

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549**

**FORM 10-Q**

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

For the quarterly period ended June 30, 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 No. 001-35806

**The ExOne Company**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**46-1684608**  
(I.R.S. Employer  
Identification No.)

**127 Industry Boulevard**  
**North Huntingdon, Pennsylvania 15642**  
(Address of principal executive offices) (Zip Code)

**(724) 863-9663**  
(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol	Name of each exchange on which registered
Common stock	XONE	NASDAQ Stock Market

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

As of August 7, 2019, 16,414,411 shares of common stock, par value \$0.01, were outstanding.

PART I – FINANCIAL INFORMATION

Item 1. Financial Statements.

The ExOne Company and Subsidiaries  
 Condensed Statement of Consolidated Operations and Comprehensive Loss (Unaudited)  
 (in thousands, except per-share amounts)

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Revenue	\$ 15,279	\$ 10,857	\$ 24,858	\$ 22,750
Cost of sales	10,137	9,267	17,074	18,544
Gross profit	5,142	1,590	7,784	4,206
Operating expenses				
Research and development	2,537	3,235	4,969	6,030
Selling, general and administrative	6,167	6,353	11,590	12,555
	8,704	9,588	16,559	18,585
Loss from operations	(3,562)	(7,998)	(8,775)	(14,379)
Other expense (income)				
Interest expense	71	73	142	106
Other expense (income) – net	57	(52)	69	(98)
	128	21	211	8
Loss before income taxes	(3,690)	(8,019)	(8,986)	(14,387)
Provision (benefit) for income taxes	99	18	(701)	35
Net loss	\$ (3,789)	\$ (8,037)	\$ (8,285)	\$ (14,422)
Net loss per common share:				
Basic	\$ (0.23)	\$ (0.50)	\$ (0.51)	\$ (0.89)
Diluted	\$ (0.23)	\$ (0.50)	\$ (0.51)	\$ (0.89)
Comprehensive loss:				
Net loss	\$ (3,789)	\$ (8,037)	\$ (8,285)	\$ (14,422)
Other comprehensive income (loss):				
Foreign currency translation adjustments	583	(2,240)	(193)	(838)
Comprehensive loss	\$ (3,206)	\$ (10,277)	\$ (8,478)	\$ (15,260)

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

**The ExOne Company and Subsidiaries**  
**Condensed Consolidated Balance Sheet (Unaudited)**  
(in thousands, except per-share and share amounts)

	<u>June 30,</u> <u>2019</u>	<u>December 31,</u> <u>2018</u>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 5,462	\$ 7,592
Restricted cash	1,790	1,548
Accounts receivable – net	4,667	6,393
Current portion of net investment in sales-type leases	293	302
Inventories – net	16,183	15,930
Prepaid expenses and other current assets	2,736	2,438
Total current assets	<u>31,131</u>	<u>34,203</u>
Property and equipment – net	40,879	41,906
Net investment in sales-type leases– net of current portion	1,204	1,351
Other noncurrent assets	484	222
<b>Total assets</b>	<u>\$ 73,698</u>	<u>\$ 77,682</u>
<b>Liabilities</b>		
Current liabilities:		
Current portion of long-term debt	\$ 149	\$ 144
Accounts payable	5,339	4,376
Accrued expenses and other current liabilities	4,525	6,049
Current portion of contract liabilities	6,204	2,343
Total current liabilities	<u>16,217</u>	<u>12,912</u>
Long-term debt – net of current portion	1,288	1,364
Contract liabilities– net of current portion	341	527
Other noncurrent liabilities	280	104
<b>Total liabilities</b>	<u>18,126</u>	<u>14,907</u>
Contingencies and commitments		
<b>Stockholders' equity</b>		
Common stock, \$0.01 par value, 200,000,000 shares authorized, 16,318,147 (2019) and 16,234,201 (2018) shares issued and outstanding	163	162
Additional paid-in capital	176,488	175,214
Accumulated deficit	(110,138)	(101,853)
Accumulated other comprehensive loss	(10,941)	(10,748)
<b>Total stockholders' equity</b>	<u>55,572</u>	<u>62,775</u>
<b>Total liabilities and stockholders' equity</b>	<u>\$ 73,698</u>	<u>\$ 77,682</u>

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

**The ExOne Company and Subsidiaries**  
**Condensed Statement of Consolidated Cash Flows (Unaudited)**  
(in thousands)

	Six Months Ended June 30,	
	2019	2018
<b>Operating activities</b>		
Net loss	\$ (8,285)	\$ (14,422)
Adjustments to reconcile net loss to net cash used for operations:		
Depreciation and amortization	2,349	2,829
Equity-based compensation	1,081	374
Amortization of debt issuance costs	47	27
Recoveries for bad debts – net	(150)	(37)
(Recoveries) provision for slow-moving, obsolete and lower of cost or net realizable value inventories – net	(27)	771
Gain from disposal of property and equipment – net	(2)	(41)
Changes in assets and liabilities, excluding effects of foreign currency translation adjustments:		
Decrease in accounts receivable	1,879	3,661
Decrease in net investment in sales-type leases	153	102
Increase in inventories	(1,167)	(7,060)
Increase in prepaid expenses and other assets	(221)	(658)
Increase in accounts payable	927	445
(Decrease) increase in accrued expenses and other liabilities	(1,689)	730
Increase in contract liabilities	3,608	5,406
<b>Net cash used for operating activities</b>	<b>(1,497)</b>	<b>(7,873)</b>
<b>Investing activities</b>		
Capital expenditures	(423)	(819)
Proceeds from sale of property and equipment	3	25
<b>Net cash used for investing activities</b>	<b>(420)</b>	<b>(794)</b>
<b>Financing activities</b>		
Payments on long-term debt	(74)	(70)
Proceeds from exercise of employee stock options	171	—
Taxes related to the net share settlement of equity-based awards	(68)	—
Debt issuance costs	—	(188)
Other	(7)	(9)
<b>Net cash provided by (used for) financing activities</b>	<b>22</b>	<b>(267)</b>
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	7	(197)
Net change in cash, cash equivalents, and restricted cash	(1,888)	(9,131)
Cash, cash equivalents, and restricted cash at beginning of period	9,140	22,178
Cash, cash equivalents, and restricted cash at end of period	<u>\$ 7,252</u>	<u>\$ 13,047</u>
<b>Supplemental disclosure of noncash investing and financing activities</b>		
Transfer of internally developed 3D printing machines from inventories to property and equipment for internal use or leasing activities	<u>\$ 1,066</u>	<u>\$ 895</u>
Transfer of internally developed 3D printing machines from property and equipment to inventories for sale	<u>\$ 182</u>	<u>\$ 424</u>
Property and equipment included in accounts payable	<u>\$ 110</u>	<u>\$ 95</u>
Property and equipment included in accrued expenses and other current liabilities	<u>\$ 48</u>	<u>\$ 23</u>
Property and equipment acquired through financing arrangements	<u>\$ —</u>	<u>\$ 14</u>
Unsettled proceeds from sale of property and equipment	<u>\$ —</u>	<u>\$ 51</u>
Unsettled proceeds from exercise of employee stock options	<u>\$ 91</u>	<u>\$ —</u>
Debt issuance costs included in accrued expenses and other current liabilities	<u>\$ —</u>	<u>\$ 76</u>

