NORDSON CORP
Form 10-Q
June 04, 2018

FORM 10-Q

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended April 30, 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 0-7977

NORDSON CORPORATION

(Exact name of registrant as specified in its charter)

Ohio (State of incorporation)	34-0590250 (I.R.S. Employer Identification No.)
28601 Clemens Road	
Westlake, Ohio (Address of principal executive offices)	44145 (Zip Code)

(440) 892-1580

(Telephone Number)

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

Common Shares without par value

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

None

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, 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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: Common Shares, without par value as of April 30, 2018: 58,091,870

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Part I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS (UNAUDITED)
Condensed Consolidated Statements of Income

	Three Months Ended		Six Months Ended	
	April 30, 2018	April 30, 2017	April 30, 2018	April 30, 2017
(In thousands, except for per share data)				
Sales	$553,706	$496,137	$1,104,130	$903,607
Operating costs and expenses:				
Cost of sales	246,878	220,625	496,299	402,957
Selling and administrative expenses	180,123	171,981	363,403	321,201
	427,001	392,606	859,702	724,158
Operating profit	126,705	103,531	244,428	179,449
Other income (expense):				
Interest expense	(12,127)	(7,907)	(23,445)	(13,548)
Interest and investment income	219	272	509	545
Other - net	3,322	(1,323)	145	(1,480)
	(8,586)	(8,958)	(22,791)	(14,483)
Income before income taxes	118,119	94,573	221,637	164,966
Income taxes	26,884	30,050	25,847	50,455
Net income	$91,235	$64,523	$195,790	$114,511
Average common shares	57,989	57,545	57,870	57,445
Incremental common shares attributable to outstanding stock options, restricted stock, and deferred stock-based compensation	956	687	1,038	681
Average common shares and common share equivalents	58,945	58,232	58,908	58,126
Basic earnings per share	$1.57	$1.12	$3.38	$1.99
Diluted earnings per share	$1.55	$1.11	$3.32	$1.97
Dividends declared per share	$0.30	$0.27	$0.60	$0.54

See accompanying notes.

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Condensed Consolidated Statements of Comprehensive Income

	Three Months Ended		Six Months Ended	
	April 30, 2018	April 30, 2017	April 30, 2018	April 30, 2017
(In thousands)				
Net income	$91,235	$64,523	$195,790	$114,511
Components of other comprehensive income (loss):				
Translation adjustments	(19,284)	5,849	19,298	99
Amortization of prior service cost and net actuarial losses, net of tax	2,812	1,708	4,321	3,398
Total other comprehensive income (loss)	(16,472)	7,557	23,619	3,497
Total comprehensive income	$74,763	$72,080	$219,409	$118,008

See accompanying notes.

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Condensed Consolidated Balance Sheets

	April 30, 2018	October 31, 2017
(In thousands)		
Assets		
Current assets:		
Cash and cash equivalents	$155,946	$90,383
Receivables - net	512,389	505,087
Inventories - net	284,363	264,266
Prepaid expenses	31,323	28,636
Total current assets	984,021	888,372
Property, plant and equipment - net	359,489	346,411
Goodwill	1,616,800	1,589,210
Intangible assets - net	531,478	547,180
Deferred income taxes	12,244	11,020
Other assets	35,184	32,346
Total assets	$3,539,216	$3,414,539
Liabilities and shareholders' equity		
Current liabilities:		
Accounts payable	$86,786	$86,016
Income taxes payable	23,809	22,310
Accrued liabilities	151,251	173,366
Customer advanced payments	41,292	34,654
Current maturities of long-term debt	226,587	326,587
Current obligations under capital leases	4,936	4,813
Total current liabilities	534,661	647,746
Long-term debt	1,312,459	1,256,397
Deferred income taxes	90,164	134,090
Pension obligations	106,770	111,666
Postretirement obligations	74,453	73,589
Other long-term liabilities	57,799	35,558
Shareholders' equity:		
Common shares	12,253	12,253
Capital in excess of stated value	435,070	412,785
Retained earnings	2,325,690	2,164,597
Accumulated other comprehensive loss	(110,816)	(134,435)
Common shares in treasury, at cost	(1,299,287)	(1,299,707)
Total shareholders' equity	1,362,910	1,155,493
Total liabilities and shareholders' equity	$3,539,216	$3,414,539

See accompanying notes.

