
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 July 31, 2019

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)

28601 Clemens Road
Westlake, Ohio
(Address of principal executive offices)

34-0590250
(I.R.S. Employer Identification No.)

44145
(Zip Code)

(440) 892-1580
(Telephone Number)

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange On Which Registered
Common Shares, without par value	NDSN	Nasdaq Stock Market LLC

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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐
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 ☒

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 August 30, 2019: 57,490,343

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Part I – FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS (UNAUDITED)

Condensed Consolidated Statements of Income

	Three Months Ended		Nine Months Ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
<i>(In thousands, except for per share data)</i>				
Sales	\$ 559,746	\$ 581,243	\$ 1,608,775	\$ 1,685,373
Operating costs and expenses:				
Cost of sales	257,123	260,767	735,647	756,909
Selling and administrative expenses	172,347	182,934	529,675	542,680
	429,470	443,701	1,265,322	1,299,589
Operating profit	130,276	137,542	343,453	385,784
Other income (expense):				
Interest expense	(11,500)	(13,765)	(36,238)	(37,210)
Interest and investment income	511	356	1,153	865
Other - net	210	(1,438)	(4,546)	(5,107)
	(10,779)	(14,847)	(39,631)	(41,452)
Income before income taxes	119,497	122,695	303,822	344,332
Income taxes	25,569	27,811	69,404	53,658
Net income	\$ 93,928	\$ 94,884	\$ 234,418	\$ 290,674
Average common shares	57,395	58,053	57,463	57,931
Incremental common shares attributable to outstanding stock options, restricted stock, and deferred stock-based compensation	722	859	720	979
Average common shares and common share equivalents	58,117	58,912	58,183	58,910
Basic earnings per share	\$ 1.64	\$ 1.63	\$ 4.08	\$ 5.02
Diluted earnings per share	\$ 1.62	\$ 1.61	\$ 4.03	\$ 4.93

See accompanying notes.

Nordson Corporation

Condensed Consolidated Statements of Comprehensive Income

	Three Months Ended		Nine Months Ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
<i>(In thousands)</i>				
Net income	\$ 93,928	\$ 94,884	\$ 234,418	\$ 290,674
Components of other comprehensive income (loss):				
Foreign currency translation adjustments	(7,172)	(26,361)	227	(7,063)
Amortization of prior service cost and net actuarial losses, net of tax	2,378	2,796	5,328	7,118
Total other comprehensive income (loss)	(4,794)	(23,565)	5,555	55
Total comprehensive income	<u>\$ 89,134</u>	<u>\$ 71,319</u>	<u>\$ 239,973</u>	<u>\$ 290,729</u>

See accompanying notes.

Nordson Corporation

Condensed Consolidated Balance Sheets

	July 31, 2019	October 31, 2018
<i>(In thousands)</i>		
Assets		
Current assets:		
Cash and cash equivalents	\$ 147,845	\$ 95,678
Receivables - net	499,981	491,423
Inventories - net	282,614	264,477
Prepaid expenses and other current assets	50,300	32,524
Total current assets	980,740	884,102
Property, plant and equipment - net	392,034	386,666
Goodwill	1,613,476	1,608,018
Intangible assets - net	459,027	499,741
Deferred income taxes	11,287	9,780
Other assets	34,974	32,705
Total assets	<u>\$ 3,491,538</u>	<u>\$ 3,421,012</u>
Liabilities and shareholders' equity		
Current liabilities:		
Accounts payable	\$ 85,565	\$ 83,590
Income taxes payable	745	19,319
Accrued liabilities	138,909	175,085
Customer advanced payments	45,523	38,997
Current maturities of long-term debt	168,734	28,734
Current obligations under capital leases	4,746	4,555
Total current liabilities	444,222	350,280
Long-term debt	1,179,872	1,285,357
Deferred income taxes	102,429	100,704
Pension obligations	93,913	113,222
Postretirement obligations	71,310	70,154
Other long-term liabilities	52,904	50,554
Shareholders' equity:		
Common shares	12,253	12,253
Capital in excess of stated value	470,951	446,555
Retained earnings	2,666,797	2,488,375
Accumulated other comprehensive loss	(173,759)	(179,314)
Common shares in treasury, at cost	(1,429,354)	(1,317,128)
Total shareholders' equity	1,546,888	1,450,741
Total liabilities and shareholders' equity	<u>\$ 3,491,538</u>	<u>\$ 3,421,012</u>

See accompanying notes.

Nordson Corporation

Condensed Consolidated Statements of Shareholders' Equity

	Nine-Month Period Ended July 31, 2019					
	Common Shares	Additional Paid-in- Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Common Shares in Treasury, at cost	TOTAL
<i>(In thousands, except for per share data)</i>						
November 1, 2018	\$ 12,253	\$ 446,555	\$ 2,488,375	\$ (179,314)	\$ (1,317,128)	\$ 1,450,741
Shares issued under company stock and employee benefit plans	—	1,016	—	—	2,591	3,607
Stock-based compensation	—	4,359	—	—	—	4,359
Purchase of treasury shares (901,545 shares)	—	—	—	—	(107,667)	(107,667)
Dividends declared (\$0.35 per share)	—	—	(20,210)	—	—	(20,210)
Net Income	—	—	48,567	—	—	48,567
Impact of adoption of ASU 2014-09 (See Note 2)	—	—	4,329	—	—	4,329
Other Comprehensive Income:						
Foreign currency translation adjustments	—	—	—	16,463	—	16,463
Defined benefit pension and post-retirement plans adjustment	—	—	—	1,352	—	1,352
January 31, 2019	\$ 12,253	\$ 451,930	\$ 2,521,061	\$ (161,499)	\$ (1,422,204)	\$ 1,401,541
Shares issued under company stock and employee benefit plans	—	8,116	—	—	2,731	10,847
Stock-based compensation	—	4,869	—	—	—	4,869
Purchase of treasury shares (78,957 shares)	—	—	—	—	(10,422)	(10,422)
Dividends declared (\$0.35 per share)	—	—	(20,029)	—	—	(20,029)
Net Income	—	—	91,923	—	—	91,923
Other Comprehensive Income (Loss):						
Foreign currency translation adjustments	—	—	—	(9,064)	—	(9,064)
Defined benefit pension and post-retirement plans adjustment	—	—	—	1,598	—	1,598
April 30, 2019	\$ 12,253	\$ 464,915	\$ 2,592,955	\$ (168,965)	\$ (1,429,895)	\$ 1,471,263
Shares issued under company stock and employee benefit plans	—	2,245	—	—	576	2,821
Stock-based compensation	—	3,791	—	—	—	3,791
Purchase of treasury shares (261 shares)	—	—	—	—	(35)	(35)
Dividends declared (\$0.35 per share)	—	—	(20,086)	—	—	(20,086)
Net Income	—	—	93,928	—	—	93,928
Other Comprehensive Income (Loss):						
Foreign currency translation adjustments	—	—	—	(7,172)	—	(7,172)
Defined benefit pension and post-retirement plans adjustment	—	—	—	2,378	—	2,378
July 31, 2019	\$ 12,253	\$ 470,951	\$ 2,666,797	\$ (173,759)	\$ (1,429,354)	\$ 1,546,888

Nordson Corporation
Nine-Month Period Ended July 31, 2018
(In thousands, except for per share data)

	Common Shares	Additional Paid-in- Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Common Shares in Treasury, at cost	TOTAL
November 1, 2017	\$ 12,253	\$ 412,785	\$ 2,164,597	\$ (134,435)	\$ (1,299,707)	\$ 1,155,493
Shares issued under company stock and employee benefit plans	—	6,526	—	—	3,779	10,305
Stock-based compensation	—	6,987	—	—	—	6,987
Purchase of treasury shares (34,645 shares)	—	—	—	—	(4,989)	(4,989)
Dividends declared (\$0.30 per share)	—	—	(17,321)	—	—	(17,321)
Net Income	—	—	104,555	—	—	104,555
Other Comprehensive Income:						
Foreign currency translation adjustments	—	—	—	38,582	—	38,582
Defined benefit pension and post-retirement plans adjustment	—	—	—	1,509	—	1,509
January 31, 2018	\$ 12,253	\$ 426,298	\$ 2,251,831	\$ (94,344)	\$ (1,300,917)	\$ 1,295,121
Shares issued under company stock and employee benefit plans	—	3,645	—	—	1,646	5,291
Stock-based compensation	—	5,127	—	—	—	5,127
Purchase of treasury shares (120 shares)	—	—	—	—	(16)	(16)
Dividends declared (\$0.30 per share)	—	—	(17,376)	—	—	(17,376)
Net Income	—	—	91,235	—	—	91,235
Other Comprehensive Income (Loss):						
Foreign currency translation adjustments	—	—	—	(19,284)	—	(19,284)
Defined benefit pension and post-retirement plans adjustment	—	—	—	2,812	—	2,812
April 30, 2018	\$ 12,253	\$ 435,070	\$ 2,325,690	\$ (110,816)	\$ (1,299,287)	\$ 1,362,910
Shares issued under company stock and employee benefit plans	—	973	—	—	784	1,757
Stock-based compensation	—	4,399	—	—	—	4,399
Purchase of treasury shares (445 shares)	—	—	—	—	(58)	(58)
Dividends declared (\$0.30 per share)	—	—	(17,412)	—	—	(17,412)
Net Income	—	—	94,884	—	—	94,884
Other Comprehensive Income (Loss):						
Foreign currency translation adjustments	—	—	—	(26,361)	—	(26,361)
Defined benefit pension and post-retirement plans adjustment	—	—	—	2,797	—	2,797
July 31, 2018	\$ 12,253	\$ 440,442	\$ 2,403,162	\$ (134,380)	\$ (1,298,561)	\$ 1,422,916

See accompanying notes.