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

**The ExOne Company and Subsidiaries**  
**Condensed Statement of Changes in Consolidated Stockholders' Equity (Unaudited)**  
(in thousands)

	Common stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total stockholders' equity
	Shares	\$				
<b>Balance at December 31, 2017</b>	16,125	\$ 161	\$ 173,718	\$ (89,186)	\$ (9,484)	\$ 75,209
Net loss	—	—	—	(6,385)	—	(6,385)
Other comprehensive income	—	—	—	—	1,402	1,402
Equity-based compensation	—	—	379	—	—	379
Common stock issued from equity incentive plan	25	—	—	—	—	—
<b>Balance at March 31, 2018</b>	16,150	\$ 161	\$ 174,097	\$ (95,571)	\$ (8,082)	\$ 70,605
Net loss	—	—	—	(8,037)	—	(8,037)
Other comprehensive loss	—	—	—	—	(2,240)	(2,240)
Equity-based compensation	—	—	(5)	—	—	(5)
<b>Balance at June 30, 2018</b>	<u>16,150</u>	<u>\$ 161</u>	<u>\$ 174,092</u>	<u>\$ (103,608)</u>	<u>\$ (10,322)</u>	<u>\$ 60,323</u>
<b>Balance at December 31, 2018</b>	16,234	\$ 162	\$ 175,214	\$ (101,853)	\$ (10,748)	\$ 62,775
Net loss	—	—	—	(4,496)	—	(4,496)
Other comprehensive loss	—	—	—	—	(776)	(776)
Equity-based compensation	—	—	439	—	—	439
Exercise of employee stock options	23	1	164	—	—	165
Taxes related to the net share settlement of equity-based awards	—	—	(68)	—	—	(68)
Common stock issued from equity incentive plan	38	—	—	—	—	—
<b>Balance at March 31, 2019</b>	16,295	\$ 163	\$ 175,749	\$ (106,349)	\$ (11,524)	\$ 58,039
Net loss	—	—	—	(3,789)	—	(3,789)
Other comprehensive income	—	—	—	—	583	583
Equity-based compensation	—	—	642	—	—	642
Exercise of employee stock options	13	—	97	—	—	97
Common stock issued from equity incentive plan	10	—	—	—	—	—
<b>Balance at June 30, 2019</b>	<u>16,318</u>	<u>\$ 163</u>	<u>\$ 176,488</u>	<u>\$ (110,138)</u>	<u>\$ (10,941)</u>	<u>\$ 55,572</u>

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

**The ExOne Company and Subsidiaries**  
**Notes to the Condensed Consolidated Financial Statements (Unaudited)**  
**(dollars in thousands, except per-share and share amounts)**

**Note 1. Basis of Presentation**

**Organization**

The ExOne Company (“ExOne”) is a corporation organized under the laws of the state of Delaware. ExOne was formed on January 1, 2013, when The Ex One Company, LLC, a Delaware limited liability company, merged with and into a Delaware corporation, which survived and changed its name to The ExOne Company (the “Reorganization”). As a result of the Reorganization, The Ex One Company, LLC became ExOne, the common and preferred interest holders of The Ex One Company, LLC became holders of common stock and preferred stock, respectively, of ExOne, and the subsidiaries of The Ex One Company, LLC became the subsidiaries of ExOne. The condensed consolidated financial statements include the accounts of ExOne, its wholly-owned subsidiaries, ExOne Americas LLC (United States); ExOne GmbH (Germany); ExOne Property GmbH (Germany); ExOne KK (Japan); and through December 2018, ExOne Italy S.r.l (Italy). Collectively, the consolidated group is referred to as the “Company”.

The Company filed a registration statement on Form S-3 (No. 333-223690) with the Securities and Exchange Commission (“SEC”) on March 15, 2018. The purpose of the Form S-3 was to register, among other securities, debt securities. Subsidiaries of the Company are co-registrants with the Company (“Subsidiary Guarantors”), and the registration statement registered guarantees of debt securities by one or more of the Subsidiary Guarantors. The Subsidiary Guarantors are 100% owned by the Company and any guarantees by the Subsidiary Guarantors will be full and unconditional. There have been no transactions undertaken subject to the Form S-3 since its initial filing.

**Basis of Presentation**

The condensed consolidated financial statements of the Company are unaudited. The condensed consolidated financial statements include all adjustments, consisting of normal recurring adjustments, considered necessary by management to fairly state the results of operations, financial position and cash flows of the Company. All material intercompany transactions and balances have been eliminated in consolidation. The results reported in these condensed consolidated financial statements are not necessarily indicative of the results that may be expected for the entire year. The December 31, 2018 condensed consolidated balance sheet data was derived from the audited financial statements but does not include all disclosures required by accounting principles generally accepted in the United States of America (“GAAP”). This Quarterly Report on Form 10-Q should be read in connection with the Company’s Annual Report on Form 10-K for the year ended December 31, 2018, which includes all disclosures required by GAAP.

