31, 2017	\$ 4.5	\$(547.8)	\$ (626.6 )	\$(1,169.9)

The reclassifications out of Accumulated other comprehensive income (loss) for the three months ended March 31 were as follows:

In millions	Three months ended	
	2018	2017
<b>Derivative Instruments</b>		
Reclassifications of deferred (gains) losses <sup>(1)</sup>	\$1.0	\$0.4
Provision for (benefit from) income taxes	0.2	(0.1 )
Reclassifications, net of taxes	\$1.2	\$0.3
<b>Pension and Postretirement benefits</b>		
Amortization of service costs <sup>(2)</sup>	\$0.1	\$(1.2)
Amortization of actuarial losses <sup>(2)</sup>	12.5	13.6
Provision for (benefit from) income taxes	(2.6 )	(5.0 )
Reclassifications, net of taxes	\$10.0	\$7.4
Total reclassifications, net of taxes	\$11.2	\$7.7

(1) Reclassifications of interest rate swaps and locks are reflected within Interest expense; reclassifications of currency derivatives designated as hedges are reflected in Cost of goods sold.

(2) Reclassifications of the service cost component of pension and postretirement benefit costs are reflected within Operating income; the remaining components are included within Other income/(expense), net.

#### Note 11. Revenue

The Company recognizes revenue when control of a good or service promised in a contract (i.e., performance obligation) is transferred to a customer. Control is obtained when a customer has the ability to direct the use of and obtain substantially all of the remaining benefits from that good or service. A majority of the Company's revenues are recognized at a point-in-time as control is transferred at a distinct point in time per the terms of a contract. However, a portion of the Company's revenues are recognized over time as the customer simultaneously receives control as the Company performs work under a contract.

##### Performance Obligations

A performance obligation is a distinct good, service or a bundle of goods and services promised in a contract. The Company identifies performance obligations at the inception of a contract and allocates the transaction price to individual performance obligations to faithfully depict the Company's performance in transferring control of the promised goods or services to the customer.

The following are the primary performance obligations identified by the Company:

**Equipment and parts.** The Company principally generates revenue from the sale of equipment and parts to customers and recognizes revenue at a point in time when control transfers to the customer. Transfer of control is generally determined based on the shipping terms of the contract. However, certain transactions within the Industrial segment include contracts to design, deliver and build highly engineered or customized equipment which have no alternative use for the Company in the event the customer cancels the contract. In addition, the Company has the right to payment for performance completed to date. As a result, revenues related to these contracts are recognized over time with progress towards completion measured using an input method as the basis to recognize revenue and an estimated profit. To-date efforts for work performed corresponds with and faithfully depicts transfer of control to the customer.

**Contracting and Installation.** The Company enters into various construction-type contracts to design, deliver and build integrated solutions to meet customer specifications. These transactions, primarily included within the Climate segment, provide services that range from the development and installation new HVAC systems to the design and integration of critical building systems to optimize energy efficiency and overall performance. These contracts have a typical term of less than one year and are considered a single performance obligation as multiple combined goods and services promised in the contract represent a single output delivered to the customer. Revenues associated with contracting and installation contracts are recognized over time with progress towards completion measured using an input method as the basis to recognize revenue and an estimated profit. To-date efforts for work performed corresponds with and faithfully depicts transfer of control to the customer.

**Services and Maintenance.** The Company provides various levels of preventative and/or repair and maintenance type service agreements for its customers. The typical length of a contract is 12 months but can be as long as 36 months. Revenue associated with these performance obligations are primarily recognized over time on a straight-line basis over the life of the contract as the customer simultaneously receives and consumes the benefit provided by the Company. However, if historical evidence indicates that the cost of providing these services on a straight-line basis is not appropriate, revenue is recognized over the contract period in proportion to the costs expected to be incurred while performing the service. Certain repair services do not meet the definition of over time revenue recognition as the Company does not transfer control to the customer until the service is completed. As a result, revenue related to these services is recognized at a point in time.

**Extended warranties.** The Company enters into various warranty contracts with customers related to its products. A standard warranty generally warrants that a product is free from defects in workmanship and materials under normal use and conditions for a certain period of time. The Company's standard warranty is not considered a distinct performance obligation as it does not provide services to customers beyond assurance that the covered product is free of initial defects. An extended warranty provides a customer with additional time that the Company is liable for covered incidents associated with its products. Extended warranties are purchased separately and can last up to five years. As a result, they are considered separate performance obligations for the Company. Revenue associated with these performance obligations are primarily recognized over time on a straight-line basis over the life of the contract as the customer simultaneously receives and consumes the benefit provided by the Company. However, if historical evidence indicates that the cost of providing these services on a straight-line basis is not appropriate, revenue is recognized over the contract period in proportion to the costs expected to be incurred while performing the service.