Nordson Corporation

Condensed Consolidated Statements of Cash Flows

<u>Nine months ended</u>	<u>July 31, 2019</u>	<u>July 31, 2018</u>
<i>(In thousands)</i>		
Cash flows from operating activities:		
Net income	\$ 234,418	\$ 290,674
Depreciation and amortization	83,331	81,037
Non-cash stock compensation	13,019	16,513
Deferred income taxes	(1,828)	(47,563)
Other non-cash expense	2,455	1,040
Loss on sale of property, plant and equipment	1,053	741
Changes in operating assets and liabilities	(96,017)	485
Net cash provided by operating activities	236,431	342,927
Cash flows from investing activities:		
Additions to property, plant and equipment	(46,002)	(45,972)
Proceeds from sale of property, plant and equipment	1,037	299
Acquisition of businesses, net of cash acquired	(12,110)	(45,364)
Equity investments	(844)	—
Net cash used in investing activities	(57,919)	(91,037)
Cash flows from financing activities:		
Proceeds from short-term borrowings	—	996
Repayment of short-term borrowings	—	(1,006)
Proceeds from long-term debt	184,892	474,372
Repayment of long-term debt	(148,883)	(503,765)
Repayment of capital lease obligations	(4,442)	(4,241)
Issuance of common shares	17,275	17,352
Purchase of treasury shares	(118,124)	(5,063)
Dividends paid	(60,325)	(52,109)
Net cash used in financing activities	(129,607)	(73,464)
Effect of exchange rate changes on cash	3,262	(2,007)
Increase in cash and cash equivalents	52,167	176,419
Cash and cash equivalents:		
Beginning of year	95,678	90,383
End of period	\$ 147,845	\$ 266,802

See accompanying notes.

Notes to Condensed Consolidated Financial Statements

July 31, 2019

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 nine months ended July 31, 2019 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, 2018. Certain reclassifications have been made to the prior year financial statements to conform to current year classifications.

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.

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 months ended July 31, 2019. Options excluded from the calculation of diluted earnings per share for the nine months ended July 31, 2019 were 235. No options were excluded from the calculation of diluted earnings per share for the three and nine months ended July 31, 2018.

2. Revenue recognition

Adoption of new accounting standard:

On November 1, 2018, we adopted ASU 2014-09 ("Topic 606") using the modified retrospective method applied to those contracts which were not completed as of November 1, 2018. Results for reporting periods beginning after November 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting. The cumulative impact of adopting Topic 606 as of November 1, 2018 did not have a material impact to the Consolidated Financial Statements. The Company does not expect the impact of the adoption of Topic 606 to be material to the Consolidated Financial Statements on an ongoing basis.

Accounting policy:

A contract exists when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of the consideration is probable. Revenue is recognized when performance obligations under the terms of the contract with a customer are satisfied. Generally, our revenue results from short-term, fixed-price contracts and continues to primarily be recognized as of a point in time when the product is shipped or at a later point when the control of the product transfers to the customer. Revenue for undelivered items is deferred and included within Accrued liabilities in our Consolidated Balance Sheets. Revenues deferred as of July 31, 2019 and October 31, 2018 were not material.

However, for certain contracts related to the sale of customer-specific product within our Advanced Technology Systems segment, there was a change in revenue recognition upon adoption of the new revenue standard. Previously, these contracts were recognized at the point in time when the shipping terms were satisfied. Under the new revenue standard, we now recognize revenue for these contracts over time as we satisfy performance obligations because of the continuous transfer of control to the customer. The continuous transfer of control to the customer occurs as we enhance assets that are customer controlled and we are contractually entitled to payment for work performed to date plus a reasonable margin.

As control transfers over time for these products or services, revenue is recognized based on progress toward completion of the performance obligations. The selection method to measure progress towards completion requires judgment and is based on the nature of the products or services to be provided. We have elected to use the input method – costs incurred for these contracts because it best depicts the transfer of products or services to the customer based on incurring costs on the contract. Under this method, revenues are recorded proportionally as costs are incurred. Contract assets recognized are recorded in Prepaid expenses and other current assets and contract liabilities are recorded in Accrued liabilities in our Consolidated Balance Sheets and were not material at July 31, 2019. Revenue recognized over time is not material to our overall Consolidated Financial Statements.

Revenue is measured as the amount of consideration we expect to receive in exchange for transferring products or services. Sales, value add, and other taxes we collect concurrently with revenue-producing activities are excluded from revenue. As a practical expedient, we may exclude the assessment of whether goods or services are performance obligations, if they are immaterial in the context of the contract, and combine these with other performance obligations. While payment terms and conditions vary by contract type, we have determined that our contracts generally do not include a significant financing component. We have elected to apply the practical expedient to treat all shipping and handling costs as fulfillment costs as a significant portion of these costs are incurred prior to transfer of control to the customer. We have also elected to apply the practical expedient to expense sales commissions as they are incurred as the amortization period resulting from capitalizing the costs is one year or less. These costs are recorded within Selling, general and administrative expenses in our Consolidated Statements of Income.

We offer assurance type warranties on our products as well as separately sold warranty contracts. Revenue related to warranty contracts that are sold separately is recognized over the life of the warranty term. See Note 11 for details on our warranties.

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 not material.

We disclose disaggregated revenues by operating segment and geography in accordance with the revenue standard and on the same basis used internally by the chief operating decision maker for evaluating performance of operating segments and for allocating resources. See Note 12 for details on our operating segments.

3. Recently issued accounting standards

New accounting guidance adopted:

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 are presented below operating income. Additionally, only the service cost component will be eligible for capitalization in assets. We adopted the standard beginning November 1, 2018. During the three and nine months ended July 31, 2018, the reclassification resulted in an increase in Other expense of \$1,966 and \$5,780, respectively, a decrease in Cost of sales of \$80 and \$237, respectively, and a decrease in Selling, general & administrative expenses of \$1,886 and \$5,543, respectively.

New accounting guidance issued and not yet adopted:

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) 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 be classified as either financing or operating, with classification affecting the recognition, measurement and presentation of expenses and cash flows arising from a lease. While the Company is currently evaluating the impact that this new guidance will have on its consolidated financial statements, it is expected that the primary impact upon adoption will be the recognition, on a discounted basis, of the Company's minimum commitments under noncancelable operating leases as right of use assets and lease liabilities on the consolidated balance sheets. It is expected that this could result in a substantial increase in assets and liabilities on the consolidated balance sheets.

We will adopt the new standard on the required effective date of November 1, 2019 using the transition option, established by ASU 2018-11, Leases (Topic 842), Targeted Improvements (ASU 2018-11). This transition option was released by the FASB to reduce the cost and complexity associated with reflecting the new standard in prior periods presented. We will also elect the practical expedient package related to the identification of leases in contracts, lease classification, and accounting for initial direct costs whereby prior conclusions do not have to be reassessed for leases that commenced before the effective date. As we will not reassess such conclusions, we do not plan to adopt the practical expedient to use hindsight to determine the likelihood of whether a lease will be extended, terminated or whether a purchase option will be exercised. A cross-functional implementation team is continuing to validate data within the enterprise-wide lease management system to assess functionality as well as identifying the appropriate changes to business processes and controls to support recognition and disclosure under the new standard.

In June 2016, the FASB issued a new standard that changes the impairment model for most financial instruments. Current guidance requires the recognition of credit losses based on an incurred loss impairment methodology that reflects losses once the losses are probable. We will be required to use a current expected credit loss model that will immediately recognize an estimate of credit losses that are expected to occur over the life of the financial instruments that are in the scope of this update, including trade receivables. ASU 2016-13 does not prescribe a specific method to make an estimate so the application will require judgment and should consider historical information, current information, reasonable and supportable forecasts, and includes estimates of prepayment. This guidance will become effective for us on November 1, 2020. We are currently assessing the impact this standard will have on the Consolidated Financial Statements.

In August 2018, the FASB issued a new standard which removes, modifies, and adds certain disclosure requirements on fair value measurements. The guidance removes disclosure requirements pertaining to the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, the policy for timing of transfers between levels, and the valuation processes for Level 3 fair value measurements. For investments in certain entities that calculate net asset value, an entity is required to disclose the timing of liquidation of an investee's assets and the date when restrictions from redemption might lapse only if the investee has communicated the timing to the entity or announced the timing publicly. In addition, the amendment clarifies that the measurement uncertainty disclosure is to communicate information about the uncertainty in measurement as of the reporting date. The guidance adds disclosure requirements for changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period as well as the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. It will be effective for us beginning November 1, 2020. Early adoption is permitted. We are currently assessing the impact this standard will have on our Consolidated Financial Statements.

In August 2018, the FASB issued a new standard which addresses defined benefit plans. The amendments modify the following disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans: the amounts in accumulated other comprehensive income expected to be recognized as components of net period benefit cost over the next fiscal year, amount and timing of plan assets expected to be returned to the employer, related party disclosure about the amount of future annual benefits covered by insurance and annuity contracts and significant transactions between the employer or related parties and the plan, and the effects of a one-percentage point change in assumed health care cost trend rates on the (a) aggregate of the service and interest cost components of net periodic benefit costs and (b) benefit obligation for postretirement health care benefits are removed. A disclosure requirement was added for the explanation of the reasons for significant gains and losses related to changes in the benefit obligation for the period. Additionally, the standard clarifies disclosure requirement surrounding the projected benefit obligation (PBO) and fair value of plan assets for plans with PBOs in excess of plan assets and the accumulated benefit obligation (ABO) and fair value of plan assets for plans with ABOs in excess of plan assets. It will be effective for us beginning November 1, 2020. Early adoption is permitted. We are currently assessing the impact this standard will have on our Consolidated Financial Statements.

4. Acquisitions

Business acquisitions have been accounted for using the acquisition method, with the acquired assets and liabilities recorded at estimated fair value on the dates of acquisition. The cost in excess of the net assets of the business acquired is included in goodwill. Operating results since the respective dates of acquisitions are included in the Consolidated Statements of Income.

2019 acquisition

On July 1, 2019, we purchased certain assets of Optical Control GmbH & Co. KG (“Optical”), a Nuremberg, Germany designer and developer of high speed, fully automatic counting systems utilizing x-ray technology. This transaction was not material to our Consolidated Financial Statements. We recorded the acquisition of Optical based on the fair value of the assets acquired and the liabilities assumed. Goodwill associated with this acquisition is tax deductible. This acquisition is being reported in our Advanced Technology Systems segment. As of July 31, 2019, the purchase price allocations remain preliminary as we complete our assessments of income taxes, intangible assets and certain reserves.