The preparation of these condensed consolidated financial statements requires the Company to make certain judgments, estimates and assumptions regarding uncertainties that affect the reported amounts of assets, liabilities, revenue and expenses and related disclosure of contingent assets and liabilities. Areas that require significant judgments, estimates and assumptions include accounting for accounts receivable (including the allowance for doubtful accounts); inventories (including the allowance for slow-moving and obsolete inventories); product warranty reserves; contingencies; income taxes (including the valuation allowance on certain deferred tax assets and liabilities for uncertain tax positions); equity-based compensation (including the valuation of certain equity-based compensation awards issued by the Company); and testing for impairment of long-lived assets (including the identification of asset groups by management, estimates of future cash flows of identified asset groups and fair value estimates used in connection with assessing the valuation of identified asset groups). The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

Certain amounts relating to contract liabilities – net of current portion (\$527) in the accompanying condensed consolidated balance sheet at December 31, 2018, have been reclassified from other noncurrent liabilities to conform to current period presentation, following the adoption of Financial Accounting Standards Board (“FASB”) Accounting Standards Update (“ASU”) 2014-09 (further described below).

Certain amounts relating to the lessor current portion of net investment in sales-type leases (\$302) and lessor net investment in sales-type leases – net of current portion (\$1,351) in the accompanying condensed consolidated balance sheet at December 31, 2018, have been reclassified from accounts receivable and other noncurrent assets, respectively, to conform to current period presentation following the adoption of FASB ASU 2016-02 (further described below).

Related to the reclassifications further described above, amounts within the condensed statement of consolidated cash flows for the six months ended June 30, 2018 associated with these changes have also been reclassified to conform to current period presentation.

**Recently Adopted Accounting Guidance**

On January 1, 2019, the Company adopted FASB ASU 2014-09, “Revenue from Contracts with Customers.” This ASU created a comprehensive framework for all entities in all industries to apply in the determination of when to recognize revenue and, therefore, supersedes virtually all existing revenue recognition requirements and guidance. This framework is expected to provide a consistent

and comparable methodology for revenue recognition. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve this principle, an entity should apply the following steps: identify the contract(s) with a customer, identify the performance obligations in the contract(s), determine the transaction price, allocate the transaction price to the performance obligations in the contract(s), and recognize revenue when, or as, the entity satisfies a performance obligation. The Company adopted this guidance using the modified retrospective approach. Revenue from the Company's sale of three-dimensional ("3D") printing machines and 3D printed and other products, materials and services continues to generally be recognized when the related machines, products or materials are delivered or accepted by the Company's customers or as the related services are performed by the Company. As such, the adoption of this guidance did not have a material impact on the Company's financial position or results of operations. The Company has included the enhanced disclosures required by this guidance in its condensed consolidated financial statements (Note 5).

On January 1, 2019, the Company adopted FASB ASU 2016-02, "Leases." This ASU requires lessees to recognize a right-of-use asset and lease liability on the consolidated balance sheet for leases classified as operating leases. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize a right-of-use asset and lease liability. Additionally, when measuring assets and liabilities arising from a lease, optional payments should be included only if the lessee is reasonably certain to exercise an option to extend the lease, exercise a purchase option, or not exercise an option to terminate the lease. A right-of-use asset represents an entity's right to use the underlying asset for the lease term, and a lease liability represents an entity's obligation to make lease payments. Currently, an asset and liability only are recorded for leases classified as capital leases (financing leases). The measurement, recognition, and presentation of expenses and cash flows arising from leases by a lessee remains the same. In connection with the adoption of this guidance, the Company has completed an assessment resulting in an accumulation of all of its leasing arrangements and has validated the information for accuracy and completeness. Upon adoption of the new lease guidance, management recorded a right-of-use asset and lease liability, each in the amount of approximately \$400, on the Company's consolidated balance sheet for various types of operating leases, including certain machinery and other equipment and vehicles. This amount is equivalent to the aggregate future minimum lease payments on a discounted basis. The Company has also elected to apply the package of transitional practical expedients of the new lease guidance by allowing the Company to not: (1) reassess if expired or existing contracts are, or contain, leases; (2) reassess lease classification for any expired or existing leases; and (3) reassess initial direct costs for any existing leases. Additionally, in July 2018, the FASB issued guidance to provide for an alternative transition method to the new lease guidance, whereby an entity can choose to not reflect the impact of the new lease guidance in the prior periods included in its consolidated financial statements. The Company has utilized this alternative transition method in connection with its adoption on January 1, 2019. The Company has included the enhanced disclosures required by this guidance in its condensed consolidated financial statements (Note 11).

On January 1, 2019, the Company adopted FASB ASU 2016-15, "Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments." This ASU is intended to reduce diversity in practice in how certain cash receipts and payments are presented and classified in the statement of consolidated cash flows. The standard provides guidance in a number of situations including, among others, settlement of zero-coupon bonds, contingent consideration payments made after a business combination, proceeds from the settlement of insurance claims, and distributions received from equity method investees. The ASU also provides guidance for classifying cash receipts and payments that have aspects of more than one class of cash flows. The adoption of this ASU did not have an effect on the consolidated financial statements of the Company.

#### ***Recently Issued Accounting Guidance***

The Company considers the applicability and impact of all ASUs issued by the FASB. Recently issued ASUs not listed below either were assessed and determined to be not applicable or are currently expected to have no impact on the consolidated financial statements of the Company.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments – Credit Losses." This ASU added a new impairment model (known as the current expected credit loss ("CECL") model) that is based on expected losses rather than incurred losses. Under the new guidance, an entity recognizes as an allowance its estimate of expected credit losses. The CECL model applies to most debt instruments, trade receivables, lease receivables, financial guarantee contracts, and other loan commitments. The CECL model does not have a minimum threshold for recognition of impairment losses and entities will need to measure expected credit losses on assets that have a low risk of loss. These changes become effective for the Company on January 1, 2020. Management is currently evaluating the potential impact of these changes on the consolidated financial statements of the Company.