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Condensed Consolidated Statements of Cash Flows

Six months ended	April 30, 2018	April 30, 2017
(In thousands)		
Cash flows from operating activities:		
Net income	$195,790	$114,511
Depreciation and amortization	53,716	39,412
Non-cash stock compensation	12,114	9,808
Deferred income taxes	(46,531)	(40)
Other non-cash expense	539	2,058
(Gain) loss on sale of property, plant and equipment	675	(193)
Changes in operating assets and liabilities	(3,992)	(21,284)
Net cash provided by operating activities	212,311	144,272
Cash flows from investing activities:		
Additions to property, plant and equipment	(33,049)	(27,029)
Proceeds from sale of property, plant and equipment	235	3,598
Equity investments	—	(5,094)
Acquisition of businesses, net of cash acquired	(44,176)	(805,218)
Net cash used in investing activities	(76,990)	(833,743)
Cash flows from financing activities:		
Proceeds from short-term borrowings	996	5,960
Repayment of short-term borrowings	(1,006)	(5,092)
Proceeds from long-term debt	125,904	817,291
Repayment of long-term debt	(171,067)	(84,289)
Repayment of capital lease obligations	(2,828)	(2,872)
Issuance of common shares	15,595	12,040
Purchase of treasury shares	(5,005)	(3,098)
Dividends paid	(34,697)	(30,999)
Net cash provided by (used in) financing activities	(72,108)	708,941
Effect of exchange rate changes on cash	2,350	1,697
Increase in cash and cash equivalents	65,563	21,167
Cash and cash equivalents:		
Beginning of year	90,383	67,239
End of period	$155,946	$88,406

See accompanying notes.

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Notes to Condensed Consolidated Financial Statements

April 30, 2018

NOTE REGARDING AMOUNTS AND FISCAL YEAR REFERENCES

In this quarterly report, all amounts related to United States dollars and foreign currency and to the number of Nordson Corporation's common shares, except for per share earnings and dividend amounts, are expressed in thousands.

Unless otherwise noted, all references to years relate to our fiscal year ending October 31.

1. Significant accounting policies

Basis of presentation. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring accruals) considered necessary for a fair presentation have been included. Operating results for the three and six months ended April 30, 2018 are not necessarily indicative of the results that may be expected for the full year. For further information, refer to the consolidated financial statements and footnotes included in our Annual Report on Form 10-K for the year ended October 31, 2017.

Basis of consolidation. The consolidated financial statements include the accounts of Nordson Corporation and its majority-owned and controlled subsidiaries. Investments in affiliates and joint ventures in which our ownership is 50% or less or in which we do not have control but have the ability to exercise significant influence, are accounted for under the equity method. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements. Actual amounts could differ from these estimates.

Revenue recognition. Most of our revenues are recognized upon shipment, provided that persuasive evidence of an arrangement exists, the sales price is fixed or determinable, collectibility is reasonably assured, and title and risk of loss have passed to the customer.

Certain arrangements may include installation, installation supervision, training, and spare parts, which tend to be completed in a short period of time, at an insignificant cost, and utilizing skills not unique to us, therefore, are typically regarded as inconsequential or perfunctory. Revenue for undelivered items is deferred and included within accrued liabilities in the accompanying balance sheet. Revenues deferred in 2018 and 2017 were not material.

Earnings per share. Basic earnings per share are computed based on the weighted-average number of common shares outstanding during each year, while diluted earnings per share are based on the weighted-average number of common shares and common share equivalents outstanding. Common share equivalents consist of shares issuable upon exercise of stock options computed using the treasury stock method, as well as restricted shares and deferred stock-based compensation. Options with an exercise price higher than the average market price are excluded from the calculation of diluted earnings per share because the effect would be anti-dilutive. No options were excluded from the calculation of diluted earnings per share for the three and six months ended April 30, 2018 and 2017, respectively.

2. Recently issued accounting standards

New accounting guidance adopted:

In March 2016, the Financial Accounting Standards Board ("FASB") issued a new standard which simplifies the accounting for share-based payment transactions. This guidance requires that excess tax benefits and tax deficiencies be recognized as income tax expense or benefit in the statements of income rather than additional paid-in capital. Additionally, the excess tax benefits will be classified along with other income tax cash flows as an operating activity, rather than a financing activity, in the statements of cash flows. Further, the update allows an entity to make a policy election to recognize forfeitures as they occur or estimate the number of awards expected to be forfeited. We adopted this new standard during the first quarter of 2018. As a result, net excess tax benefits of $6,950 were recognized as a reduction of income tax expense during the six months ended April 30, 2018. The cash flow classification requirements of this new standard were applied retrospectively. As a result, excess tax benefits of $6,950 are reported as Net cash provided by operating activities for the six months ended April 30, 2018 and

$4,908 of excess tax benefits were reclassified from Net cash used in financing activities to Net cash provided by operating activities for the six months ended April 30, 2017. This new standard also requires that employee taxes paid when an employer withholds shares for tax-withholding purposes be reported as financing activities in the statements of cash flows on a retrospective basis. Previously, this activity was included in operating activities. The impact of this change was immaterial to the statements of cash flows. Additionally, we elected to continue to estimate forfeitures rather than account for them as they occur.