Refer to Note 19, "Commitments and Contingencies," for more information related to product warranties. The transaction price allocated to performance obligations reflects the Company's expectations about the consideration it will be entitled to receive from a customer. The Company's contracts with customers, dealers and distributors include several forms of sales incentive programs (variable consideration) which are estimated and included in the transaction price. They include, but are not limited to, discounts (i.e. net 30 type), coupons, and rebates where the customer does not have to provide any additional requirements to receive the discount. The Company records an accrual (contra receivable) and a sales deduction for its best estimate determined using the expected value method. In addition, sales returns and customer disputes involving a question of quantity or price are also accounted for as variable consideration. All other incentives or incentive programs where the customer is required to reach a certain sales level, remain a customer for a certain period of time, provide a rebate form or is subject to additional

requirements are accounted for as a reduction of revenue and establishment of a liability for its best estimate determined using the expected value method. The Company considers historical data in determining its best estimates of variable consideration. These estimates are reviewed regularly for appropriateness, considering also whether the estimates should be constrained in order to avoid a significant reversal of revenue recognition in a future period. If updated information or actual amounts are different from previous estimates of variable consideration, the revisions are included in the results for the period in which they become known through a cumulative effect adjustment to revenue. In addition, the Company's contracts with customers generally do not include significant financing components or noncash consideration.

The Company enters into sales arrangements that contain multiple goods and services, such as equipment, installation and extended warranties. For these arrangements, each good or service is evaluated to determine whether it represents a distinct performance obligation. The total transaction price is then allocated to the distinct performance obligations based on their relative standalone selling price at the inception of the arrangement. If available, the Company utilizes observable prices for goods or services sold separately to similar customers in similar circumstances to determine its relative standalone selling price. Otherwise, list prices are used if they are determined to be representative of standalone selling prices. If neither of these items are available at contract inception, judgment may be required and the Company will estimate standalone selling price based on its best estimate. The Company recognizes revenue for delivered goods or services when the delivered good or service is distinct, control of the good or service has transferred to the customer, and only customary refund or return rights related to the goods or services exist. The Company excludes from revenues taxes it collects from a customer that are assessed by a government authority. Excluding noncurrent contract liabilities, unsatisfied (or partially unsatisfied) performance obligations as of the end of the reporting period are expected to be recognized as revenue within the next 12 months.

#### Disaggregated Revenue

A summary of Net revenues by destination for the three months ended March 31, 2018 is as follows:

In millions	2018
Climate	
United States	\$1,711.8
Non-U.S.	898.0
Total Climate	\$2,609.8
Industrial	
United States	\$414.6
Non-U.S.	360.1
Total Industrial	\$774.7

A summary of Net revenues by major type of good or service for the three months ended March 31, 2018 is as follows:

In millions	2018
Climate	
Equipment	\$1,771.5
Services and parts	838.3
Total Climate	\$2,609.8
Industrial	
Equipment	\$470.6
Services and parts	304.1
Total Industrial	\$774.7

Revenue from goods and services transferred to customers at a point in time accounted for approximately 85% of the Company's revenue for the three months ended March 31, 2018.

## Contract Balances

The opening and closing balances of contract assets and contract liabilities arising from contracts with customers for the period ended March 31, 2018 and December 31, 2017 were as follows:

In millions	March 31, 2018	December 31, 2017
Contract assets	\$188.0	\$166.0
Contract liabilities	831.4	814.2

The timing of revenue recognition, billings and cash collections results in accounts receivable, contract assets, and customer advances and deposits (contract liabilities) on the Condensed Consolidated Balance Sheet. In general, the Company receives payments from customers based on a billing schedule established in its contracts. Contract assets relate to the conditional right to consideration for any completed performance under the contract when costs are incurred in excess of billings under the percentage-of-completion methodology. Accounts receivable are recorded when the right to consideration becomes unconditional. Contract liabilities relate to payments received in advance of performance under the contract or when the Company has a right to consideration that is unconditional before it transfers a good or service to the customer. Contract liabilities are recognized as revenue as (or when) the Company performs under the contract. During the three-month period ended March 31, 2018, changes in contract asset and liability balances were not materially impacted by any other factors.

Approximately 75% of the contract liability balance at the beginning of the period is expected to be recognized as revenue during 2018, of which 30% was recognized during the three months ended March 31, 2018. The remaining 25% of the contract liability balance at the beginning of the period is included within Other noncurrent liabilities and expected to be recognized as revenue during 2019 or thereafter.

## ASC 606 adoption impact

On January 1, 2018, the Company adopted ASC 606 using the modified retrospective approach with a cumulative effect adjustment to increase Retained earnings by \$2.4 million. As a result, the Company applied ASC 606 only to contracts that were not completed as of January 1, 2018. Comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods presented. The Company elected to reflect the aggregate effect of all contract modifications that occurred before the beginning of the earliest period presented in determining the transaction price, identifying the satisfied and unsatisfied performance obligations and allocating the transaction price to the satisfied and unsatisfied performance obligations for the modified contract at transition. The effects of this relief are immaterial.