#### **Note 2. Liquidity**

The Company has incurred a net loss in each of its annual periods since its inception. As shown in the accompanying condensed statement of consolidated operations and comprehensive loss, the Company incurred a net loss of approximately \$3,789 and \$8,285 for the three months and six months ended June 30, 2019, respectively. At June 30, 2019, the Company had approximately \$5,462 in unrestricted cash and cash equivalents.

Since its inception the Company has received cumulative unrestricted net proceeds from the sale of its common stock (through its initial public offering and subsequent secondary offerings) of approximately \$168,361 to fund its operations. In March 2018, the Company entered into a three-year, \$15,000 revolving credit facility with a related party (Note 13) to provide additional funding for working capital and general corporate purposes. In June 2018, the Company initiated a 2018 global cost realignment program focused on a reduction in the Company's production overhead costs and operating expenses in an effort to drive efficiency in its operations and preserve capital.

Management believes that the Company's existing capital resources will be sufficient to support the Company's operating plan. If management anticipates that the Company's actual results will differ from its operating plan, management believes it has sufficient capabilities to enact cost savings measures to preserve capital (in addition to the costs savings measures associated with the Company's 2018 global cost realignment program further described above). The Company may also seek to raise additional capital to support its growth through additional debt, equity or other alternatives (including asset sales) or a combination thereof.

### Note 3. Accumulated Other Comprehensive Loss

The following table summarizes changes in the components of accumulated other comprehensive loss for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
<b>Foreign currency translation adjustments</b>				
Balance at beginning of period	\$ (11,524)	\$ (8,082)	\$ (10,748)	\$ (9,484)
Other comprehensive income (loss)	583	(2,240)	(193)	(838)
Balance at end of period	<u>\$ (10,941)</u>	<u>\$ (10,322)</u>	<u>\$ (10,941)</u>	<u>\$ (10,322)</u>

Foreign currency translation adjustments consist of the effect of translation of functional currency financial statements (denominated in the euro and Japanese yen) to the reporting currency of the Company (United States dollar) and certain long-term intercompany transactions between subsidiaries for which settlement is not planned or anticipated in the foreseeable future.

There were no tax impacts related to income tax rate changes and no amounts were reclassified to earnings for either of the periods presented.

### Note 4. Loss Per Share

The Company presents basic and diluted loss per common share amounts. Basic loss per common share is calculated by dividing net loss available to common stockholders by the weighted average number of common shares outstanding during the applicable period. Diluted loss per common share is calculated by dividing net loss available to common stockholders by the weighted average number of common shares and common equivalent shares outstanding during the applicable period.

As the Company incurred a net loss during each of the three months and six months ended June 30, 2019 and 2018, basic average common shares outstanding and diluted average common shares outstanding were the same because the effect of potential shares of common stock, including stock options (608,787 – 2019 and 536,635 – 2018) and unvested restricted stock issued (96,264 – 2019 and 52,502 – 2018), was anti-dilutive.

The information used to compute basic and diluted net loss per common share was as follows for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Net loss	\$ (3,789)	\$ (8,037)	\$ (8,285)	\$ (14,422)
Weighted average shares outstanding (basic and diluted)	16,301,157	16,149,617	16,278,043	16,144,092
Net loss per common share:				
Basic	\$ (0.23)	\$ (0.50)	\$ (0.51)	\$ (0.89)
Diluted	\$ (0.23)	\$ (0.50)	\$ (0.51)	\$ (0.89)

### Note 5. Revenue

The Company derives revenue from the sale of 3D printing machines and 3D printed and other products, materials and services. Revenue is recognized when the Company satisfies its performance obligation(s) under a contract (either implicit or explicit) by transferring the promised product or service to a customer either when (or as) the customer obtains control of the product or service. A



performance obligation is a promise in a contract to transfer a distinct product or service to a customer. A contract's transaction price is allocated to each distinct performance obligation.

Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products or providing services. As such, revenue is recorded net of returns, allowances, customer discounts, and incentives. Sales, value add, and other taxes collected from customers and remitted to governmental authorities are accounted for on a net (excluded from revenue) basis. Shipping and handling costs are included in cost of sales.

Certain of the Company's contracts with customers provide for multiple performance obligations. Sales of 3D printing machines may also include optional equipment, materials, replacement components and services (installation, training and other services, including maintenance services and/or an extended warranty). Certain other contracts have a single performance obligation, as the promise to transfer products or services is not separately identifiable from other promises in the contract and, therefore, not distinct. For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation using the Company's best estimate of stand-alone selling price for each distinct product or service in the contract, which is generally based on an observable price.

The Company's revenue from products is transferred to customers at a point in time. The Company's contracts for 3D printing machines generally include substantive customer acceptance provisions. Revenue under these contracts is recognized when customer acceptance provisions have been satisfied. For all other product sales, the Company recognizes revenue at the point in time in which the customer obtains control of the product, which is generally when product title passes to the customer upon delivery. In limited cases, title does not transfer and revenue is not recognized until the customer has received the products at its physical location.

The Company's revenue from service arrangements includes deferred maintenance contracts and extended warranties that can be purchased at the customer's option. The Company generally provides a standard one-year warranty on the Company's 3D printing machines, which is considered an assurance type warranty, and not considered a separate performance obligation (Note 10). Revenue associated with deferred maintenance contracts is generally recognized at a point in time when the related services are performed where sufficient historical evidence indicates that the costs of performing the related services under the contract are not incurred on a straight-line basis, with such revenue recognized in proportion to the costs expected to be incurred. Revenue associated with extended warranties is generally recognized over time on a straight-line basis over the related contract period.