New accounting guidance issued and not yet adopted:

In May 2014, the Financial Accounting Standards Board ("FASB") issued a new standard regarding revenue recognition. Under this standard, a company recognizes revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The standard implements a five-step process for customer contract revenue recognition that focuses on transfer of control. In August 2015, the FASB issued a standard to delay the effective date by one year. The new standard is effective for us beginning November 1, 2018. The new standard is required to be applied retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of initially applying it recognized at the date of initial application (modified retrospective method). We have not yet selected a transition method; however, we are currently anticipating using the modified retrospective method, but will base the final decision on the results of our assessment once complete. Our initial analysis of identifying revenue streams and evaluating a representative sample of contracts and other agreements with our customers is complete. We are in the process of assessing the impact of the new standard, if any, on our business processes, systems and controls. We will finalize our evaluation of potential differences that may result from applying the new standard to our contracts with customers in 2018 and provide updates on our progress in future filings.

In February 2016, the FASB issued a new standard which requires a lessee to recognize on the balance sheet the assets and liabilities for the rights and obligations created by those leases with a lease term of more than twelve months. Leases will continue to be classified as either financing or operating, with classification affecting the recognition, measurement and presentation of expenses and cash flows arising from a lease. It will be effective for us beginning November 1, 2019. We are currently assessing the impact this standard will have on our consolidated financial statements.

In March 2017, the FASB issued a new standard which requires the presentation of the service cost component of the net periodic benefit cost in the same income statement line item as other employee compensation costs arising from services rendered during the period. All other components of net periodic benefit cost will be presented below operating income. Additionally, only the service cost component will be eligible for capitalization in assets. It will be effective for us beginning November 1, 2018. Early adoption is permitted. We are currently assessing the impact this standard will have on our consolidated financial statements.

In February 2018, the FASB issued a new standard which gives entities the option to reclassify tax effects stranded in accumulated other comprehensive income as a result of the Tax Cuts and Jobs Act ("the Act") into retained earnings. The guidance allows entities to reclassify from accumulated other comprehensive income to retained earnings stranded tax effects resulting from the Act's new federal corporate income tax rate. The guidance also allows entities to elect to reclassify other stranded tax effects that relate to the Act but do not directly relate to the change in the federal tax rate (e.g., state taxes, changing from a worldwide tax system to a territorial system). Tax effects that are stranded in accumulated other comprehensive income for other reasons (e.g., prior changes in tax law, a change in valuation allowance) may not be reclassified. It will be effective for us beginning November 1, 2019. Early adoption is permitted. We are currently assessing the impact this standard will have on our consolidated financial statements.

In March 2018, the FASB issued a new standard which adds various Securities and Exchange Commission ("SEC") paragraphs pursuant to the issuance of the December 2017 SEC Staff Accounting Bulletin No. 118 ("SAB 118"), Income Tax Accounting Implications of the Tax Cuts and Jobs Act , which was effective immediately. The SEC issued SAB 118 to address concerns about reporting entities' ability to timely comply with the accounting requirements to recognize all of the effects of the Act in the period of enactment. SAB 118 allows disclosure that timely determination of some or all of the income tax effects from the Act are incomplete by the due date of the financial statements and if possible to provide a reasonable estimate. We have accounted for the tax effects of the Act under the guidance of SAB 118, on a provisional basis. Our accounting for certain income tax effects is incomplete, but we have determined reasonable estimates for those effects and have recorded provisional amounts in our consolidated financial statements. Refer to Note 7 for additional information.