2018 acquisitions

On October 17, 2018, we purchased 100 percent of the outstanding shares of Cladach Nua Teoranta (“Clada”), a Galway, Ireland designer and developer primarily focused on medical balloons and balloon catheters. Clada’s technologies are used in key applications such as angioplasty and the treatment of vascular disease. We acquired Clada for an aggregate purchase price of \$5,236, which included an earn-out liability of \$1,131. Based on the fair value of the assets acquired and the liabilities assumed, goodwill of \$3,776 and identifiable intangible assets of \$697 were recorded. The identifiable intangible assets consist primarily of \$58 of customer relationships (amortized over 6 years), \$70 of tradenames (amortized over 9 years), \$499 of technology (amortized over 7 years) and \$70 of non-compete agreements (amortized over 3 years). Goodwill associated with this acquisition is not tax deductible. This acquisition is being reported in our Advanced Technology Systems segment. As of July 31, 2019, the purchase price allocations remain preliminary as we complete our assessments of income taxes.

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 \$46,018, net of \$655 of cash. Based on the fair value of the assets acquired and the liabilities assumed, goodwill of \$22,775 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 July 31, 2019, the purchase price allocations are complete.

5. Inventories

At July 31, 2019 and October 31, 2018, inventories consisted of the following:

	July 31, 2019	October 31, 2018
Raw materials and component parts	\$ 101,203	\$ 112,823
Work-in-process	45,234	47,126
Finished goods	182,770	148,618
	329,207	308,567
Obsolescence and other reserves	(40,231)	(37,545)
LIFO reserve	(6,362)	(6,545)
	<u>\$ 282,614</u>	<u>\$ 264,477</u>

6. Goodwill and other intangible assets

Changes in the carrying amount of goodwill for the nine months ended July 31, 2019 by operating segment are as follows:

	Adhesive Dispensing Systems	Advanced Technology Systems	Industrial Coating Systems	Total
Balance at October 31, 2018	\$ 388,991	\$ 1,194,969	\$ 24,058	\$ 1,608,018
Acquisitions	—	9,168	—	9,168
Currency effect	(2,278)	(1,432)	—	(3,710)
Balance at July 31, 2019	\$ 386,713	\$ 1,202,705	\$ 24,058	\$ 1,613,476

Accumulated impairment losses, which were recorded in 2009, were \$232,789 at July 31, 2019 and October 31, 2018. 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:

	July 31, 2019		
	Carrying Amount	Accumulated Amortization	Net Book Value
Customer relationships	\$ 479,033	\$ 164,172	\$ 314,861
Patent/technology costs	153,557	67,997	85,560
Trade name	96,910	39,575	57,335
Non-compete agreements	11,522	10,254	1,268
Other	1,399	1,396	3
Total	\$ 742,421	\$ 283,394	\$ 459,027

	October 31, 2018		
	Carrying Amount	Accumulated Amortization	Net Book Value
Customer relationships	\$ 480,404	\$ 137,640	\$ 342,764
Patent/technology costs	153,602	59,845	93,757
Trade name	96,433	34,768	61,665
Non-compete agreements	11,469	9,919	1,550
Other	1,386	1,381	5
Total	\$ 743,294	\$ 243,553	\$ 499,741

Amortization expense for the three months ended July 31, 2019 and 2018 was \$13,903 and \$14,036, respectively. Amortization expense for the nine months ended July 31, 2019 and 2018 was \$41,665 and \$42,097, respectively.

7. Pension and other postretirement plans

The components of net periodic pension cost for the three and nine months ended July 31, 2019 and 2018 were:

	U.S.		International	
	2019	2018	2019	2018
<u>Three Months Ended</u>				
Service cost	\$ 3,740	\$ 3,314	\$ 484	\$ 505
Interest cost	4,736	3,704	416	413
Expected return on plan assets	(5,908)	(5,491)	(397)	(379)
Amortization of prior service credit	(16)	(5)	(76)	(80)
Amortization of net actuarial loss	1,938	2,353	424	527
Total benefit cost	<u>\$ 4,490</u>	<u>\$ 3,875</u>	<u>\$ 851</u>	<u>\$ 986</u>
	U.S.		International	
	2019	2018	2019	2018
<u>Nine Months Ended</u>				
Service cost	\$ 10,895	\$ 9,940	\$ 1,454	\$ 1,532
Interest cost	13,726	11,113	1,262	1,257
Expected return on plan assets	(17,506)	(16,472)	(1,204)	(1,152)
Amortization of prior service credit	(46)	(17)	(228)	(242)
Amortization of net actuarial loss	5,026	7,059	1,280	1,604
Total benefit cost	<u>\$ 12,095</u>	<u>\$ 11,623</u>	<u>\$ 2,564</u>	<u>\$ 2,999</u>

The components of other postretirement benefit cost for the three and nine months ended July 31, 2019 and 2018 were:

	U.S.		International	
	2019	2018	2019	2018
<u>Three Months Ended</u>				
Service cost	\$ 70	\$ 172	\$ 3	\$ 5
Interest cost	698	627	3	5
Amortization of prior service credit	(6)	(24)	—	—
Amortization of net actuarial (gain) loss	162	264	(5)	(5)
Total benefit cost	<u>\$ 924</u>	<u>\$ 1,039</u>	<u>\$ 1</u>	<u>\$ 5</u>
	U.S.		International	
	2019	2018	2019	2018
<u>Nine Months Ended</u>				
Service cost	\$ 401	\$ 528	\$ 13	\$ 15
Interest cost	2,195	1,922	15	15
Amortization of prior service credit	(20)	(74)	—	—
Amortization of net actuarial (gain) loss	467	809	(22)	(15)
Total benefit cost	<u>\$ 3,043</u>	<u>\$ 3,185</u>	<u>\$ 6</u>	<u>\$ 15</u>

The components of net periodic pension cost other than service cost are included in Other – net in our Consolidated Statements of Income.

8. 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 nine months ended July 31, 2019 were 21.4% and 22.8%, respectively. The effective tax rates for the three and nine months ended July 31, 2018 were 22.7% and 15.6%. The effective tax rate for the nine months ended July 31, 2019 was higher than the comparable prior year period primarily due to the enacted law commonly referred to as the U.S. Tax Cuts and Jobs Act ("the Act").

On December 22, 2017, the Act was enacted into law which significantly revised U.S. tax law. It reduced 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 was phased in, resulting in a U.S. statutory federal rate of 23.3% for our fiscal year ended October 31, 2018, and 21% for subsequent fiscal years. The statutory tax rate of 21.0% was applied to earnings in the current quarter.

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Subsequent to the enactment of the Act, the SEC staff issued SAB 118, which provided a measurement period of up to one year after the enactment date for companies to finalize the recognition of the income tax effects of the Act. As of January 31, 2019, our provisional accounting for the effects of the Act was complete. During the nine months ended July 31, 2019, and within the one year measurement period provided by SAB 118, a discrete tax expense of \$4,866 was recorded to the provisional amounts recognized in 2018 due to changes in interpretations and assumptions and the finalization of estimates. During the nine months ended July 31, 2018, we provisionally recorded a discrete tax benefit of \$22,089.

In March 2016, the FASB issued a new standard which simplifies the accounting for share-based payment transactions. This guidance required 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 included a discrete tax benefit of \$210 and \$3,227 for the three and nine months ended July 31, 2019, respectively. Our income tax provision for the three and nine months ended July 31, 2018 included a discrete tax benefit of \$544 and \$7,494, respectively.

During the three months ended July 31, 2019 and July 31, 2018, we recorded a favorable adjustment to unrecognized tax benefits of \$858 and \$1,041, respectively.

9. 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, 2018	\$ (57,042)	\$ (122,272)	\$ (179,314)
Amortization of prior service costs and net actuarial losses, net of tax of \$(1,670)	—	5,328	5,328
Foreign currency translation adjustments	227	—	227
Balance at July 31, 2019	<u>\$ (56,815)</u>	<u>\$ (116,944)</u>	<u>\$ (173,759)</u>

10. 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 are 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 \$2,525 and \$2,479 in the three months ended July 31, 2019 and 2018, respectively. Corresponding amounts for the nine months ended July 31, 2019 and 2018 were \$7,583 and \$7,550, respectively.

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The following table summarizes activity related to stock options for the nine months ended July 31, 2019:

	Number of Options	Weighted-Average Exercise Price Per Share	Aggregate Intrinsic Value	Weighted Average Remaining Term
Outstanding at October 31, 2018	1,885	\$ 85.33		
Granted	348	\$ 124.89		
Exercised	(289)	\$ 59.81		
Forfeited or expired	(21)	\$ 121.19		
Outstanding at July 31, 2019	1,923	\$ 95.92	\$ 87,950	6.7 years
Vested or expected to vest at July 31, 2019	1,907	\$ 95.68	\$ 87,671	6.7 years
Exercisable at July 31, 2019	1,030	\$ 78.98	\$ 64,554	5.4 years

As of July 31, 2019, there was \$10,551 of total unrecognized compensation cost related to unvested stock options. That cost is expected to be amortized over a weighted average period of approximately 1.4 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:

<u>Nine months ended</u>	<u>July 31, 2019</u>	<u>July 31, 2018</u>
Expected volatility	24.1%-24.5%	24.0%-26.7%
Expected dividend yield	1.04%	0.97%
Risk-free interest rate	2.84%-2.95%	2.09%-2.20%
Expected life of the option (in years)	5.3-6.2	5.4-6.2

The weighted-average expected volatility used to value the 2019 and 2018 options was 24.3% and 25.0%, 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 nine months ended July 31, 2019 and 2018 was \$31.74 and \$31.42, respectively.

The total intrinsic value of options exercised during the three months ended July 31, 2019 and 2018 was \$2,449 and \$2,971, respectively. The total intrinsic value of options exercised during the nine months ended July 31, 2019 and 2018 was \$21,770 and \$32,715, respectively.