The following table summarizes the impact of adopting ASC 606 on the Company's Condensed Consolidated Statements of Comprehensive Income:

In millions	Three months ended March 31, 2018		
	As Reported	Balances Without Adoption of ASC 606	Effect of Change Higher/(Lower)
Net revenues	\$3,384.5	\$3,381.2	\$ 3.3
Cost of goods sold	(2,420.2 )	(2,417.0 )	3.2
Selling and administrative expenses	(720.9 )	(720.9 )	—
Operating income	243.4	243.3	0.1
Interest expense	(72.9 )	(72.9 )	—
Other income/(expense), net	(4.0 )	(4.0 )	—
Earnings before income taxes	166.5	166.4	0.1
Provision for income taxes	(33.0 )	(33.0 )	—
Earnings from continuing operations	\$133.5	\$133.4	\$ 0.1



The following table summarizes the impact of adopting ASC 606 on the Company's Balance Sheet:

In millions	March 31, 2018		
	As Reported	Balances Without Adoption of ASC 606	Effect of Change Higher/(Lower)
<b>Assets</b>			
Accounts and notes receivable, net	\$2,516.0	\$2,517.5	\$ (1.5 )
Inventories, net	1,778.8	1,782.0	(3.2 )
Other current assets	601.6	591.9	9.7
Other noncurrent assets	807.1	807.1	—
<b>Liabilities</b>			
Accrued expenses and other current liabilities	\$1,685.0	\$1,680.1	\$ 4.9
Deferred and noncurrent income taxes	768.7	768.7	—
Other noncurrent liabilities	1,125.3	1,125.3	—
<b>Equity</b>			
Retained earnings	\$8,904.4	\$8,904.3	\$ 0.1

Under ASC 606, the majority of the Company's revenue continues to be recognized on a similar basis as previous accounting standards. However, certain highly engineered products sold to customers within the Industrial segment for which revenue was previously recognized at a point in time currently meet the criteria of a performance obligation satisfied over time. These contracts consist of equipment that is highly engineered or customized to meet the customer's requirements. As a result, the Company will have no alternative use for the equipment in the event the customer cancels the contract as well as the right to payment for performance completed to date. In general, this change results in accelerated recognition of revenue and increases in the balance of contract assets compared to the previous revenue recognition standard.

#### Note 12. Share-Based Compensation

The Company accounts for stock-based compensation plans in accordance with ASC 718, "Compensation - Stock Compensation" (ASC 718), which requires a fair-value based method for measuring the value of stock-based compensation. Fair value is measured once at the date of grant and is not adjusted for subsequent changes. The Company's share-based compensation plans include programs for stock options, restricted stock units (RSUs), performance share units (PSUs) and deferred compensation.

#### Compensation Expense

Share-based compensation expense is related to continuing operations and is included in Selling and administrative expenses. The expense recognized for three months ended March 31 was as follows:

In millions	Three months ended	
	2018	2017
Stock options	\$12.3	\$8.7
RSUs	13.3	10.3
Performance shares	4.4	4.4
Other	0.8	1.4
Pre-tax expense	30.8	24.8
Tax benefit	(7.5 )	(9.5 )
After-tax expense	\$23.3	\$15.3

## Stock Options / RSUs

Eligible participants may receive (i) stock options, (ii) RSUs or (iii) a combination of both stock options and RSUs. The fair value of each of the Company's stock option and RSU awards is expensed on a straight-line basis over the required service period, which is generally the 3-year vesting period. However, for stock options and RSUs granted to retirement eligible employees, the Company recognizes an expense for the entire fair value at the grant date. Grants issued during the three months ended March 31 were as follows:

	2018		2017	
	Number granted	Weighted-average fair value per award	Number granted	Weighted-average fair value per award
Stock options	1,414,411	\$ 15.57	1,498,127	\$ 13.45
RSUs	279,901	\$ 89.97	310,868	\$ 79.76

The average fair value of the stock options granted is determined using the Black-Scholes option-pricing model. The following assumptions were used during the three months ended March 31:

	2018		2017	
Dividend yield	2.00 %	2.00 %	2.00 %	2.00 %
Volatility	21.65 %	22.46 %	21.65 %	22.46 %
Risk-free rate of return	2.48 %	1.80 %	2.48 %	1.80 %
Expected life in years	4.8	4.8	4.8	4.8

A description of the significant assumptions used to estimate the fair value of the stock option awards is as follows:

• **Volatility** - The expected volatility is based on a weighted average of the Company's implied volatility and the most recent historical volatility of the Company's stock commensurate with the expected life.

• **Risk-free rate of return** - The Company applies a yield curve of continuous risk-free rates based upon the published U.S. Treasury spot rates on the grant date.