3. Acquisitions

2018 acquisition

On January 2, 2018, we purchased 100 percent of the outstanding shares of Sonoscan, Inc. ("Sonoscan"), an Elk Grove Village, Illinois leading designer and manufacturer of acoustic microscopes and sophisticated acoustic micro imaging systems used in a variety of microelectronic, automotive, aerospace and industrial electronic assembly applications. We acquired Sonoscan for an aggregate purchase price of $44,832, net of $656 of cash. Based on the fair value of the assets acquired and the liabilities assumed, goodwill of $21,363 and identifiable intangible assets of $7,910 were recorded. The identifiable intangible assets consist primarily of $1,700 of customer relationships (amortized over 7 years), $3,300 of tradenames (amortized over 11 years), $2,500 of technology (amortized over 7 years) and $410 of non-compete agreements (amortized over 5 years). Goodwill associated with this acquisition is tax deductible. This acquisition is being reported in our Advanced Technology Systems segment. As of April 30, 2018, the purchase price allocations remain preliminary as we complete our assessments of income taxes, intangible assets and certain reserves.

2017 acquisition

On March 31, 2017, we completed the acquisition of Vention Medical's Advanced Technologies business ("Vention"), a Salem, New Hampshire leading designer, developer and manufacturer of minimally invasive interventional delivery devices, catheters and advanced components for the global medical technology market. This is a highly complementary business that adds significant scale and enhances strategic capabilities of our existing medical platform. We acquired Vention for an aggregate purchase price of $705,000, net of $3,313 of cash and other closing adjustments of $10,726. The acquisition was funded primarily through a new term loan facility, as well as through cash and borrowings on our credit facility. The purchase price was allocated to the underlying assets acquired and liabilities assumed based upon their estimated fair values at the date of acquisition. We determined the estimated fair values based on independent appraisals, discounted cash flow analyses, quoted market prices, replacement cost analyses and estimates made by management.

Based on the fair value of the assets acquired and the liabilities assumed, goodwill of $434,123, of which $37,200 is tax deductible, and identifiable intangible assets of $286,000 were recorded. The identifiable intangible assets consist primarily of $240,000 of customer relationships (amortized over 14 years), $2,000 of tradenames (amortized over 6 years), and $44,000 of technology, consisting of $36,000 (amortized over 14 years) and $8,000 (amortized over 10 years). Goodwill represents the value we expect to achieve through the expansion of our existing medical platform. This acquisition is being reported in our Advanced Technology Systems segment. No material purchase price allocation adjustments were made during the second quarter of 2018. As of April 30, 2018, the purchase price allocations are complete.

Also on March 31, 2017, we entered into a $705,000 term loan facility with a group of banks. The Term Loan Agreement provides for the following term loans in three tranches: $200,000 due in September 2018, $200,000 due in March 2020, and $305,000 due in March 2022. The weighted average interest rate for borrowings under this agreement was 2.99% at April 30, 2018. Borrowings under this agreement were used for the single purpose of acquiring Vention. We were in compliance with all covenants at April 30, 2018.

4. Inventories

At April 30, 2018 and October 31, 2017, inventories consisted of the following:

	April 30, 2018	October 31, 2017
Raw materials and component parts	$109,078	$105,424
Work-in-process	53,745	45,743
Finished goods	167,404	152,923
	330,227	304,090
Obsolescence and other reserves	(38,753)	(33,140)
LIFO reserve	(7,111)	(6,684)
	$284,363	$264,266

5. Goodwill and other intangible assets

Changes in the carrying amount of goodwill for the six months ended April 30, 2018 by operating segment are as follows:

	Adhesive Dispensing Systems	Advanced Technology Systems	Industrial Coating Systems	Total
Balance at October 31, 2017	$ 392,295	$ 1,172,857	$ 24,058	$1,589,210
Acquisitions	—	20,561	—	20,561
Currency effect	4,271	2,758	—	7,029
Balance at April 30, 2018	$ 396,566	$ 1,196,176	$ 24,058	$1,616,800

Accumulated impairment losses, which were recorded in 2009, were $232,789 at April 30, 2018 and October 31, 2017. Of these losses, $229,173 related to the Advanced Technology Systems segment, and $3,616 related to the Industrial Coating Systems segment.

Information regarding our intangible assets subject to amortization is as follows:

	April 30, 2018		
	Carrying Amount	Accumulated Amortization	Net Book Value
Customer relationships	$485,317	$ 121,602	$ 363,715
Patent/technology costs	155,854	55,215	100,639
Trade name	96,994	31,758	65,236
Non-compete agreements	11,659	9,774	1,885
Other	1,392	1,389	3
Total	$751,216	$ 219,738	$ 531,478

	October 31, 2017		
	Carrying Amount	Accumulated Amortization	Net Book Value
Customer relationships	$480,536	$ 102,033	$ 378,503
Patent/technology costs	150,581	48,669	101,912
Trade name	93,281	28,366	64,915
Non-compete agreements	11,142	9,298	1,844
Other	1,384	1,378	6
Total	$736,924	$ 189,744	$ 547,180

Amortization expense for the three months ended April 30, 2018 and 2017 was $14,172 and $10,159, respectively. Amortization expense for the six months ended April 30, 2018 and 2017 was $28,061 and $17,789, respectively.