Cash received from the exercise of stock options for the nine months ended July 31, 2019 and 2018 was \$17,275 and \$17,352, 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.

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The following table summarizes activity related to restricted shares during the nine months ended July 31, 2019:

	Number of Shares	Weighted-Average Grant Date Fair Value
Restricted shares at October 31, 2018	53	\$ 108.82
Granted	40	\$ 131.19
Vested	(26)	\$ 97.84
Restricted shares at July 31, 2019	67	\$ 126.30

As of July 31, 2019, there was \$5,505 of unrecognized compensation cost related to restricted shares. The cost is expected to be amortized over a weighted average period of 1.8 years. The amount charged to expense related to restricted shares during the three months ended July 31, 2019 and 2018 was \$898 and \$644, respectively. These amounts included common share dividends for the three months ended July 31, 2019 and 2018 of \$22 and \$17, respectively. For the nine months ended July 31, 2019 and 2018, the amounts charged to expense related to restricted shares were \$2,762 and \$2,035, respectively. These amounts included common share dividends for the nine months ended July 31, 2019 and 2018 of \$58 and \$51, respectively.

The following table summarizes activity related to restricted share units during the nine months ended July 31, 2019:

	Number of Units	Weighted-Average Grant Date Fair Value
Restricted share units at October 31, 2018	0	\$ —
Granted	8	\$ 126.83
Restricted share units at July 31, 2019	8	\$ 126.83

As of July 31, 2019, there was \$260 of remaining expense to be recognized related to outstanding restricted share units, which is expected to be recognized over a weighted average period of 0.3 years. The amount charged to expense related to restricted share units during each of the three months ended July 31, 2019 and 2018 was \$263 and \$253, respectively. For the nine months ended July 31, 2019 and 2018, the corresponding amounts were \$789 and \$758, 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 nine months ended July 31, 2019:

	Number of Shares	Weighted-Average Grant Date Fair Value
Outstanding at October 31, 2018	107	\$ 51.24
Dividend equivalents	1	\$ 128.35
Outstanding at July 31, 2019	108	\$ 51.87

The amount charged to expense related to director deferred compensation for the three months ended July 31, 2019 and 2018 was \$38 and \$31, respectively. For the nine months ended July 31, 2019 and 2018, the corresponding amounts were \$113 and \$92, 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.

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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 \$120.12 for 2019, \$123.45 for 2018, and \$103.75 and \$104.49 per share for 2017. During the three months ended July 31, 2019 and 2018, \$15 and \$942 was charged to expense, respectively. For the nine months ended July 31, 2019 and 2018, the corresponding amounts were \$1,611 and \$5,928, respectively. The cumulative amount recorded in shareholders' equity at July 31, 2019 was \$9,080.

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 on our common shares. Expense related to dividends paid under this plan for the three months ended July 31, 2019 and 2018 was \$74 and \$67, respectively. For the nine months ended July 31, 2019 and 2018, the corresponding amounts were \$219 and \$201, respectively.

11. 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 nine months ended July 31, 2019 and 2018:

	July 31, 2019	July 31, 2018
Beginning balance at October 31	\$ 12,195	\$ 13,377
Accruals for warranties	7,628	8,440
Warranty payments	(7,837)	(9,358)
Currency effect	(78)	13
Ending balance	<u>\$ 11,908</u>	<u>\$ 12,472</u>

12. 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 Statements 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, 2018.

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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					
July 31, 2019					
Net external sales	\$ 248,983	\$ 253,098	\$ 57,665	\$ —	\$ 559,746
Operating profit (loss)	77,689	53,562	11,122	(12,097)	130,276
Three months ended					
July 31, 2018					
Net external sales	\$ 244,728	\$ 266,595	\$ 69,920	\$ —	\$ 581,243
Operating profit (loss) ⁽¹⁾	69,268	67,466	15,633	(14,825)	137,542
Nine months ended					
July 31, 2019					
Net external sales	\$ 697,223	\$ 736,850	\$ 174,702	\$ —	\$ 1,608,775
Operating profit (loss)	196,594	150,882	33,108	(37,131)	343,453
Nine months ended					
July 31, 2018					
Net external sales	\$ 704,367	\$ 789,135	\$ 191,871	\$ —	\$ 1,685,373
Operating profit (loss) ⁽¹⁾	193,595	193,649	38,228	(39,688)	385,784

(1) Results for the three and nine months ended July 31, 2018 have been revised to reflect the retrospective adoption of Accounting Standards Update No. 2017-07, Compensation — Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Cost ("ASU 2017-07"). Refer to Note 3 for details.

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

	Three Months Ended		Nine Months Ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
Total profit for reportable segments	\$ 130,276	\$ 137,542	\$ 343,453	\$ 385,784
Interest expense	(11,500)	(13,765)	(36,238)	(37,210)
Interest and investment income	511	356	1,153	865
Other-net	210	(1,438)	(4,546)	(5,107)
Income before income taxes	\$ 119,497	\$ 122,695	\$ 303,822	\$ 344,332

We have significant sales in the following geographic regions:

	Three Months Ended		Nine Months Ended	
	July 31, 2019	July 31, 2018	July 31, 2019	July 31, 2018
United States	\$ 190,460	\$ 191,512	\$ 551,510	\$ 536,164
Americas	47,040	38,911	123,159	112,149
Europe	143,449	150,710	425,650	447,384
Japan	30,488	28,367	89,566	127,266
Asia Pacific	148,309	171,743	418,890	462,410
Total net external sales	\$ 559,746	\$ 581,243	\$ 1,608,775	\$ 1,685,373

13. Fair value measurements

The inputs to the valuation techniques used to measure fair value are classified into the following categories:

Level 1: Quoted market prices in active markets for identical assets or liabilities.

Level 2: Observable market based inputs or unobservable inputs that are corroborated by market data.

Level 3: Unobservable inputs that are not corroborated by market data.

The following tables present the classification of our assets and liabilities measured at fair value on a recurring basis:

July 31, 2019	Total	Level 1	Level 2	Level 3
Assets:				
Foreign currency forward contracts (a)	\$ 4,254	\$ —	\$ 4,254	\$ —
Total assets at fair value	<u>\$ 4,254</u>	<u>\$ —</u>	<u>\$ 4,254</u>	<u>\$ —</u>
Liabilities:				
Deferred compensation plans (b)	\$ 11,610	\$ —	\$ 11,610	\$ —
Foreign currency forward contracts (a)	3,197	—	3,197	—
Total liabilities at fair value	<u>\$ 14,807</u>	<u>\$ —</u>	<u>\$ 14,807</u>	<u>\$ —</u>
July 31, 2018				
Assets:				
Foreign currency forward contracts (a)	\$ 2,160	\$ —	\$ 2,160	\$ —
Total assets at fair value	<u>\$ 2,160</u>	<u>\$ —</u>	<u>\$ 2,160</u>	<u>\$ —</u>
Liabilities:				
Deferred compensation plans (b)	\$ 11,138	\$ —	\$ 11,138	\$ —
Foreign currency forward contracts (a)	2,399	—	2,399	—
Total liabilities at fair value	<u>\$ 13,537</u>	<u>\$ —</u>	<u>\$ 13,537</u>	<u>\$ —</u>

- (a) We enter into foreign currency forward contracts to reduce the risk of foreign currency exposures resulting from receivables, payables, intercompany receivables, intercompany payables and loans denominated in foreign currencies. Foreign exchange contracts are valued using market exchange rates. These foreign exchange contracts are not designated as hedges.
- (b) Executive officers and other highly compensated employees may defer up to 100 percent of their salary and annual cash incentive compensation and for executive officers, up to 90 percent of their long-term incentive compensation, into various non-qualified deferred compensation plans. Deferrals can be allocated to various market performance measurement funds. Changes in the value of compensation deferred under these plans are recognized each period based on the fair value of the underlying measurement funds.

The carrying amounts and fair values of financial instruments, other than cash and cash equivalents, receivables, and accounts payable, are shown in the table below. The carrying values of cash and cash equivalents, receivables and accounts payable approximate fair value due to the short-term nature of these instruments.

	2019	
	Carrying Amount	Fair Value
Long-term debt (including current portion)	1,348,606	1,371,640

We used the following methods and assumptions in estimating the fair value of financial instruments:

- Long-term debt is valued by discounting future cash flows at currently available rates for borrowing arrangements with similar terms and conditions, which are considered to be Level 2 inputs under the fair value hierarchy.

14. Derivative financial instruments

We operate internationally and enter into intercompany transactions denominated in foreign currencies. Consequently, we are subject to market risk arising from exchange rate movements between the dates foreign currency transactions occur and the dates they are settled. We regularly use foreign currency forward contracts to reduce our risks related to most of these transactions. These contracts usually have maturities of 90 days or less and generally require us to exchange foreign currencies for U.S. dollars at maturity, at rates stated in the contracts. These contracts are not designated as hedging instruments under U.S. GAAP. Accordingly, the changes in the fair value of the foreign currency forward contracts are recognized in each accounting period in "Other – net" on the Consolidated Statements of Income together with the transaction gain or loss from the related balance sheet position. For the three months ended July 31, 2019, we recognized net gains of \$975 on foreign currency forward contracts and net gains of \$407 from the change in fair value of balance sheet positions. For the three months ended July 31, 2018, we recognized gains of \$2,042 on foreign currency forward contracts and losses of \$1,152 from the change in fair value of balance sheet positions. For the nine months ended July 31, 2019, we recognized gains of \$769 on foreign currency forward contracts and gains of \$267 from the change in fair value of balance sheet positions. For the nine months ended July 31, 2018, we recognized losses of \$529 on foreign currency forward contracts and gains of \$451 from the change in fair value of balance sheet positions.