The Company's revenue from service arrangements includes contracts with the Federal government under fixed-fee, cost reimbursable and time and materials arrangements (certain of which may have periods of performance greater than one year). Revenue under these contracts is generally recognized over time using an input measure based upon labor hours incurred and provisional rates provided under the contracts. As such, the nature of these contracts may give rise to variable consideration, primarily based upon completion of the Company's annual Incurred Cost Submission filing as required by the Federal government. Historically, amounts associated with variable consideration have not been significant.

The Company's revenue from service arrangements includes certain research and development services. Revenue under research and development service contracts is generally recognized over time using an output measure, specifically units or parts delivered, based upon certain customer acceptance and delivery requirements. Revenue recognized over time using an output measure is not significant.

The following table summarizes the Company's revenue by product group for the periods indicated:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
3D printing machines	\$ 9,231	\$ 3,213	\$ 12,560	\$ 7,734
3D printed and other products, materials and services	6,048	7,644	12,298	15,016
	<u>\$ 15,279</u>	<u>\$ 10,857</u>	<u>\$ 24,858</u>	<u>\$ 22,750</u>

Revenue from 3D printing machines includes leasing revenue whereby the Company is the lessor of 3D printing machines to its customers. Leasing revenue is accounted for under ASU 2016-02 (Note 11).

The timing of revenue recognition, billings and cash collections results in billed receivables, unbilled receivables (contract assets) and deferred revenue and customer prepayments (contract liabilities) in the accompanying condensed consolidated balance sheet. The Company considers a number of factors in its evaluation of the creditworthiness of its customers, including past due amounts, past payment history, and current economic conditions. For 3D printing machines, the Company's terms of sale vary by transaction. To reduce credit risk in connection with 3D printing machine sales, the Company may, depending upon the circumstances, require customers to furnish letters of credit or bank guarantees or to provide advanced payment (either partial or in full). For 3D printed and other products and materials, the Company's terms of sale generally require payment within 30 to 60 days after delivery, although the Company also recognizes that longer payment periods are customary in certain countries where it transacts business. Service arrangements are generally billed in accordance with specific contract terms and are typically billed in advance or in proportion to

performance of the related services. There were no other significant changes in contract liabilities during the three months or six months ended June 30, 2019. Contract assets are not significant.

For the six months ended June 30, 2019, the Company recognized revenue of approximately \$1,573 related to contract liabilities at January 1, 2019.

At June 30, 2019, the Company had approximately \$23,100 of remaining performance obligations (including contract liabilities), which is also referred to as backlog, of which approximately \$19,700 was expected to be fulfilled during the twelve months following such date.

The Company has elected to apply the practical expedient associated with incremental costs of obtaining a contract, and as such, sales commission expense is generally expensed when incurred because the amortization period would be one year or less. These costs are recorded within selling, general and administrative expenses.

Accounts receivable are reported at their net realizable value. The Company's estimate of the allowance for doubtful accounts related to trade receivables is based on the Company's evaluation of customer accounts with past-due outstanding balances or specific accounts for which it has information that the customer may be unable to meet its financial obligations. Based upon review of these accounts, and management's analysis and judgment, the Company records a specific allowance for that customer's accounts receivable balance to reduce the outstanding receivable balance to the amount expected to be collected. The allowance is re-evaluated and adjusted periodically as additional information is received that impacts the allowance amount reserved. At June 30, 2019 and December 31, 2018, the allowance for doubtful accounts was approximately \$73 and \$225, respectively. During the three months ended June 30, 2019 and 2018, the Company recorded net recoveries for bad debts of approximately \$77 and \$46, respectively. During the six months ended June 30, 2019 and 2018, the Company recorded net recoveries for bad debts of approximately \$150 and \$37, respectively.

#### **Note 6. Restructuring**

In December 2017 the Company committed to a plan to consolidate certain of its 3D printing operations from its Desenzano del Garda, Italy facility into its Gersthofen, Germany facility. These actions were taken as part of the Company's efforts to optimize its business model and maximize its facility utilization. During the three months ended December 31, 2017, the Company recorded a charge of approximately \$72 split between cost of sales (\$19) and selling, general and administrative expense (\$53) associated with involuntary employee terminations related to this plan. During the three months ended March 31, 2018, the Company recorded an additional charge of approximately \$245 associated with other exit costs (\$17) and asset impairments (\$228) related to this plan. During the three months ended June 30, 2018, the Company recorded an additional charge of approximately \$13 associated with asset impairments related to this plan. In addition, during the three months ended June 30, 2018, the Company recorded a gain from disposal of certain property and equipment of approximately \$51 (recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss). Charges associated with other exit costs recorded during the six months ended June 30, 2018 were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss. Charges associated with asset impairments recorded during the three and six months ended June 30, 2018 were recorded to cost of sales as a component of depreciation expense in the accompanying condensed statement of consolidated operations and comprehensive loss. Other exit costs relate to the remaining facility rent due under a non-cancellable operating lease following the cessation of operations at the facility in January 2018. Asset impairment charges relate to certain leasehold improvements associated with the exited facility and other equipment which was abandoned by the Company. There are no additional charges expected to be incurred associated with this plan in future periods. The Company settled all amounts associated with involuntary employee terminations and other exit costs (remaining facility rent payments) during 2018.

#### **Note 7. Impairment**

During the three months ended June 30, 2019, as a result of continued operating losses and cash flow deficiencies, the Company identified a triggering event requiring a test for the recoverability of long-lived assets held and used at the asset group level. Assessing the recoverability of long-lived assets held and used requires significant judgments and estimates by management.

For purposes of testing long-lived assets for recoverability, the Company operates as three separate asset groups: United States, Europe and Japan. In assessing the recoverability of long-lived assets held and used, the Company determined the carrying amount of long-lived assets held and used to be in excess of the estimated future undiscounted net cash flows of the related assets. The Company proceeded to determine the fair value of its long-lived assets held and used, principally through use of the market approach. The Company's use of the market approach included consideration of market transactions for comparable assets. Management concluded that the fair value of long-lived assets held and used exceeded their carrying value, and as such, no impairment loss was recorded.