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6. Pension and other postretirement plans

The components of net periodic pension cost for the three and six months ended April 30, 2018 and April 30, 2017 were:

	U.S.		International	
Three Months Ended	2018	2017	2018	2017
Service cost	$3,054	$3,184	$528	$625
Interest cost	3,658	3,243	424	419
Expected return on plan assets	(5,489)	(5,265)	(393)	(358)
Amortization of prior service cost (credit)	(3)	11	(83)	(76)
Amortization of net actuarial loss	2,550	2,457	548	662
Total benefit cost	$3,770	$3,630	$1,024	$1,272

	U.S.		International	
Six Months Ended	2018	2017	2018	2017
Service cost	$6,875	$6,243	$1,038	$1,159
Interest cost	7,159	6,454	833	768
Expected return on plan assets	(10,981)	(10,443)	(773)	(643)
Amortization of prior service cost (credit)	(11)	23	(162)	(147)
Amortization of net actuarial loss	4,706	4,785	1,077	1,261
Total benefit cost	$7,748	$7,062	$2,013	$2,398

The components of other postretirement benefit cost for the three and six months ended April 30, 2018 and April 30, 2017 were:

	U.S.		International	
Three Months Ended	2018	2017	2018	2017
Service cost	$152	$154	$5	$5
Interest cost	650	565	5	5
Amortization of prior service credit	(25)	(41)	—	—
Amortization of net actuarial (gain) loss	296	205	(5)	(4)
Total benefit cost	$1,073	$883	$5	$6

	U.S.		International	
Six Months Ended	2018	2017	2018	2017
Service cost	$373	$376	$10	$9
Interest cost	1,278	1,152	10	10
Amortization of prior service credit	(50)	(82)	—	—
Amortization of net actuarial (gain) loss	545	434	(10)	(8)
Total benefit cost	$2,146	$1,880	$10	$11

7. Income taxes

We record our interim provision for income taxes based on our estimated annual effective tax rate, as well as certain items discrete to the current period. The effective tax rates for the three and six months ended April 30, 2018 were 22.8% and 11.7%, respectively. The effective tax rates for the three and six months ended April 30, 2017 were 31.8% and 30.6%, respectively. The effective tax rate for the current quarter was lower than the comparable prior year period primarily due to recently enacted law commonly referred to as the U.S. Tax Cuts and Jobs Act ("the Act") as set forth below.

The Act was enacted into law on December 22, 2017. It reduces the U.S. federal corporate income tax rate from 35% to 21%. We have an October 31 fiscal year-end, therefore the lower corporate income tax rate will be phased in, resulting in a U.S. statutory federal rate of 23.3% for our fiscal year ending October 31, 2018, and 21% for subsequent fiscal years. The statutory tax rate of 23.3% was applied to earnings in the current quarter.

The Act requires us to revalue our existing U.S. deferred tax balance to reflect the lower statutory tax rate and pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously deferred from U.S. taxes. As a result, during the first quarter of 2018, we recorded a provisional tax benefit of $45,213 to reflect the revaluation of our tax assets and liabilities at the reduced corporate tax rate. We also recorded a provisional tax expense of $23,124 to reflect the transition tax on previously deferred foreign earnings. The net tax effect of these discrete items resulted in a decrease of $22,089 in income tax expense for the six months ended April 30, 2018. We intend to pay the transition tax in installments over the eight year period allowable under the Act. The transition tax is primarily included in other long-term liabilities in the Consolidated Balance Sheet at April 30, 2018. The amounts recorded are considered a provisional estimate under the U.S. Securities and Exchange Commission Staff Accounting Bulletin No. 118. The provisional calculations may change after the underlying temporary differences and foreign earnings are finalized. Furthermore, we are still analyzing certain aspects of the Act and related interpretive guidance and refining our calculations which could potentially affect the measurement of these balances or potentially give rise to new or additional deferred tax amounts.