The following table summarizes, by currency, the foreign currency forward contracts outstanding at July 31, 2019 and 2018:

July 31, 2019 contract amounts:	Notional Amounts	
	Sell	Buy
Euro	\$ 219,910	\$ 90,043
British pound	20,542	45,955
Japanese yen	32,560	48,670
Australian dollar	350	7,683
Hong Kong dollar	1,209	136,818
Singapore dollar	782	15,449
Others	3,460	63,388
Total	<u>\$ 278,813</u>	<u>\$ 408,006</u>

July 31, 2018 contract amounts:	Notional Amounts	
	Sell	Buy
Euro	\$ 239,642	\$ 201,296
British pound	41,649	70,644
Japanese yen	22,872	43,591
Australian dollar	185	7,729
Hong Kong dollar	453	118,507
Singapore dollar	613	12,820
Others	3,759	53,868
Total	<u>\$ 309,173</u>	<u>\$ 508,455</u>

We are exposed to credit-related losses in the event of nonperformance by counterparties to financial instruments. These financial instruments include cash deposits and foreign currency forward contracts. We periodically monitor the credit ratings of these counterparties in order to minimize our exposure. Our customers represent a wide variety of industries and geographic regions. For the nine months ended July 31, 2019 and 2018, there were no significant concentrations of credit risk.

15. Long-term debt

A summary of long-term debt is as follows:

	July 31, 2019	October 31, 2018
Revolving credit agreement, due 2024	\$ —	\$ 52,200
Senior notes, due 2020-2025	140,800	156,700
Senior notes, due 2020-2027	92,857	100,000
Senior notes, due 2023-2030	350,000	350,000
Term loan, due 2020-2024	605,000	605,000
Euro loan, due 2021	127,396	16,967
Private shelf facility, due 2020	36,111	36,111
Development loans, due 2019-2026	985	1,086
	<u>1,353,149</u>	<u>1,318,064</u>
Less current maturities	168,734	28,734
Less unamortized debt issuance costs	4,543	3,973
Long-term maturities	<u>\$ 1,179,872</u>	<u>\$ 1,285,357</u>

In April 2019, we amended, restated and extended the term of our existing \$605,000 term loan facility with a group of banks. The Term Loan Agreement provides for the following term loans in three tranches: \$100,000 due in March 2020, \$200,000 due in September 2022, and \$305,000 due in March 2024. The weighted average interest rate for borrowings under this agreement was 2.98% at July 31, 2019. We were in compliance with all covenants at July 31, 2019.

In April 2019, we entered into a \$850,000 unsecured, multicurrency credit facility with a group of banks, which amended, restated and extended our existing syndicated revolving credit agreement that was scheduled to expire in February 2020. This facility has a five-year term and includes a \$75,000 subfacility for swing-line loans. It expires in April 2024. At July 31, 2019, we had no balances outstanding under this facility, compared to \$52,200 outstanding at October 31, 2018. We were in compliance with all covenants at July 31, 2019, and the amount we could borrow under the facility would not have been limited by any debt covenants.

In October 2018, we entered into a €150,000 agreement with Bank of America Merrill Lynch International Limited. The interest rate is variable based on the EUR LIBOR rate. The weighted average interest rate at July 31, 2019 was 1.00%. At July 31, 2019, the balance outstanding was €115,000 (\$127,396). We were in compliance with all covenants at July 31, 2019.

In June 2018, we entered into a Note Purchase Agreement with a group of insurance companies under which we sold \$350,000 of Senior Notes to the insurance companies and their affiliates. The notes start to mature in June 2023 and mature through June 2030 and bear interest at fixed rates between 3.71% and 4.17%. We used the proceeds from the sale of the notes to repay approximately \$315,000 of the outstanding balance under our existing syndicated revolving credit facility at that time, and the remainder for general corporate purposes. We were in compliance with all covenants at July 31, 2019.

We entered into a \$150,000 three-year Note Purchase and Private Shelf agreement with New York Life Investment Management LLC in 2011. In 2015, the amount of the facility was increased to \$180,000, and in 2016 it was increased to \$200,000. Notes issued under the agreement may have a maturity of up to 12 years, with an average life of up to 10 years, and are unsecured. At July 31, 2019 and October 31, 2018, there was \$36,111 outstanding under this facility. Existing notes mature between January 2020 and September 2020. The interest rate on each borrowing is fixed based on the market rate at the borrowing date or is variable based upon the LIBOR rate. At July 31, 2019, the amount outstanding under this facility bears interest at fixed rates between 2.21% and 2.56%. This agreement contains customary events of default and covenants related to limitations on indebtedness and the maintenance of certain financial ratios. We were in compliance with all covenants at July 31, 2019, and the amount we could borrow would not have been limited by any debt covenants.

In 2012, we entered into a Note Purchase Agreement with a group of insurance companies under which we sold \$200,000 of Senior Notes. At July 31, 2019 and October 31, 2018, \$140,800 and \$156,700, respectively, was outstanding under this agreement. Existing notes mature between July 2020 and July 2025 and bear interest at fixed rates between 2.62% and 3.13%. We were in compliance with all covenants at July 31, 2019.

In July 2015, we entered into a Note Purchase Agreement under which \$100,000 of Senior Unsecured Notes were purchased primarily by a group of insurance companies. At July 31, 2019 and October 31, 2018, \$92,857 and \$100,000, respectively, was outstanding under this agreement. Existing notes mature between July 2020 and July 2027 and bear interest at fixed rates of 2.89% and 3.19%. We were in compliance with all covenants at July 31, 2019.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is Management's discussion and analysis of certain significant factors affecting our financial condition and results of operations for the periods included in the accompanying condensed consolidated financial statements.

Overview

Founded in 1954, Nordson Corporation delivers precision technology solutions to help customers succeed worldwide. We engineer, manufacture and market differentiated products and systems used for precision dispensing, applying and controlling of adhesives, coatings, sealants, biomaterials, polymers, plastics and other materials; fluid management; test and inspection; and UV curing and plasma surface treatment. These products are supported with extensive application expertise and direct global sales and service. We serve a wide variety of consumer non-durable, consumer durable and technology end-markets including packaging, nonwovens, electronics, medical, appliances, energy, transportation, building and construction, and general product assembly and finishing. We have approximately 7,600 employees and direct operations in more than 35 countries.

On June 14, 2019, the Company announced that Sundaram Nagarajan had been appointed President and Chief Executive Officer of the Company effective August 1, 2019. Mr. Nagarajan succeed Michael F. Hilton, who previously announced his plans to retire. On Mr. Nagarajan's start date, Mr. Hilton became Senior Advisor to the Company and will remain on the Company's board of directors until he retires on December 31, 2019.

Critical Accounting Policies and Estimates

The preparation and fair presentation of the consolidated unaudited interim financial statements and accompanying notes included in this report are the responsibility of management. The financial statements and footnotes have been prepared in accordance with U.S. generally accepted accounting principles for interim financial statements and contain certain amounts that were based upon management's best estimates, judgments and assumptions that were believed to be reasonable under the circumstances. On an ongoing basis, we evaluate the accounting policies and estimates used to prepare our financial statements. Estimates are based on historical experience, judgments and assumptions believed to be reasonable under current facts and circumstances. Actual amounts and results could differ from these estimates used by management.

A comprehensive discussion of the Company's critical accounting policies and management estimates and significant accounting policies followed in the preparation of the financial statements is included in Item 7 of our Annual Report on Form 10-K for the year ended October 31, 2018. Other than the adoption of the new revenue recognition standard as described in Note 2, there have been no significant changes in critical accounting policies, management estimates or accounting policies followed since the year ended October 31, 2018.

Results of Operations

Sales

Sales – Worldwide sales for the three months ended July 31, 2019 were \$559,746, a decrease of 3.7% from sales of \$581,243 for the comparable period of 2018. Sales volume decreased by 2.2% and unfavorable currency effects decreased sales by 1.5%. Growth in the quarter related to the first year effect of the Clada and Optical acquisitions was not significant.

Sales of the Adhesive Dispensing Systems segment for the three months ended July 31, 2019 were \$248,983 compared to \$244,728 in the comparable period of 2018, an increase of \$4,255, or 1.7%. The increase was due to organic sales volume growth of 3.7%, offset by unfavorable currency effects that decreased sales by

2.0%. Within this segment, sales volume increased in all geographic regions. Organic sales volume growth was solid across most all product lines.

Sales of the Advanced Technology Systems segment for the three months ended July 31, 2019 were \$253,098 compared to \$266,595 in the comparable period of 2018, a decrease of \$13,497, or 5.1%. The decrease was due to a sales volume decrease of 3.9% and unfavorable currency effects that decreased sales by 1.2%. The sales volume decrease consisted primarily of organic volume. Growth in the quarter related to the first year effect of acquisitions was not significant. Within this segment, sales volume increased in all regions except the Asia Pacific region. Growth in product lines serving non-electronics end markets was offset by softness in our dispensing product lines serving electronics end markets.

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Sales of the Industrial Coating Systems segment for the three months ended July 31, 2019 were \$57,665 compared to \$69,920 in the comparable period of 2018, a decrease of \$12,255, or 17.5%. The decrease was due to an organic sales volume decrease of 16.7% and unfavorable currency effects that decreased sales by 0.8%. Within this segment, sales volume increased in the Americas region and was offset by weakness in all other regions. Organic sales volume decreased in all product lines during the quarter.

Sales outside the United States accounted for 66.0% of our sales in the three months ended July 31, 2019 compared to 67.1% for the comparable period of 2018. On a geographic basis, sales in the United States were \$190,460, a decrease of 0.5% from 2018. The 0.5% decrease in sales consisted primarily of organic volume. In the Americas region, sales were \$47,040 an increase of 20.9% from the comparable period of 2018, with sales volume increasing 21.5%, consisting primarily of organic volume, offset by unfavorable currency effects of 0.6%. Sales in Europe were \$143,449, a decrease of 4.8% from the comparable period of 2018, consisting of unfavorable currency effects of 3.8% and a sales volume decrease of 1.0%. Sales in Japan were \$30,488, an increase of 7.5% from the comparable period of 2018, with organic sales volume increasing 5.9% and favorable currency effects of 1.6%. Sales in the Asia Pacific region were \$148,309, a decrease of 13.6% from the comparable period of 2018, with a decrease in organic sales volume of 11.7% and unfavorable currency effects of 1.9%.