A significant decrease in the market price of a long-lived asset, adverse change in the use or condition of a long-lived asset, adverse change in the business climate or legal or regulatory factors impacting a long-lived asset and continued operating losses and cash flow deficiencies associated with a long-lived asset, among other indicators, could cause a future assessment to be performed which may

result in an impairment of long-lived assets held and used, resulting in a material adverse effect on the financial position and results of operations of the Company.

**Note 8. Cash, Cash Equivalents, and Restricted Cash**

The following provides a reconciliation of cash, cash equivalents, and restricted cash as reported in the accompanying condensed consolidated balance sheet to the same such amounts shown in the accompanying condensed statement of consolidated cash flows as of the dates indicated:

	June 30, 2019	December 31, 2018
Cash and cash equivalents	\$ 5,462	\$ 7,592
Restricted cash	1,790	1,548
Cash, cash equivalents, and restricted cash	<u>\$ 7,252</u>	<u>\$ 9,140</u>

Restricted cash at June 30, 2019 and December 31, 2018 includes approximately \$1,284 and \$1,044, respectively, associated with cash collateral required by a German bank for short-term financial guarantees issued by ExOne GmbH in connection with certain commercial transactions requiring security (Note 12). Restricted cash at June 30, 2019 and December 31, 2018 includes approximately \$506 and \$504, respectively, associated with cash collateral required by a United States bank to offset certain short-term, unsecured lending commitments associated with the Company’s corporate credit card program. Each of the balances described are considered legally restricted by the Company.

**Note 9. Inventories**

Inventories consisted of the following as of the dates indicated:

	June 30, 2019	December 31, 2018
Raw materials and components	\$ 7,623	\$ 7,747
Work in process	4,803	5,147
Finished goods	3,757	3,036
	<u>\$ 16,183</u>	<u>\$ 15,930</u>

Raw materials and components consist of consumable materials and component parts and subassemblies associated with 3D printing machine manufacturing and support activities. Work in process consists of 3D printing machines and other products in varying stages of completion. Finished goods consist of 3D printing machines and other products prepared for sale in accordance with customer specifications.

At June 30, 2019 and December 31, 2018, the allowance for slow-moving and obsolete inventories was approximately \$4,149 and \$4,143, respectively, and has been reflected as a reduction to inventories (principally raw materials and components).

During the three months ended June 30, 2018, the Company recorded a charge of approximately \$561 to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss attributable to certain industrial microwave inventories based on a sustained absence of demand for such curing solutions and a decision by the Company to discontinue future manufacturing of such industrial microwaves.

**Note 10. Product Warranty Reserves**

Substantially all of the Company’s 3D printing machines are covered by a standard twelve-month warranty. Generally, at the time of sale, a liability is recorded (with an offset to cost of sales) based upon the expected cost of replacement parts and labor to be incurred over the life of the standard warranty. Expected cost is estimated using historical experience for similar products. The Company periodically assesses the adequacy of the product warranty reserves based on changes in these factors and records any necessary adjustments if actual experience indicates that adjustments are necessary. Future claims experience could be materially different from prior results because of the introduction of new, more complex products, a change in the Company’s warranty policy in response to industry trends, competition or other external forces, or manufacturing changes that could impact product quality. In the event that the Company determines that its current or future product repair and replacement costs exceed estimates, an adjustment to these reserves would be charged to cost of sales in the period such a determination is made.

The following table summarizes changes in product warranty reserves, which amounts were reflected in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheet for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Balance at beginning of period	\$ 1,251	\$ 1,148	\$ 1,670	\$ 1,300
Provisions for new issuances	383	167	529	386
Payments	(457)	(120)	(848)	(328)
Reserve adjustments	36	(252)	(123)	(439)
Foreign currency translation adjustments	10	(34)	(5)	(10)
Balance at end of period	<u>\$ 1,223</u>	<u>\$ 909</u>	<u>\$ 1,223</u>	<u>\$ 909</u>

#### Note 11. Leases

##### Lessee

The Company leases machinery and other equipment and vehicles under operating lease arrangements (with initial terms greater than twelve months), expiring in various years through 2026. In addition, the Company leases certain equipment and vehicles under finance (previously capital) lease arrangements, which are not significant.

For all operating lease arrangements (with the exception of short-term lease arrangements), the Company presents at the commencement date: a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term.

The Company has elected, as a practical expedient, not to separate non-lease components from lease components, and instead account for each separate component as a single lease component for all lease arrangements, as lessee. In addition, the Company has elected, as a practical expedient, not to apply lease recognition requirements to short-term lease arrangements, generally those with a lease term of less than twelve months, for all classes of underlying assets. In determination of the lease term, the Company considers the likelihood of lease renewal options and lease termination provisions. As a result, lease payments under these short-term lease arrangements are recognized in the accompanying condensed statement of consolidated operations and comprehensive loss on a straight-line basis over the lease term.

The Company uses its incremental borrowing rate in determining the present value of lease payments, as the implicit rate of the lease arrangements is generally not readily determinable.

Certain of the Company's operating lease arrangements are with related parties under common control (Note 18). Lease cost under operating lease agreements with related parties, included within short-term lease cost below, was approximately \$12 and \$24 for the three months and six months ended June 30, 2019.

Future minimum lease payments of operating lease arrangements (with initial terms greater than twelve months) at June 30, 2019, were approximately as follows:

2019	\$ 90
2020	109
2021	72
2022	58
2023	9
Thereafter	4
Total minimum lease payments	<u>342</u>
Less: Present value discount	<u>(32)</u>
Total operating lease liabilities	<u>\$ 310</u>

For the three months and six months ended June 30, 2019, lease cost under operating lease arrangements was approximately \$98 (including \$47 relating to short-term lease arrangements) and \$211 (including \$112 relating to short-term lease arrangements), respectively.