In March 2016, the FASB issued a new standard which simplifies the accounting for share-based payment transactions, which we adopted in the first quarter of 2018. This guidance requires that excess tax benefits and tax deficiencies be recognized as income tax expense or benefit in the Consolidated Statements of Income rather than as additional paid-in capital. As a result, our income tax provision for the three and six months ended April 30, 2018 includes a discrete tax benefit of $2,202 and $6,950, respectively.

During the three months ended April 30, 2017, we recorded a discrete tax expense of $2,600 related to nondeductible acquisition costs.

8. Accumulated other comprehensive loss

The components of accumulated other comprehensive loss, including adjustments for items that are reclassified from accumulated other comprehensive loss to net income, are shown below.

	Cumulative translation adjustments	Pension and postretirement benefit plan adjustments	Accumulated other comprehensive loss
Balance at October 31, 2017	$ (28,423)	$ (106,012)	$ (134,435)
Pension and postretirement plan changes, net of tax of $(1,334)	—	4,321	4,321
Currency translation losses	19,298	—	19,298
Balance at April 30, 2018	$ (9,125)	$ (101,691)	$ (110,816)

9. Stock-based compensation

During the 2018 Annual Meeting of Shareholders, our shareholders approved the Amended and Restated 2012 Stock Incentive and Award Plan (the “2012 Plan”). The 2012 Plan provides for the granting of stock options, stock appreciation rights, restricted shares, restricted share units, performance shares, cash awards and other stock or performance-based incentives. A maximum of 4,525 common shares is available for grant under the 2012 Plan.

Stock Options

Nonqualified or incentive stock options may be granted to our employees and directors. Generally, options granted to employees may be exercised beginning one year from the date of grant at a rate not exceeding 25 percent per year and expire 10 years from the date of grant. Vesting accelerates upon a qualified termination in connection with a change in control. In the event of termination of employment due to early retirement or normal retirement at age 65, options granted within 12 months prior to termination are forfeited, and vesting continues post retirement for all other unvested options granted. In the event of disability or death, all unvested stock options granted within 12 months prior to termination (or at any time prior to December 28, 2017) fully vest. Termination for any other reason results in forfeiture of unvested options and vested options in certain circumstances. The amortized cost of options is accelerated if the retirement eligibility date occurs before the normal vesting date. Option exercises are satisfied through the issuance of treasury shares on a first-in, first-out basis. We recognized compensation expense related to stock options of $2,454 and $2,312 in the three months ended April 30, 2018 and 2017, respectively. Corresponding amounts for the six months ended April 30, 2018 and 2017 were $5,071 and $4,634, respectively.

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The following table summarizes activity related to stock options for the six months ended April 30, 2018:

	Number of Options	Weighted-Average Exercise Price Per Share	Aggregate Intrinsic Value	Weighted Average Remaining Term
Outstanding at October 31, 2017	1,922	$ 70.08		
Granted	368	$ 127.67		
Exercised	(319)	$ 48.94		
Forfeited or expired	(5)	$ 95.48		
Outstanding at April 30, 2018	1,966	$ 84.21	$ 87,282	6.9 years
Vested or expected to vest at April 30, 2018	1,944	$ 83.83	$ 87,036	6.9 years
Exercisable at April 30, 2018	1,023	$ 65.54	$ 64,539	5.4 years

As of April 30, 2018, there was $12,874 of total unrecognized compensation cost related to unvested stock options. That cost is expected to be amortized over a weighted average period of approximately 1.5 years.

The fair value of each option grant was estimated at the date of grant using the Black-Scholes option-pricing model with the following assumptions:

Six months ended	April 30, 2018	April 30, 2017
Expected volatility	24.0%-26.7%	26.0%-29.2%
Expected dividend yield	0.97%	0.91%-1.17%
Risk-free interest rate	2.09%-2.20%	1.89%-2.06%
Expected life of the option (in years)	5.4-6.2	5.4-6.2

The weighted-average expected volatility used to value the 2018 and 2017 options was 25.0% and 29.1%, respectively.

Historical information was the primary basis for the selection of the expected volatility, expected dividend yield and the expected lives of the options. The risk-free interest rate was selected based upon yields of U.S. Treasury issues with a term equal to the expected life of the option being valued.

The weighted average grant date fair value of stock options granted during the six months ended April 30, 2018 and 2017 was $31.42 and $28.86, respectively.

The total intrinsic value of options exercised during the three months ended April 30, 2018 and 2017 was $11,021 and $6,806, respectively. The total intrinsic value of options exercised during the six months ended April 30, 2018 and

2017 was $29,744 and $19,256, respectively.

Cash received from the exercise of stock options for the six months ended April 30, 2018 and 2017 was $15,595 and $12,040, respectively.