• **Expected life** - The expected life of the Company's stock option awards represents the weighted-average of the actual period since the grant date for all exercised or canceled options and an expected period for all outstanding options.

• **Dividend yield** - The Company determines the dividend yield based upon the expected quarterly dividend payments as of the grant date and the current fair market value of the Company's stock.

**Forfeiture Rate** - The Company analyzes historical data of forfeited options to develop a reasonable expectation of the number of options to forfeit prior to vesting per year. This expected forfeiture rate is applied to the Company's ongoing compensation expense; however, all expense is adjusted to reflect actual vestings and forfeitures.

## Performance Shares

The Company has a Performance Share Program (PSP) for key employees. The program provides awards in the form of PSUs based on performance against pre-established objectives. The annual target award level is expressed as a number of the Company's ordinary shares based on the fair market value of the Company's stock on the date of grant. All PSUs are settled in the form of ordinary shares. During the three months ended March 31, 2018, the Company granted PSUs with a maximum award level of approximately 0.4 million shares with a weighted-average fair value per award of \$106.09. PSUs granted during the three months ended March 31, 2017 approximated 0.4 million shares with a weighted-average fair value per award of \$93.15.

Beginning with the 2018 grant year, PSU awards are earned based 50% upon a performance condition, measured by relative Cash Flow Return on Invested Capital (CROIC) growth to the industrial group of companies in the S&P 500 Index over a 3-year performance period, and 50% upon a market condition, measured by the Company's relative total shareholder return (TSR) as compared to the TSR of the industrial group of companies in the S&P 500 Index over a 3-year performance period. The fair value of the market condition is estimated using a Monte Carlo Simulation approach in a risk-neutral framework based upon historical volatility, risk-free rates and correlation matrix. Awards granted prior to 2018 are earned based 50% upon a performance condition, measured by relative EPS growth to the industrial group of companies in the S&P 500 Index over a 3-year performance period, and 50% upon a market condition, measured by the Company's relative TSR as compared to the TSR of the industrial group of companies in the S&P 500 Index over the 3-year performance period.



### Deferred Compensation

The Company allows key employees to defer a portion of their eligible compensation into a number of investment choices, including its ordinary share equivalents. Any amounts invested in ordinary share equivalents will be settled in ordinary shares of the Company at the time of distribution.

### Note 13. Restructuring Activities

The Company incurs ongoing costs associated with restructuring initiatives intended to result in improved operating performance, profitability and working capital levels. Actions associated with these initiatives may include workforce reduction, improving manufacturing productivity, realignment of management structures and rationalizing certain assets. The following table details restructuring charges recorded during the three months ended March 31:

In millions	Three months ended	
	2018	2017
Climate	\$3.9	\$28.0
Industrial	35.7	4.7
Corporate and Other	4.8	—
Total	\$44.4	\$32.7

Cost of goods sold	\$36.5	\$30.3
Selling and administrative expenses	7.9	2.4
Total	\$44.4	\$32.7

The changes in the restructuring reserve for the three months ended March 31, 2018 were as follows:

In millions	Climate	Industrial	Corporate and Other	Total
December 31, 2017	\$ 7.4	\$ 6.1	\$ 2.5	\$16.0
Additions, net of reversals	3.9	35.7	4.8	44.4
Cash paid/other	(4.4 )	(1.5 )	(2.7 )	(8.6 )
March 31, 2018	\$ 6.9	\$ 40.3	\$ 4.6	\$51.8

Ongoing restructuring actions primarily include workforce reductions as well as the closure and consolidation of manufacturing facilities in an effort to improve the Company's cost structure. During the first quarter of 2018, the Company announced plans to close a Non-U.S. manufacturing facility within its Industrial segment and relocate production to other U.S. and Non-U.S. facilities. As of March 31, 2018, the Company had \$51.8 million accrued for costs associated with its ongoing restructuring actions, of which a majority is expected to be paid within one year. These actions primarily relate to workforce reduction benefits. In addition, the Company incurred \$0.3 million of non-qualified restructuring charges during three months ended March 31, 2018, which represent costs that are directly attributable to restructuring activities, but do not fall into the severance, exit or disposal category. These non-qualified restructuring charges were incurred to improve the Company's cost structure.

### Note 14. Other Income/(Expense), Net

The components of Other income/(expense), net for the three months ended March 31 are as follows:

In millions	Three months ended	
	2018	2017
Interest income	\$3.6	\$3.1
Exchange gain (loss)	(7.3 )	1.9
Other components of net periodic benefit cost	(3.9 )	(8.2 )
Other activity, net	3.6	(1.5 )
Other income/(expense), net	\$(4.0)	\$(4.7)



Other income /(expense), net includes the results from activities other than normal business operations such as interest income and foreign currency gains and losses on transactions that are denominated in a currency other than an entity's functional currency. In addition, the Company includes the components of net periodic benefit cost for pension and post retirement obligations other than the service cost component. Other activity, net includes costs associated with Trane U.S. Inc. for the settlement and defense of asbestos-related claims, insurance settlements on asbestos-related matters and the revaluation of asbestos recoveries. Refer to Note 19, "Commitments and Contingencies," for more information regarding asbestos-related matters.