Supplemental information related to operating lease arrangements (with initial terms greater than twelve months) was as follows at and for the six months ended June 30, 2019:

Operating lease right-of-use assets included in other noncurrent assets	\$	310
Operating lease liabilities included in accrued expenses and other current liabilities	\$	131
Operating lease liabilities included in other noncurrent liabilities	\$	179
Right-of-use assets obtained in exchange for new operating lease liabilities	\$	9
Cash paid for amounts included in the measurement of operating lease liabilities	\$	99
Weighted average remaining lease term (in years)		3.0
Weighted average discount rate		6.5%

As previously disclosed under the prior lease accounting standard, future minimum lease payments of operating lease arrangements (with initial terms greater than twelve months) at December 31, 2018, were approximately as follows:

2019	\$	170
2020		111
2021		76
2022		67
2023		12
Thereafter		5
	\$	<u>441</u>

#### Lessor

The Company leases machinery and equipment to customers (principally 3D printing machines and related equipment) under lease arrangements classified as either operating leases or sales-type leases. The Company's operating lease arrangements have initial terms generally ranging from one to five years, certain of which may contain extension or termination clauses, or both. Such operating lease arrangements also generally include a purchase option to acquire the related machinery and equipment at the end of the lease term for either a fixed amount as determined at inception, or a subsequently negotiated fair market value. At June 30, 2019, the Company estimated that the total fair market value significantly exceeded the related net book value of the machinery and equipment held under the Company's operating lease arrangements. The Company's sales-type lease arrangements generally include transfer of ownership at the end of the lease term, and as such, the Company's net investment in sale-type lease arrangements presented in the Company's accompanying condensed consolidated balance sheet generally does not include an amount of unguaranteed residual value.

The Company has elected, as a practical expedient, not to separate non-lease components from lease components, and instead account for each separate component as a single lease component for all lease arrangements, as lessor. Sales, value add, and other taxes collected from customers and remitted to governmental authorities are accounted for on a net (excluded from lease income) basis. In determination of the lease term, the Company considers the likelihood of lease renewal options and lease termination provisions. Additionally, certain of the Company's lease arrangements do not qualify as sale-type leases as collectability is not reasonably assured.

The Company recognized the following components under operating and sales-type lease arrangements in the accompanying condensed statement of consolidated operations and comprehensive loss for the periods indicated:

	Three Months Ended				Six Months Ended			
	June 30,				June 30,			
	2019		2018		2019		2018	
	Operating	Sales-type	Operating	Sales-type	Operating	Sales-type	Operating	Sales-type
Revenue	\$ 706	\$ —	\$ 251	\$ —	\$ 1,026	\$ —	\$ 452	\$ —
Interest income <sup>(a)</sup>	\$ —	\$ 27	\$ —	\$ 13	\$ —	\$ 55	\$ —	\$ 26

(a) Interest income relating to sales-type leases is recorded as a component of revenue in the accompanying condensed statement of consolidated operations and comprehensive loss for each of the periods presented.

The Company's net investment in sales-type leases consisted of the following as of the dates indicated:

	June 30, 2019	December 31, 2018
Future minimum lease payments receivable	\$ 1,757	\$ 1,969
Less: Unearned interest income	(260)	(316)
Net investment in sales-type leases	<u>\$ 1,497</u>	<u>\$ 1,653</u>

Future minimum lease payments of non-cancellable operating and sales-type lease arrangements at June 30, 2019, were approximately as follows:

	Operating	Sales-type
2019	\$ 566	\$ 200
2020	138	381
2021	48	381
2022	—	381
2023	—	414
Thereafter	—	—
Total minimum lease payments	<u>\$ 752</u>	<u>\$ 1,757</u>
Less: Present value discount		(260)
Future minimum lease payments receivable		<u>\$ 1,497</u>

As previously disclosed under the prior lease accounting standard, minimum future rentals under non-cancellable operating and sales-type lease arrangements at December 31, 2018, were approximately as follows:

	Operating	Sales-type
2019	\$ 687	\$ 409
2020	148	382
2021	48	382
2022	—	382
2023	—	414
Thereafter	—	—
	<u>\$ 883</u>	<u>\$ 1,969</u>

## Note 12. Contingencies and Commitments

### Contingencies

On March 1, 2018, the Company's ExOne GmbH subsidiary notified Voxeljet AG that it had materially breached a 2003 Patent and Know-How Transfer Agreement and asserted its rights to set-off damages as a result of the breaches against the annual license fee due from the Company under the agreement. At this time, the Company cannot reasonably estimate a contingency, if any, related to this matter.

The Company and its subsidiaries are subject to various litigation, claims, and proceedings which have been or may be instituted or asserted from time to time in the ordinary course of business. Management does not believe that the outcome of any pending or threatened matters will have a material adverse effect, individually or in the aggregate, on the financial position, results of operations or cash flows of the Company.

### Commitments

In the normal course of its operations, ExOne GmbH issues short-term financial guarantees and letters of credit to third parties in connection with certain commercial transactions requiring security. ExOne GmbH maintains a credit facility with a German bank which provides for various short-term financings in the form of overdraft credit, financial guarantees, letters of credit and collateral security for commercial transactions for an aggregate of approximately \$1,400 (€1,300). In addition, ExOne GmbH may use the credit facility for short-term, fixed-rate loans in minimum increments of approximately \$100 (€100) with minimum terms of at least 30 days. The overdraft credit interest rate is fixed at 10.2% while the interest rate associated with commercial transactions requiring security (financial guarantees, letters of credit or collateral security) is fixed at 1.75%. The credit facility has an indefinite term and is subject to cancellation by either party at any time upon repayment of amounts outstanding or expiration of commercial transactions requiring security. There is no commitment fee associated with the credit facility. There are no negative covenants associated with the credit facility. The credit facility has been guaranteed by the Company. At June 30, 2019 and December 31, 2018, there were no outstanding borrowings in the form of overdraft credit or short-term loans under the credit facility. At June 30, 2019, total outstanding financial

guarantees and letters of credit issued by ExOne GmbH under the credit facility were approximately \$1,284 (€1,129) with expiration dates ranging from July 2019 through November 2019. At December 31, 2018, total outstanding financial guarantees and letters of credit issued by ExOne GmbH under the credit facility were approximately \$1,044 (€912).