Restricted Shares and Restricted Share Units

We may grant restricted shares and/or restricted share units to our employees and directors. These shares or units may not be transferred for a designated period of time (generally one to three years) defined at the date of grant.

For employee recipients, in the event of termination of employment due to early retirement with the consent of the Company, restricted shares granted within 12 months prior to termination are forfeited, and other restricted shares vest on a pro-rata basis. In the event of termination of employment due to normal retirement at age 65, restricted shares granted within 12 months prior to termination are forfeited, and, for other restricted shares, the restriction period will lapse and the shares will vest and be transferable. For restricted shares granted within 12 months prior to termination (or at any time prior to December 28, 2017), the restrictions lapse in the event of a recipient's disability or death. Termination for any other reason prior to the lapse of any restrictions results in forfeiture of the shares.

For non-employee directors, all restrictions lapse in the event of disability or death of the non-employee director. Termination of service as a director for any other reason within one year of date of grant results in a pro-rata vesting of shares or units.

As shares or units are issued, deferred stock-based compensation equivalent to the fair value on the date of grant is expensed over the vesting period. Tax benefits arising from the lapse of restrictions are recognized when realized and credited to capital in excess of stated value.

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The following table summarizes activity related to restricted shares during the six months ended April 30, 2018:

	Number of Shares	Weighted-Average Grant Date Fair Value
Restricted shares at October 31, 2017	58	$ 90.38
Granted	20	$ 127.68
Vested	(23)	$ 84.78
Restricted shares at April 30, 2018	55	$ 106.33

As of April 30, 2018, there was $4,058 of unrecognized compensation cost related to restricted shares. The cost is expected to be amortized over a weighted average period of 2.0 years. The amount charged to expense related to restricted shares during the three months ended April 30, 2018 and 2017 was $637 and $510, respectively. These amounts included common share dividends for the three months ended April 30, 2018 and 2017 of $17 and $15, respectively. For the six months ended April 30, 2018 and 2017, the amounts charged to expense related to restricted shares were $1,391 and $1,088, respectively. These amounts included common share dividends for the six months ended April 30, 2018 and 2017 of $34 and $31, respectively.

The following table summarizes activity related to restricted share units during the six months ended April 30, 2018:

	Number of Units	Weighted-Average Grant Date Fair Value
Restricted share units at October 31, 2017	0	$ —
Granted	8	$ 126.38
Restricted share units at April 30, 2018	8	$ 126.38

As of April 30, 2018, there was $500 of remaining expense to be recognized related to outstanding restricted share units, which is expected to be recognized over a weighted average period of 0.5 years. The amount charged to expense related to restricted share units during each of the three months ended April 30, 2018 and 2017 was $252 and $253, respectively. For the six months ended April 30, 2018 and 2017, the corresponding amounts were $505 and $506, respectively.

Deferred Directors' Compensation

Non-employee directors may defer all or part of their cash and equity-based compensation until retirement. Cash compensation may be deferred as cash or as share equivalent units. Deferred cash amounts are recorded as liabilities, and share equivalent units are recorded as equity. Additional share equivalent units are earned when common share dividends are declared.

The following table summarizes activity related to director deferred compensation share equivalent units during the six months ended April 30, 2018:

	Number of Shares	Weighted-Average Grant Date Fair Value
Outstanding at October 31, 2017	101	$ 46.74
Dividend equivalents	1	$ 141.77
Outstanding at April 30, 2018	102	$ 47.14

The amount charged to expense related to director deferred compensation for the three months ended April 30, 2018 and 2017 was $30 and $26, respectively. For the six months ended April 30, 2018 and 2017, the corresponding amounts were $61 and $52, respectively.

Performance Share Incentive Awards

Executive officers and selected other key employees are eligible to receive common share-based incentive awards. Payouts, in the form of unrestricted common shares, vary based on the degree to which corporate financial performance exceeds predetermined threshold, target and maximum performance goals over three-year performance periods. No payout will occur unless threshold performance is achieved.

The amount of compensation expense is based upon current performance projections for each three-year period and the percentage of the requisite service that has been rendered. The calculations are also based upon the grant date fair value determined using the closing market price of our common shares at the grant date, reduced by the implied value of dividends not to be paid. The per share values were $123.45 for 2018, $103.75 and $104.49 per share for 2017 and $67.69 per share for 2016. During the three months ended April 30, 2018 and 2017, $1,637 and $3,178 was charged to expense, respectively. For the six months ended April 30, 2018 and 2017, the corresponding amounts were $4,986 and $3,430, respectively. The cumulative amount recorded in shareholders' equity at April 30, 2018 was $12,108.