#### Note 15. Income Taxes

In December 2017, the U.S. enacted the Tax Cuts and Jobs Act (the "Act") which makes widespread changes to the Internal Revenue Code. The Act, among other things, reduced the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a transition tax on earnings of certain foreign subsidiaries that were previously not subject to U.S. tax and creates new income taxes on certain foreign sourced earnings.

The SEC issued Staff Accounting Bulletin No. 118 (SAB 118) which provides guidance on accounting for the tax effects of the Act and allows for adjustments to provisional amounts during a measurement period of up to one year. In accordance with SAB 118, the Company has made reasonable estimates related to (1) the remeasurement of U.S. deferred tax balances for the reduction in the tax rate, (2) the liability for the transition tax and (3) the taxes accrued relating to the change in permanent reinvestment assertion for unremitted earnings of certain foreign subsidiaries. As a result, the Company recognized a net provisional income tax benefit of \$21.0 million associated with these items in 2017.

The components of the provisional amounts recognized as part of the Act are as follows:

In millions	2018
Remeasurement of deferred tax balances	\$(300.6)
Transition tax	160.7
Change in permanent reinvestment assertion	118.9
Income tax benefit, net	\$(21.0 )

The Company is continuing to evaluate how the provisions of the Act will be accounted for under ASC 740, "Income Taxes" (ASC 740). The analysis is provisional and is subject to change due to the additional time required to accurately calculate and review the complex tax law. The Company will continue to assess any regulatory guidance that is issued which could have an impact on the provisional estimates. The Company continues to gather information and is performing additional analysis on these estimates, including, but not limited to, the amount of earnings and profits subject to the transition tax, the calculation of foreign tax credits, the local tax treatment of future distributions of unremitted earnings and in regard to the remeasurement of U.S. deferred taxes, the filing of its 2017 federal and state income tax returns. Measurement period adjustments will be reported as a component of Provision for income taxes in the reporting period the amounts are determined. The final accounting will be completed no later than one year from the enactment of the Act. For the quarter ended March 31, 2018, the Company has not made any adjustments to the provisional amounts recorded as of December 31, 2017.

The Company accounts for its Provision for income taxes in accordance with ASC 740, which requires an estimate of the annual effective income tax rate for the full year to be applied to the respective interim period, taking into account year-to-date amounts and projected results for the full year. For the three months ended March 31, 2018 and March 31, 2017, the Company's effective income tax rate was 19.8% and 18.4%, respectively. The effective income tax rate for the three months ended March 31, 2018 was lower than the U.S. statutory rate of 21% primarily due to excess tax benefits from employee share-based payments and earnings in non-U.S. jurisdictions, which in aggregate have a lower effective tax rate partially offset by U.S. state and local income taxes. The effective tax rate for the three months ended March 31, 2017 was lower than the U.S. statutory rate of 35% primarily due to excess tax benefits from employee share-based payments and earnings in non-U.S. jurisdictions, which in aggregate have a lower effective tax rate.

Total unrecognized tax benefits as of March 31, 2018 and December 31, 2017 were \$124.4 million and \$120.5 million, respectively. Although management believes its tax positions and related provisions reflected in the Condensed Consolidated Financial Statements are fully supportable, it recognizes that these tax positions and related provisions may be challenged by various tax authorities. These tax positions and related provisions are reviewed on an

ongoing basis and are adjusted as additional facts and information become available, including progress on tax audits, changes in interpretations of tax laws, developments in case law and closing of statute of limitations. To the extent that the ultimate results differ from the original or adjusted estimates of the Company, the effect will be recorded in Provision for income taxes.

The Provision for income taxes involves a significant amount of management judgment regarding interpretation of relevant facts and laws in the jurisdictions in which the Company operates. Future changes in applicable laws, projected levels of taxable income and tax planning could change the effective tax rate and tax balances recorded by the Company. In addition, tax authorities periodically review income tax returns filed by the Company and can raise issues regarding its filing positions, timing and amount of income or deductions, and the allocation of income among the jurisdictions in which the Company operates. A significant period of time may elapse between the filing of an income tax return and the ultimate resolution of an issue raised by a revenue authority with respect to that return. In the normal course of business the Company is subject to examination by taxing authorities throughout the world, including such major jurisdictions as Brazil, Canada, China, France, Germany, Ireland, Italy, Mexico, Spain, the Netherlands, the United Kingdom and the United States. These examinations on their own, or any subsequent litigation related to the examinations, may result in additional taxes or penalties against the Company. If the ultimate result of these audits differ from original or adjusted estimates, they could have a material impact on the Company's tax provision. In general, the examination of the Company's material tax returns is complete or effectively settled for the years prior to 2008, with certain matters prior to 2008 being resolved through appeals and litigation and also unilateral procedures as provided for under double tax treaties.