Worldwide sales for the nine months ended July 31, 2019 were \$1,608,775, a 4.5% decrease from sales of \$1,685,373 for the comparable period of 2018. Sales volume decreased 2.2%, consisting of a 2.6% decrease in organic volume, offset by a 0.4% increase from the first year effect of the Sonoscan, Clada, and Optical acquisitions. Unfavorable currency effects decreased sales by 2.3%.

Sales of the Adhesive Dispensing Systems segment for the nine months ended July 31, 2019 were \$697,223 compared to \$704,367 in the comparable period of 2018, a decrease of \$7,144, or 1.0%. The decrease was due to unfavorable currency effects of 3.2%, offset by organic sales volume growth of 2.2%. Within this segment, sales volume increased in all regions except Europe. Growth in product lines serving packaging, product assembly, and polymer processing end markets was offset by softness in product lines serving nonwoven end markets.

Sales of the Advanced Technology Systems segment for the nine months ended July 31, 2019 were \$736,850 compared to \$789,135 in the comparable period of 2018, a decrease of \$52,285, or 6.6%. The decrease was due to unfavorable currency effects of 1.6% and a sales volume decrease of 5.0%. The sales volume decrease consisted of 5.9% in organic volume, offset by a 0.9% increase from the first year effect of acquisitions. Within this segment, sales volume increased in the United States, Americas, and Europe regions, and was offset by decreases in the Japan and Asia Pacific regions. Growth in our fluid management product lines serving industrial and medical end markets was offset by lower demand in our dispensing product lines serving electronics end markets.

Sales of the Industrial Coating Systems segment for the nine months ended July 31, 2019 were \$174,702 compared to \$191,871 in the comparable period of 2018, a decrease of \$17,169, or 8.9%. The decrease was due to a sales volume decrease of 7.2% and unfavorable currency effects that decreased sales by 1.7%. Within this segment, sales volume increased in the Americas and was offset by decreases in all other regions. Softness in most all product lines contributed to the decrease in sales volume.

Sales outside the United States accounted for 65.7% of sales in the nine months ended July 31, 2019 compared to 68.2% in the comparable period of 2018. On a geographic basis, sales in the United States were \$551,510, an increase of 2.9% from 2018. The increase in sales volume consisted of 2.7% from organic volume and 0.2% growth from acquisitions. In the Americas region, sales were \$123,159, an increase of 9.8% from 2018, with sales volume increasing 11.7%, offset by unfavorable currency effects of 1.9%. The increase in sales volume consisted of 11.6% from organic volume and 0.1% from acquisitions. Sales in Europe were \$425,650, a decrease of 4.9% from 2018, with sales volume increasing 0.6%, offset by unfavorable currency effects of 5.5%. The increase in sales volume consisted of 0.1% from organic volume and 0.5% from acquisitions. Sales in Japan were \$89,566, a decrease of 29.6% from 2018, with sales volume decreasing 29.2% and unfavorable currency effects of 0.4%. The decrease in sales volume consisted of 30.1% from organic volume and was offset by a 0.9% increase from acquisitions. Sales in the Asia Pacific region were \$418,890, a decrease of 9.4% from 2018, with sale volume decreasing 6.9% and unfavorable currency effects of 2.5%. The decrease in sales volume consisted of a 7.5% decrease from organic volume, offset by a 0.6% increase from acquisitions.

Operating profit – Cost of sales for the three months ended July 31, 2019 were \$257,123, compared to \$260,767 in the comparable period of 2018. Gross profit, expressed as a percentage of sales, decreased to 54.1% for this same period from 55.1% in 2018. Of the 1.0 percentage point decline in gross margin, unfavorable currency effects contributed 0.5 percentage points and unfavorable product mix contributed 0.5 percentage points.

Cost of sales for the nine months ended July 31, 2019 were \$735,647, compared to \$756,909 in the comparable period of 2018. Gross profit, expressed as a percentage of sales, decreased to 54.3% for this same period from 55.1% in 2018. Of the 0.8 percentage point decline in gross margin, unfavorable currency effects contributed 0.5 percentage points and unfavorable product mix contributed 0.3 percentage points.

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Selling and administrative expenses for the three months ended July 31, 2019 were \$172,347, compared to \$182,934 in the comparable period of 2018. The 5.8 percent decrease includes 4.3 percent in support of base business, 1.3 percent due to currency effects and 0.2 percent due to lower severance and restructuring costs in the current period.

Selling and administrative expenses for the nine months ended July 31, 2019 were \$529,675, compared to \$542,680 for the comparable period of 2018. The 2.4 percent decrease includes 2.0 percent due to currency effects and 0.4 percent due to lower severance and restructuring costs in the current period.

Selling and administrative expenses as a percentage of sales decreased to 30.8% for the three months ended July 31, 2019 compared to 31.5% in 2018. The 0.7 percentage point improvement is due to lower base business costs.

Selling and administrative expenses as a percentage of sales increased to 32.9% for the nine months ended July 31, 2019 compared to 32.2% in 2018. Of the 0.7 percentage point increase, 0.7 percentage points was due to higher base business costs and 0.1 percentage points was due to currency translation effects. This increase was offset by 0.1 percentage points due to lower severance and restructuring costs in the current period.

During the nine months ended July 31, 2019, we recognized severance and restructuring costs of \$2,648, which was primarily due to a restructuring initiative to consolidate certain facilities in the U.S. within our Adhesives Dispensing Systems segment. Additional costs related to this initiative are not expected to be material in future periods. All severance and restructuring costs are included in Selling and administrative expenses in the Consolidated Statements of Income.

Operating capacity for each of our segments can support fluctuations in order activity without significant changes in operating costs. Also, currency translation affects reported operating margins. Operating margins for each segment were unfavorably impacted by a stronger dollar primarily against the Euro and British Pound during the nine months ended July 31, 2019 as compared to the same period in 2018.

Operating profit as a percentage of sales decreased to 23.3% for the three months ended July 31, 2019 compared to 23.7% in 2018. Of the 0.4 percentage point decrease, 0.5 percentage points were due to unfavorable currency effects and 0.5 percentage points were due to unfavorable product mix. These were offset by 0.6 percentage points due to favorable leverage of our selling and administrative expenses in the current period.

Operating profit as a percentage of sales decreased to 21.3% for the nine months ended July 31, 2019 compared to 22.9% in 2018. Of the 1.6 percentage point decrease, unfavorable currency effects contributed 0.7 percentage points, unfavorable leverage of our selling and administrative expenses contributed 0.6 percentage points, and unfavorable product mix contributed 0.4 percentage points. These were offset by a 0.1 percentage point improvement due to lower severance and restructuring costs.

For the Adhesive Dispensing Systems segment, operating profit as a percentage of sales increased to 31.2% for the three months ended July 31, 2019 compared to 28.3% in 2018. Of the 2.9 percentage point increase in operating margin, 1.5 percentage points were due to favorable product mix, 1.4 percentage points were due to favorable leverage of our selling and administrative expenses, and 0.4 percentage points were due to lower severance and restructuring costs. These increases were offset by 0.4 percentage points due to unfavorable currency translation effects.

For the Adhesive Dispensing Systems segment, operating profit as a percentage of sales increased to 28.2% for the nine months ended July 31, 2019 compared to 27.5% for the comparable period of 2018. Of the 0.7 percentage point increase in operating margin, 0.9 percentage points were due to favorable product mix, 0.3 percentage points were due to lower severance and restructuring costs, and 0.2 percentage points were due to favorable leverage of selling and administrative expenses. These increases were offset by 0.7 percentage points due to unfavorable currency effects.

For the Advanced Technology Systems segment, operating profit as a percentage of sales decreased to 21.2% for the three months ended July 31, 2019 compared to 25.3% in 2018. Of the 4.1 percentage point decline in operating margin, unfavorable leverage of our selling and administrative expenses contributed 3.3 percentage points, unfavorable currency effects contributed 0.4 percentage points, severance and restructuring costs contributed 0.3 percentage points and unfavorable product mix contributed 0.1 percentage points.

For the Advanced Technology Systems segment, operating profit as a percentage of sales decreased to 20.5% for the nine months ended July 31, 2019 compared to 24.5% for the comparable period of 2018. Of the 4.0 percentage point decrease in operating margin, unfavorable product mix and volume leverage contributed 3.9 percentage points, unfavorable currency effects contributed 0.4 percentage points and severance and restructuring costs contributed 0.1 percentage points. These decreases were offset by favorable leverage of our selling and administrative expenses of 0.4 percentage points.

For the Industrial Coating Systems segment, operating profit as a percentage of sales decreased to 19.3% for the three months ended July 31, 2019 compared to 22.4% in 2018. Of the 3.1 percentage point decrease in operating margin, unfavorable leverage of our selling and administrative expenses contributed 3.9 percentage points and unfavorable currency effects contributed 0.3 percentage points. These decreases were offset by 1.1 percentage points due to favorable product mix.

For the Industrial Coating Systems segment, operating profit as a percentage of sales decreased to 19.0% for the nine months ended July 31, 2019 compared to 19.9% in 2018. Of the 0.9 percentage point decrease in operating margin, unfavorable leverage of selling and administrative expenses contributed 1.9 percentage points and unfavorable currency effects contributed 0.3 percentage points. These decreases were offset by 1.3 percentage points due to favorable product mix.

Interest and other income (expense) - Interest expense for the three months ended July 31, 2019 was \$11,500, down from \$13,765 for the comparable period of 2018. Interest expense for the nine months ended July 31, 2019 was \$36,238, down from \$37,210 for the comparable period of 2018. These decreases were primarily due to a reduction in interest rates.

Other income was \$210 for the three months ended July 31, 2019, compared to other expense of \$1,438 for the comparable period of 2018. Significant items included in the current quarter's other income were \$1,382 of foreign currency gains and \$2,024 of pension costs related to the adoption of a new accounting standard. Included in the prior year quarter's other expense were pension costs related to the adoption of a new accounting standard of \$1,966 and foreign currency gains of \$890.