Deferred Compensation

Our executive officers and other highly compensated employees may elect to defer up to 100% of their base pay and cash incentive and for executive officers, up to 90% of their share-based performance incentive payout each year. Additional share units are credited for quarterly dividends paid our common shares. Expense related to dividends paid under this plan for the three months ended April 30, 2018 and 2017 was $67 and $68, respectively. For the six months ended April 30, 2018 and 2017, the corresponding amounts were $134 and $129, respectively.

10. Warranties

We offer warranties to our customers depending on the specific product and terms of the customer purchase agreement. A typical warranty program requires that we repair or replace defective products within a specified time period (generally one year) from the date of delivery or first use. We record an estimate for future warranty-related costs based on actual historical return rates. Based on analysis of return rates and other factors, the adequacy of our warranty provisions are adjusted as necessary. The liability for warranty costs is included in accrued liabilities in the Consolidated Balance Sheet.

Following is a reconciliation of the product warranty liability for the six months ended April 30, 2018 and 2017:

	April 30, 2018	April 30, 2017
Beginning balance at October 31	$13,377	$11,770
Accruals for warranties	5,937	5,148
Warranty assumed from acquisitions	-	61
Warranty payments	(6,642)	(4,821)
Currency effect	227	2
Ending balance	$12,899	$12,160

11. Operating segments

We conduct business across three primary business segments: Adhesive Dispensing Systems, Advanced Technology Systems, and Industrial Coating Systems. The composition of segments and measure of segment profitability is consistent with that used by our chief operating decision maker. The primary measure used by the chief operating decision maker for purposes of making decisions about allocating resources to the segments and assessing performance is operating profit, which equals sales less cost of sales and certain operating expenses. Items below the operating profit line of the Consolidated Statement of Income (interest and investment income, interest expense and other income/expense) are excluded from the measure of segment profitability reviewed by our chief operating decision maker and are not presented by operating segment. The accounting policies of the segments are the same as those described in Note 1, Significant Accounting Policies, of our annual report on Form 10-K for the year ended October 31, 2017.

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The following table presents information about our segments:

	Adhesive Dispensing Systems		Advanced Technology Systems	Industrial Coating Systems	Corporate	Total
Three months ended						
April 30, 2018						
Net external sales	$ 238,775		$ 250,839	$64,092	$—	$553,706
Operating profit (loss)	69,514	(a)	58,306	11,572	(12,687)	126,705
Three months ended						
April 30, 2017						
Net external sales	$ 226,943		$ 210,142	$59,052	$—	$496,137
Operating profit (loss)	65,719	(b)	54,306	10,252	(26,746)	103,531
Six months ended						
April 30, 2018						
Net external sales	$ 459,639		$ 522,540	$121,951	$—	$1,104,130
Operating profit (loss)	122,829	(a)	125,574	21,732	(25,707)	244,428
Six months ended						
April 30, 2017						
Net external sales	$ 434,780		$ 355,502	$113,325	$—	$903,607
Operating profit (loss)	118,775	(b)	80,669	17,337	(37,332)	179,449

(a) Includes $1,082 and $2,149 of severance and restructuring costs in the three and six months ended April 30, 2018, respectively.
(b) Includes $491 and $718 of severance and restructuring costs in the three and six months ended April 30, 2017, respectively.

A reconciliation of total segment operating income to total consolidated income before income taxes is as follows:

	Three Months Ended		Six Months Ended	
	April 30, 2018	April 30, 2017	April 30, 2018	April 30, 2017
Total profit for reportable segments	$126,705	$103,531	$244,428	$179,449
Interest expense	(12,127)	(7,907)	(23,445)	(13,548)
Interest and investment income	219	272	509	545
Other-net	3,322	(1,323)	145	(1,480)
Income before income taxes	$118,119	$94,573	$221,637	$164,966

We have significant sales in the following geographic regions:

	Three Months Ended		Six Months Ended	
	April 30, 2018	April 30, 2017	April 30, 2018	April 30, 2017
United States	$178,821	$156,095	$344,652	$281,616
Americas	38,959	36,326	73,238	66,368
Europe	154,736	128,468	296,674	247,627
Japan	33,030	30,855	98,899	55,032
Asia Pacific	148,160	144,393	290,667	252,964
Total net external sales	$553,706	$496,137	$1,104,130	$