#### Note 16. Acquisitions and Divestitures

##### Acquisitions

During the three months ended March 31, 2018, the Company acquired several businesses including ICS Group Holdings Limited. The business, reported within the Climate segment, specializes in the temporary rental of energy efficient chillers for commercial and industrial buildings across Europe. In addition, the Company continues to acquire independent dealers to expand its distribution networks. The aggregate cash paid, net of cash acquired, totaled \$201.6 million and was primarily for the acquisition of ICS Group Holdings Limited. Funding was through cash on hand. These acquisitions were recorded using the acquisition method of accounting in accordance with ASC 805 "Business Combinations." As a result, the aggregate price has been allocated to assets acquired and liabilities assumed based on the estimate of fair market value of such assets and liabilities at the date of acquisition.

The preliminary allocation of the aggregate purchase price is as follows:

In millions	Total
Other current assets	\$22.2
Intangibles	41.8
Goodwill	122.2
Other noncurrent assets	44.9
Accounts payable, accrued expenses and other liabilities	(29.5 )
Total purchase price, net of cash acquired	\$201.6

Intangible assets associated with these acquisitions primarily relate to technology, trademarks and/or customer relationships and determined using an income approach methodology. Any excess of the purchase price is recognized as goodwill. For certain acquisitions, the Company is still in the process of allocating the purchase price and valuing the acquired assets and liabilities assumed.

On January 17, 2018, the Company entered into an agreement with Mitsubishi Electric Corporation (Mitsubishi) to establish a joint venture, pending regulatory review and approval, and customary closing conditions. The joint venture will focus on marketing, selling and supporting variable refrigerant flow (VRF) and ductless heating and air conditioning systems through Trane, American Standard and Mitsubishi channels in the U.S. and select Latin American countries. The Company and Mitsubishi will have equal ownership in the joint venture. It is expected to be operational in the second quarter of 2018.

##### Divestitures

The Company has retained costs from previously sold businesses that mainly include expenses related to postretirement benefits, product liability and legal costs (mostly asbestos related). The components of Discontinued operations, net of tax for the three months ended March 31 were as follows:



In millions	Three months ended	
	2018	2017
Pre-tax earnings (loss) from discontinued operations	\$(12.1)	\$(9.1)
Tax benefit (expense)	2.7	2.6
Discontinued operations, net of tax	\$(9.4)	\$(6.5)

Pre-tax earnings (loss) from discontinued operations includes costs associated with Ingersoll Rand Company for the settlement and defense of asbestos-related claims, insurance settlements on asbestos-related matters and the revaluation of its liability for potential future claims. Refer to Note 19, "Commitments and Contingencies," for more information related to asbestos.

#### Note 17. Earnings Per Share (EPS)

Basic EPS is calculated by dividing Net earnings attributable to Ingersoll-Rand plc by the weighted-average number of ordinary shares outstanding for the applicable period. Diluted EPS is calculated after adjusting the denominator of the basic EPS calculation for the effect of all potentially dilutive ordinary shares, which in the Company's case, includes shares issuable under share-based compensation plans. The following table summarizes the weighted-average number of ordinary shares outstanding for basic and diluted earnings per share calculations for three months ended March 31:

In millions	Three months ended	
	2018	2017
Weighted-average number of basic shares	250.4	259.4
Shares issuable under incentive stock plans	2.6	3.2
Weighted-average number of diluted shares	253.0	262.6
Anti-dilutive shares	1.7	1.6

#### Note 18. Business Segment Information

The accounting policies of the operating segments are the same as those described in the summary of significant accounting policies except that the operating segments' results are prepared on a management basis that is consistent with the manner in which the Company prepares financial information for internal review and decision making. The Company largely evaluates performance based on Segment operating income and Segment operating margins. Intercompany sales between segments are considered immaterial.

The Company's Climate segment delivers energy-efficient products and innovative energy services. It includes Trane® and American Standard® Heating & Air Conditioning which provide heating, ventilation and air conditioning (HVAC) systems, and commercial and residential building services, parts, support and controls; energy services and building automation through Trane Building Advantage and Nexia; and Thermo King® transport temperature control solutions.

The Company's Industrial segment delivers products and services that enhance energy efficiency, productivity and operations. It includes compressed air and gas systems and services, power tools, material handling systems, ARO® fluid management equipment, as well as Club Car® golf, utility and consumer low-speed vehicles.

Segment operating income is the measure of profit and loss that the Company's chief operating decision maker uses to evaluate the financial performance of the business and as the basis for performance reviews, compensation and resource allocation. For these reasons, the Company believes that Segment operating income represents the most relevant measure of segment profit and loss.