Other expense was \$4,546 for the nine months ended July 31, 2019, compared to \$5,107 for the comparable period of 2018. Included in the current year's other expense were \$5,004 of pension costs related to the adoption of a new accounting standard and \$1,036 of foreign currency gains. Included in the prior year's other expense were \$5,780 of pension costs related to the adoption of a new accounting standard and a non-recurring gain of \$2,512.

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. Judgment is involved regarding the application of global income tax laws and regulations and when projecting the jurisdictional mix of income. We have considered several factors in determining the probability of realizing deferred income tax assets which include forecasted operating earnings, available tax planning strategies and the time period over which the temporary differences will reverse. We review our tax positions on a regular basis and adjust the balances as new information becomes available. The effective tax rate for the three and nine months ended July 31, 2019 was 21.4% and 22.8%, respectively. The effective tax rate for the three and nine months ended July 31, 2018 was 22.7% and 15.6%, respectively. The effective tax rate for the nine months ended July 31, 2019 was higher than the comparable prior year period primarily due to the enacted law commonly referred to as the U.S. Tax Cuts and Jobs Act ("the Act").

On December 22, 2017, the Act was enacted into law which significantly revised U.S. tax law. It reduced 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 was phased in, resulting in a U.S. statutory federal rate of 23.3% for our fiscal year ended October 31, 2018, and 21% for subsequent fiscal years. The statutory tax rate of 21% was applied to earnings in the current year.

Subsequent to the enactment of the Act, the SEC staff issued SAB 118, which provides a measurement period of up to one year after the enactment date for companies to finalize the recognition of the income tax effects of the Act. As of January 31, 2019, our provisional accounting for the effects of the Act was complete. During the nine months ended July 31, 2019, and within the one year measurement period provided by SAB 118, a discrete tax expense of \$4,866 was recorded to the provisional amounts recognized in 2018 due to changes in interpretations and assumptions and the finalization of estimates. During the nine months ended July 31, 2018, we provisionally recorded a discrete tax benefit of \$22,089.

In March 2016, the FASB issued a new standard which simplifies the accounting for share-based payment transactions. This guidance required 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 nine months ended July 31, 2019 includes a discrete tax benefit of \$210 and \$3,227, respectively. Our income tax provision for the three and nine months ended July 31, 2018 includes a discrete tax benefit of \$544 and \$7,494, respectively.

During the three months ended July 31, 2019 and July 31, 2018, we recorded a favorable adjustment to unrecognized tax benefits of \$858 and \$1,041, respectively.

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Net income – Net income for the three months ended July 31, 2019 was \$93,928, or \$1.62 per diluted share, compared to \$94,884, or \$1.61 per diluted share, in the same period of 2018. This represents a 1.0% decrease in net income and a 0.6% increase in diluted earnings per share. For the nine months ended July 31, 2019, net income was \$234,418, or \$4.03 per diluted share, compared to \$290,674, or \$4.93 per diluted share, in the same period of 2018. This represents a 19.4% decrease in net income and a 18.3% decrease in diluted earnings per share.

Foreign Currency Effects

In the aggregate, average exchange rates for 2019 used to translate international sales and operating results into U.S. dollars were unfavorable compared with average exchange rates existing during 2018. It is not possible to precisely measure the impact on operating results arising from foreign currency exchange rate changes, because of changes in selling prices, sales volume, product mix and cost structure in each country in which we operate. However, if transactions for the three months ended July 31, 2019 were translated at exchange rates in effect during the same period of 2018, sales would have been approximately \$8,738 higher while third-party costs and expenses would have been approximately \$3,667 higher. If transactions for the nine months ended July 31, 2019 were translated at exchange rates in effect during the same period of 2018, sales would have been approximately \$38,547 higher while third-party costs and expenses would have been approximately \$20,354 higher.

Financial Condition

Liquidity and Capital Resources

During the nine months ended July 31, 2019, cash and cash equivalents increased \$52,167. Cash provided by operations during this period was \$236,431, compared to \$342,927 for the nine months ended July 31, 2018. Cash of \$332,448 was generated from net income adjusted for non-cash income and expenses (consisting of depreciation and amortization, non-cash stock compensation, deferred income taxes, other non-cash expense and loss on sale of property, plant and equipment), compared to \$342,442 for the comparable period of 2018. Changes in operating assets and liabilities reduced cash by \$96,017 in the nine months ended July 31, 2019, compared to increasing cash by \$485 in the comparable period of 2018. The primary reasons for this decrease were lower accrued liabilities, higher inventory levels to meet anticipated demand and higher accounts receivable due to timing of shipments.

Cash used in investing activities was \$57,919 for the nine months ended July 31, 2019, compared to \$91,037 in the comparable period of 2018. During the nine months ended July 31, 2019, cash of \$12,110 was used for the Optical acquisition while cash of \$45,364 was used for the Sonoscan acquisition during the nine months ended July 31, 2018. Capital expenditures in the nine months ended July 31, 2019 were \$46,002, compared to \$45,972 in the comparable period of 2018.

Cash used in financing activities was \$129,607 for the nine months ended July 31, 2019, compared to \$73,464 used in the comparable period of the prior year. Net proceeds of long-term debt and short-term borrowings produced \$36,009 during the nine months ended July 31, 2019, compared to net repayments of long-term debt and short-term borrowings of \$29,403 in the prior year. Cash of \$118,124 was used for the purchase of treasury shares and cash of \$60,325 was used for dividend payments in the current year period, compared to \$5,063 and \$52,109, respectively, in the comparable period of 2018. Issuance of common shares related to employee benefit plans generated \$17,275 during the nine months ended July 31, 2019 compared to \$17,352 in the comparable period of 2018.

The following is a summary of significant changes in balance sheet captions from October 31, 2018 to July 31, 2019. The decrease of \$36,176 in accrued liabilities was primarily due to incentive compensation paid out in the first quarter of 2019. Current maturities of long-term debt increased \$140,000 due to a \$15,000 reclass of our Private Placement Notes, a \$25,000 reclass of our notes issued under our agreement with New York Life and a \$100,000 reclass of our Term Loan Agreement with PNC Bank from long term maturities as their maturity dates are within the next 12 months. Long term debt decreased \$105,485 primarily due to the reclasses to current maturities noted above, offset by net borrowings of our long-term debt during the nine months ended July 31, 2019.

In December 2014, the board of directors authorized a \$300,000 common share repurchase program. This program replaced the \$200,000 program approved by the board in August 2013. In August 2015, the board of directors authorized the repurchase of up to an additional \$200,000 of the Company's common shares. In August 2018, the board of directors authorized the repurchase of an additional \$500,000 of the Company's common shares. Approximately \$487,628 of the total \$1,000,000 authorized remained available for share repurchases at July 31, 2019. Uses for repurchased shares include the funding of benefit programs including stock options, restricted stock and 401(k) matching. Shares purchased are treated as treasury shares until used for such purposes. The repurchase program is being funded using cash from operations and proceeds from borrowings under our credit facilities.

Contractual Obligations

In April 2019, we amended, restated and extended the term of our existing \$605,000 term loan facility with a group of banks. The Term Loan Agreement provides for the following term loans in three tranches: \$100,000 due in March 2020, \$200,000 due in September 2022, and \$305,000 due in March 2024. The weighted average interest rate for borrowings under this agreement was 2.98% at July 31, 2019. We were in compliance with all covenants at July 31, 2019.

In April 2019, we entered into a \$850,000 unsecured, multicurrency credit facility with a group of banks, which amended, restated and extended our existing syndicated revolving credit agreement that was scheduled to expire in February 2020. This facility has a five-year term and includes a \$75,000 subfacility for swing-line loans. It expires in April 2024. At July 31, 2019, we had no balances outstanding under this facility, compared to \$52,200 outstanding at October 31, 2018. We were in compliance with all covenants at July 31, 2019, and the amount we could borrow under the facility would not have been limited by any debt covenants.

In October 2018, we entered into a €150,000 agreement with Bank of America Merrill Lynch International Limited. The interest rate is variable based on the EUR LIBOR rate. The weighted average interest rate at July 31, 2019 was 1.00%. At July 31, 2019, the balance outstanding was €115,000 (\$127,396). We were in compliance with all covenants at July 31, 2019.

In June 2018, we entered into a Note Purchase Agreement with a group of insurance companies under which we sold \$350,000 of Senior Notes to the insurance companies and their affiliates. The notes start to mature in June 2023 and mature through June 2030 and bear interest at fixed rates between 3.71% and 4.17%. We used the proceeds from the sale of the notes to repay approximately \$315,000 of the outstanding balance under our existing syndicated revolving credit facility at that time, and the remainder for general corporate purposes. We were in compliance with all covenants at July 31, 2019.

We entered into a \$150,000 three-year Note Purchase and Private Shelf agreement with New York Life Investment Management LLC in 2011. In 2015, the amount of the facility was increased to \$180,000, and in 2016 it was increased to \$200,000. Notes issued under the agreement may have a maturity of up to 12 years, with an average life of up to 10 years, and are unsecured. At July 31, 2019 and October 31, 2018, there was \$36,111 outstanding under this facility. Existing notes mature between January 2020 and September 2020. The interest rate on each borrowing is fixed based on the market rate at the borrowing date or is variable based upon the LIBOR rate. At July 31, 2019, the amounts outstanding under this facility bear interest at fixed rates between 2.21% and 2.56%. This agreement contains customary events of default and covenants related to limitations on indebtedness and the maintenance of certain financial ratios. We were in compliance with all covenants at July 31, 2019, and the amount we could borrow would not have been limited by any debt covenants.

In 2012, we entered into a Note Purchase Agreement with a group of insurance companies under which we sold \$200,000 of Senior Notes. At July 31, 2019 and October 31, 2018, \$140,800 and \$156,700, respectively, was outstanding under this agreement. Existing notes mature between July 2020 and July 2025 and bear interest at fixed rates between 2.62% and 3.13%. We were in compliance with all covenants at July 31, 2019.

In July 2015, we entered into a Note Purchase Agreement under which \$100,000 of Senior Unsecured Notes were purchased primarily by a group of insurance companies. At July 31, 2019 and October 31, 2018, \$92,857 and \$100,000, respectively, was outstanding under this agreement. Existing notes mature between July 2020 and July 2027 and bear interest at fixed rates of 2.89% and 3.19%. We were in compliance with all covenants at July 31, 2019.

Outlook

Going forward, we are optimistic about longer term growth opportunities in the diverse consumer durable, non-durable, medical, and industrial end markets we serve. For fiscal 2019, considering the impact of recent macroeconomic trends, we expect flat to modest organic sales growth, offset by an unfavorable currency effect of two percent based on the current exchange rate environment as compared to the prior year. Because of these trends, we move forward with caution given continued slower growth in emerging markets than previous years, expectations for global GDP indicating a low-growth macroeconomic environment, tariffs and other international trade uncertainties, and marketplace effects of political instability in certain areas of the world. Though the pace of the global economy remains unclear, our growth potential has been demonstrated over time from our capacity to build and enhance our core businesses by entering emerging markets, pursuing market adjacencies and driving growth initiatives. We drive value for our customers through our application expertise, differentiated technology, and direct sales and service support. Our priorities also are focused on operational efficiencies by employing continuous improvement methodologies in our business processes. We expect our efforts will continue to provide more than sufficient cash from operations for meeting our liquidity needs and paying dividends to common shareholders, as well as enabling us to invest in the development of new applications and markets for our technologies.

Safe Harbor Statements Under The Private Securities Litigation Reform Act Of 1995

This Form 10-Q, particularly the “Management’s Discussion and Analysis”, contains forward-looking statements within the meaning of the Securities Act of 1933, as amended, the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. Such statements relate to, among other things, income, earnings, cash flows, changes in operations, operating improvements, businesses in which we operate and the U.S. and global economies. Statements in this Form 10-Q that are not historical are hereby identified as “forward-looking statements” and may be indicated by words or phrases such as “anticipates”, “supports”, “plans”, “projects”, “expects”, “believes”, “should”, “would”, “could”, “hope”, “forecast”, “management is of the opinion”, use of the future tense and similar words or phrases.

In light of these risks and uncertainties, actual events and results may vary significantly from those included in or contemplated or implied by such statements. Readers are cautioned not to place undue reliance on such forward-looking statements. These forward-looking statements speak only as of the date made. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Factors that could cause actual results to differ materially from the expected results are discussed in Item 1A, Risk Factors in our Form 10-K for the year ended October 31, 2018.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Information regarding our financial instruments that are sensitive to changes in interest rates and foreign currency exchange rates was disclosed in our Form 10-K for the year ended October 31, 2018. The information disclosed has not changed materially in the interim period since then.

ITEM 4. CONTROLS AND PROCEDURES

Our management with the participation of the principal executive officer (President and Chief Executive Officer) and principal financial officer (Executive Vice President, Chief Financial Officer) has reviewed and evaluated our disclosure controls and procedures (as defined in the Securities Exchange Act Rule 13a-15(e)) as of July 31, 2019. Based on that evaluation, our management, including the principal executive and financial officers, has concluded that our disclosure controls and procedures were effective as of July 31, 2019 in ensuring that information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and is accumulated and communicated to management, including the principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

There were no changes in our internal controls over financial reporting that occurred during the three months ended July 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Part II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are involved in pending or potential litigation regarding environmental, product liability, patent, contract, employee and other matters arising from the normal course of business. Including the matters discussed below, it is our opinion, after consultation with legal counsel, that resolutions of these matters are not expected to result in a material adverse effect on our financial condition, quarterly or annual operating results or cash flows.

We have voluntarily agreed with the City of New Richmond, Wisconsin and other Potentially Responsible Parties to share costs associated with the remediation of the City of New Richmond municipal landfill (the “Site”) and the construction of a potable water delivery system serving the impacted area down gradient of the Site. At July 31, 2019 and October 31, 2018, our accrual for the ongoing operation, maintenance and monitoring obligation at the Site was \$401 and \$439, respectively. The liability for environmental remediation represents management’s best estimate of the probable and reasonably estimable undiscounted costs related to known remediation obligations. The accuracy of our estimate of environmental liability is affected by several uncertainties such as additional requirements that may be identified in connection with remedial activities, the complexity and evolution of environmental laws and regulations, and the identification of presently unknown remediation requirements. Consequently, our liability could be greater than our current estimate. However, we do not expect that the costs associated with remediation will have a material adverse effect on our financial condition or results of operations.

On February 22, 2019, a former employee, Mr. Ortiz, filed a purported class action lawsuit in the San Diego County Superior Court, California, against Nordson Asymtek, Inc. and Nordson Corporation, alleging various violations of the California Labor Code. Plaintiff seeks, among other things, an unspecified amount for unpaid wages, actual, consequential and incidental losses, penalties, and attorneys’ fees and costs. Management believes, based on currently available information, that the ultimate outcome of the proceeding described above will not have a material adverse effect on the Company’s financial condition or results of operations.

ITEM 1A. RISK FACTORS

Information regarding our risk factors was disclosed in our Form 10-K filed for the year ended October 31, 2018. The information disclosed has not changed materially in 2019.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

The following table summarizes common stock repurchased by the Company during the three months ended July 31, 2019:

	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs(1)	Maximum Value of Shares that May Yet Be Purchased Under the Plans or Programs(1)
May 1, 2019 to May 31, 2019	—	—	—	\$ 487,628
June 1, 2019 to June 30, 2019	—	—	—	\$ 487,628
July 1, 2019 to July 31, 2019	—	—	—	\$ 487,628
Total	—	—	—	—

- (1) In December 2014, the board of directors authorized a \$300,000 common share repurchase program. In August 2015, the board of directors authorized the repurchase of up to an additional \$200,000 of the Company’s common shares. In August 2018, the board of directors authorized the repurchase of an additional \$500,000 of the Company’s common shares. Approximately \$487,628 of the total \$1,000,000 authorized remained available for share repurchases at July 31, 2019. Uses for repurchased shares include the funding of benefit programs including stock options, restricted stock and 401(k) matching. Shares purchased are treated as treasury shares until used for such purposes. The repurchase program is being funded using cash from operations and proceeds from borrowings under our credit facilities.

Nordson Corporation

ITEM 6. EXHIBITS

- 10.1 [Amendment, dated June 10, 2019, to Employment Agreement between Nordson Corporation and Michael F. Hilton \(incorporated herein by reference to Exhibit 10.1 to Registrant's Current Report on Form 8-K filed on June 14, 2019\)**](#)
- 10.2 [Employment Agreement between Nordson Corporation and Sundaram Nagarajan \(incorporated herein by reference to Exhibit 10.2 to Registrant's Current Report on Form 8-K filed on June 14, 2019\)**](#)
- 10.3 [Change-in-Control Retention Agreement between Nordson Corporation and Sundaram Nagarajan \(incorporated herein by reference to Exhibit 10.3 to Registrant's Current Report on Form 8-K filed on June 14, 2019\)**](#)
- 31.1 [Certification pursuant to Rule 13a-14\(a\)/15d-14\(a\) of the Securities Exchange Act of 1934 by the Chief Executive Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 31.2 [Certification pursuant to Rule 13a-14\(a\)/15d-14\(a\) of the Securities Exchange Act of 1934 by the Chief Financial Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.](#)
- 32.1 [Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*](#)
- 32.2 [Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.*](#)
- 101 The following financial information from Nordson Corporation's Quarterly Report on Form 10-Q for the three and nine months ended July 31, 2019, formatted in inline Extensible Business Reporting Language (iXBRL): (i) the Condensed Consolidated Statements of Income for the three and nine months ended July 31, 2019 and 2018, (ii) the Condensed Consolidated Statements of Comprehensive Income for the three and nine months ended July 31, 2019 and 2018, (iii) the Condensed Consolidated Balance Sheets at July 31, 2019 and October 31, 2018, (iv) the Condensed Consolidated Statements of Changes in Shareholders' Equity for the three and nine months ended July 31, 2019 and 2018, (v) the Condensed Consolidated Statements of Cash Flows for the nine months ended July 31, 2019 and 2018, and (vi) the Notes to Condensed Consolidated Financial Statements.
- 104 The cover page from Nordson Corporation's Quarterly Report on Form 10-Q for the quarter ended July 31, 2019, formatted in in line Extensible Business Reporting Language (iXBRL) (included as Exhibit 101).

* Furnished herewith.

** Indicates management contract or compensatory plan, contract or arrangement in which one or more directors and/or executive officers of Nordson Corporation may be participants.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: September 5, 2019

Nordson Corporation

By: /s/ Gregory A. Thaxton

Gregory A. Thaxton

Executive Vice President, Chief Financial Officer
(Principal Financial Officer)

CERTIFICATIONS

CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Sundaram Nagarajan, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Nordson Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 5, 2019

/s/ Sundaram Nagarajan

Sundaram Nagarajan

President and Chief Executive Officer

**CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS
ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Gregory A. Thaxton, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Nordson Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: September 5, 2019

/s/ Gregory A. Thaxton

Gregory A. Thaxton

Executive Vice President, Chief Financial Officer

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Section 1350, Chapter 63 of Title 18, United States Code), I, Sundaram Nagarajan, President and Chief Executive Officer of Nordson Corporation, an Ohio corporation (the “Company”), do hereby certify that:

1. The Quarterly Report on Form 10-Q for the quarter ended July 31, 2019 of the Company (the “Form 10-Q”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. Information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: September 5, 2019

/s/ Sundaram Nagarajan

Sundaram Nagarajan

President and Chief Executive Officer

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Section 1350, Chapter 63 of Title 18, United States Code), I, Gregory A. Thaxton, Senior Vice President, Chief Financial Officer of Nordson Corporation, an Ohio corporation (the "Company"), do hereby certify that:

1. The Quarterly Report on Form 10-Q for the quarter ended July 31, 2019 of the Company (the "Form 10-Q") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. Information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: September 5, 2019

/s/ Gregory A. Thaxton

Gregory A. Thaxton

Executive Vice President, Chief Financial Officer