A summary of operations by reportable segment for the three months ended March 31 was as follows:

In millions	Three months ended	
	2018	2017
Net revenues		
Climate	\$2,609.8	\$2,324.1
Industrial	774.7	676.5
Total	\$3,384.5	\$3,000.6
Segment operating income		
Climate	\$260.4	\$217.3
Industrial	59.9	65.8
Unallocated corporate expense	(76.9 )	(68.1 )
Operating income	\$243.4	\$215.0

#### Note 19. Commitments and Contingencies

The Company is involved in various litigations, claims and administrative proceedings, including those related to environmental, asbestos, and product liability matters. In accordance with ASC 450, "Contingencies," the Company records accruals for loss contingencies when it is both probable that a liability will be incurred and the amount of the loss can be reasonably estimated. Amounts recorded for identified contingent liabilities are estimates, which are reviewed periodically and adjusted to reflect additional information when it becomes available. Subject to the uncertainties inherent in estimating future costs for contingent liabilities, except as expressly set forth in this note, management believes that any liability which may result from these legal matters would not have a material adverse effect on the financial condition, results of operations, liquidity or cash flows of the Company.

#### Environmental Matters

The Company continues to be dedicated to environmental and sustainability programs to minimize the use of natural resources, and reduce the utilization and generation of hazardous materials from our manufacturing processes and to remediate identified environmental concerns. As to the latter, the Company is currently engaged in site investigations and remediation activities to address environmental cleanup from past operations at current and former manufacturing facilities.

The Company is sometimes a party to environmental lawsuits and claims and has received notices of potential violations of environmental laws and regulations from the Environmental Protection Agency and similar state authorities. It has also been identified as a potentially responsible party (PRP) for cleanup costs associated with off-site waste disposal at federal Superfund and state remediation sites. For all such sites, there are other PRPs and, in most instances, the Company's involvement is minimal.

In estimating its liability, the Company has assumed it will not bear the entire cost of remediation of any site to the exclusion of other PRPs who may be jointly and severally liable. The ability of other PRPs to participate has been taken into account, based on the Company's understanding of the parties' financial condition and probable contributions on a per site basis. Additional lawsuits and claims involving environmental matters are likely to arise from time to time in the future.

Reserves for environmental matters are classified as Accrued expenses and other current liabilities or Other noncurrent liabilities based on their expected term. As of March 31, 2018 and December 31, 2017, the Company has recorded reserves for environmental matters of \$43.1 million and \$41.9 million, respectively. Of these amounts, \$37.2 million and \$36.8 million, respectively, relate to remediation of sites previously disposed of by the Company.

#### Asbestos-Related Matters

Certain wholly-owned subsidiaries and former companies of ours are named as defendants in asbestos-related lawsuits in state and federal courts. In virtually all of the suits, a large number of other companies have also been named as defendants. The vast majority of those claims have been filed against either Ingersoll-Rand Company or Trane U.S. Inc. (Trane) and generally allege injury caused by exposure to asbestos contained in certain historical products sold by Ingersoll-Rand Company or Trane, primarily pumps, boilers and railroad brake shoes. None of our existing or previously-owned businesses were a producer or manufacturer of asbestos.

The Company engages an outside expert to assist in calculating an estimate of the Company's total liability for pending and unasserted future asbestos-related claims and annually performs a detailed analysis with the assistance of an

outside expert to

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update its estimated asbestos-related liability. The methodology used to project the Company's total liability for pending and unasserted potential future asbestos-related claims relied upon and included the following factors, among others:

- the outside expert's interpretation of a widely accepted forecast of the population likely to have been occupationally exposed to asbestos;
- epidemiological studies estimating the number of people likely to develop asbestos-related diseases such as mesothelioma and lung cancer;
- the Company's historical experience with the filing of non-malignancy claims and claims alleging other types of malignant diseases filed against the Company relative to the number of lung cancer claims filed against the Company;
- the outside expert's analysis of the number of people likely to file an asbestos-related personal injury claim against the Company based on such epidemiological and historical data and the Company's most recent three-year claims history;
- an analysis of the Company's pending cases, by type of disease claimed and by year filed;
- an analysis of the Company's most recent three-year history to determine the average settlement and resolution value of claims, by type of disease claimed;
- an adjustment for inflation in the future average settlement value of claims, at a 2.5% annual inflation rate, adjusted downward to 1.5% to take account of the declining value of claims resulting from the aging of the claimant population; and
- an analysis of the period over which the Company has and is likely to resolve asbestos-related claims against it in the future.

At March 31, 2018 and December 31, 2017, over 80 percent of the open claims against the Company are non-malignancy or unspecified disease claims, many of which have been placed on inactive or deferral dockets and the vast majority of which have little or no settlement value against the Company, particularly in light of recent changes in the legal and judicial treatment of such claims.

The Company's liability for asbestos-related matters and the asset for probable asbestos-related insurance recoveries were included in the following balance sheet accounts:

In millions	March 31, December 31,	
	2018	2017
Accrued expenses and other current liabilities	\$ 48.9	\$ 48.2
Other noncurrent liabilities	536.0	556.6
Total asbestos-related liabilities	\$ 584.9	\$ 604.8
Other current assets	\$ 60.6	\$ 56.1
Other noncurrent assets	200.3	210.3
Total asset for probable asbestos-related insurance recoveries	\$ 260.9	\$ 266.4

The Company's asbestos insurance receivables related to Ingersoll-Rand Company and Trane were \$134.0 million and \$126.9 million at March 31, 2018, respectively, and \$138.5 million and \$127.9 million at December 31, 2017, respectively. The receivable attributable to Trane for probable insurance recoveries as of March 31, 2018 is entirely supported by settlement agreements between Trane and the respective insurance carriers. Most of these settlement agreements constitute "coverage-in-place" arrangements, in which the insurer signatories agree to reimburse Trane for specified portions of its costs for asbestos bodily injury claims and Trane agrees to certain claims-handling protocols and grants to the insurer signatories certain releases and indemnifications.



The costs associated with the settlement and defense of asbestos-related claims, insurance settlements on asbestos-related matters and the revaluation of the Company's liability for potential future claims are included in the income statement within continuing operations or discontinued operations depending on the business to which they relate. The income (expense) associated with these transactions, for the three months ended March 31, were as follows:

In millions	Three months ended	
	2018	2017
Continuing operations	\$1.5	\$—
Discontinued operations	(7.2 )	(3.3 )
Total	\$(5.7)	\$(3.3)

Ongoing income and expenses associated with Ingersoll-Rand Company's asbestos-related matters are recorded within discontinued operations as they relate to previously divested businesses, primarily Ingersoll-Dresser Pump, which was sold by the Company in 2000. Ongoing income and expenses associated with Trane's asbestos-related matters are recorded within continuing operations.

In 2012 and 2013, Ingersoll-Rand Company filed actions in the Superior Court of New Jersey, Middlesex County, seeking a declaratory judgment and other relief regarding the Company's rights to defense and indemnity for asbestos claims. The defendants were several dozen solvent insurance companies, including companies that had been paying a portion of Ingersoll-Rand Company's asbestos claim defense and indemnity costs. The responding defendants generally challenged the Company's right to recovery, and raised various coverage defenses. Since filing the actions, Ingersoll-Rand Company has settled with approximately two-thirds of the insurer defendants, and has dismissed one of the actions in its entirety.

The Company continually monitors the status of pending litigation that could impact the allocation of asbestos claims against the Company's various insurance policies. The Company has concluded that its Ingersoll-Rand Company insurance receivable is probable of recovery because of the following factors:

- Ingersoll-Rand Company has reached favorable settlements regarding asbestos coverage claims for the majority of its recorded asbestos-related insurance receivable;

- a review of other companies in circumstances comparable to Ingersoll-Rand Company, including Trane, and the success of other companies in recovering under their insurance policies, including Trane's favorable settlements referenced above;

- the Company's confidence in its right to recovery under the terms of its policies and pursuant to applicable law; and
- the Company's history of receiving payments under the Ingersoll-Rand Company insurance program, including under policies that had been the subject of prior litigation.

The amounts recorded by the Company for asbestos-related liabilities and insurance-related assets are based on currently available information. The Company's actual liabilities or insurance recoveries could be significantly higher or lower than those recorded if assumptions used in the calculations vary significantly from actual results. Key variables in these assumptions include the number and type of new claims to be filed each year, the average cost of resolution of each such new claim, the resolution of coverage issues with insurance carriers, and the solvency risk with respect to the Company's insurance carriers. Furthermore, predictions with respect to these variables are subject to greater uncertainty as the projection period lengthens. Other factors that may affect the Company's liability include uncertainties surrounding the litigation process from jurisdiction to jurisdiction and from case to case, reforms that may be made by state and federal courts, and the passage of state or federal tort reform legislation.

The aggregate amount of the stated limits in insurance policies available to the Company for asbestos-related claims acquired over many years and from many different carriers, is substantial. However, limitations in that coverage, primarily due to the considerations described above, are expected to result in the projected total liability to claimants substantially exceeding the probable insurance recovery.

#### Warranty Liability

Standard product warranty accruals are recorded at the time of sale and are estimated based upon product warranty terms and historical experience. The Company assesses the adequacy of its liabilities and will make adjustments as necessary based on known or anticipated warranty claims, or as new information becomes available.



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The changes in the standard product warranty liability for the three months ended March 31 were as follows:

In millions                      2018   2017

Balance at beginning of period