In addition to amounts issued by ExOne GmbH under the credit facility, from time to time, ExOne GmbH enters into separate agreements with the same German bank for additional capacity for financial guarantees and letters of credit associated with certain commercial transactions requiring security. Terms of the separate agreements are substantially similar to those of the existing credit facility. At June 30, 2019, ExOne GmbH had a singular financial guarantee outstanding under a separate agreement for approximately \$91 (€80) with an expiration date of February 2023. Related to this separate agreement, the requirement for cash collateral was waived by the German bank as it also represents the counterparty in the related transaction.

### **Note 13. Related Party Revolving Credit Facility**

On March 12, 2018, ExOne and its ExOne Americas LLC and ExOne GmbH subsidiaries, as guarantors (collectively, the “Loan Parties”), entered into a Credit Agreement and related ancillary agreements with LBM Holdings, LLC (“LBM”), a company controlled by S. Kent Rockwell, who was the Executive Chairman of the Company (a related party) at such date and is currently Chairman of the Board of Directors (the “Board”) of the Company, relating to a \$15,000 revolving credit facility (the “LBM Credit Agreement”) to provide additional funding for working capital and general corporate purposes. The LBM Credit Agreement provides for a term of three years (through March 12, 2021) and bears interest at a rate of one month LIBOR plus an applicable margin of 500 basis points (approximately 7.4% and 7.5% at June 30, 2019 and December 31, 2018, respectively). The LBM Credit Agreement requires a commitment fee of 75 basis points, or 0.75%, on the unused portion of the facility, payable monthly in arrears. In addition, an up-front commitment fee of 125 basis points, or 1.25% (approximately \$188), was required at closing. Borrowings under the LBM Credit Agreement are required to be in minimum increments of \$1,000. ExOne may terminate or reduce the credit commitment at any time during the term of the LBM Credit Agreement without penalty. ExOne may also make prepayments against outstanding borrowings under the LBM Credit Agreement at any time without penalty. Borrowings under the LBM Credit Agreement have been collateralized by the accounts receivable, inventories and machinery and equipment of the Loan Parties. At June 30, 2019 and December 31, 2018, the total estimated value of collateral was in significant excess of the maximum borrowing capacity under the LBM Credit Agreement.

The LBM Credit Agreement contains several affirmative covenants including prompt payment of liabilities and taxes; maintenance of insurance, properties, and licenses; and compliance with laws. The LBM Credit Agreement also contains several negative covenants including restricting the incurrence of certain additional debt; prohibiting future liens (other than permitted liens); prohibiting investment in third parties; limiting the ability to pay dividends; limiting mergers, acquisitions, and dispositions; and limiting the sale of certain property and equipment of the Loan Parties. The LBM Credit Agreement does not contain any financial covenants. The LBM Credit Agreement also contains events of default, including, but not limited to, cross-default to certain other debt, breaches of representations and warranties, change of control events and breaches of covenants.

LBM was determined to be a related party based on common control by S. Kent Rockwell. Accordingly, the Company does not consider the LBM Credit Agreement indicative of a fair market value lending. Prior to execution, the LBM Credit Agreement was reviewed and approved by the Audit Committee of the Board and subsequently by a sub-committee of independent members of the Board. At the time of execution of the LBM Credit Agreement, the \$15,000 in available loan proceeds was deposited into an escrow account with an unrelated, third party financial institution acting as escrow agent pursuant to a separate Escrow Agreement by and among the parties. Loan proceeds held in escrow are available to the Company upon its submission to the escrow agent of a loan request. Such proceeds will not be available to LBM until payment in-full of the obligations under the LBM Credit Agreement and termination of the LBM Credit Agreement. Payments of principal and other obligations will be made to the escrow agent, while interest payments will be made directly to LBM. Provided there exists no potential default or event of default, the LBM Credit Agreement and Escrow Agreement prohibit any acceleration of repayment of any amount outstanding under the LBM Credit Agreement and prohibit termination of the LBM Credit Agreement or withdrawal from escrow of any unused portion of the available loan proceeds under the credit facility, by LBM.

There have been no borrowings by the Company under the LBM Credit Agreement from March 12, 2018 (inception) through June 30, 2019.

The Company incurred approximately \$265 in debt issuance costs associated with the LBM Credit Agreement (including the aforementioned up front commitment fee paid at closing to LBM).

During the three months and six months ended June 30, 2019, the Company recorded interest expense relating to the LBM Credit Agreement of approximately \$50 and \$100, respectively. Included in interest expense for the three months and six months ended June 30, 2019 was approximately \$22 and \$44, respectively, associated with amortization of debt issuance costs. At June 30, 2019 and December 31, 2018, remaining debt issuance costs were approximately \$151 and \$195, respectively (of which approximately \$88 was included in prepaid expenses and other current assets for both periods and approximately \$63 and \$107, respectively, was included in other noncurrent assets in the accompanying condensed consolidated balance sheet). Also included in interest expense for the three months and six months ended June 30, 2019 was approximately \$28 and \$56, respectively, associated with the commitment fee on the

unused portion of the revolving credit facility. At June 30, 2019 and December 31, 2018, approximately \$9 and \$10, respectively, was included in accounts payable in the accompanying condensed consolidated balance sheet. Amounts payable to LBM at June 30, 2019 and December 2018 were settled by the Company in July 2019 and January 2019, respectively.

During the three months and six months ended June 30, 2018, the Company recorded interest expense relating to the LBM Credit Agreement of approximately \$49 and \$59, respectively.

#### Note 14. Income Taxes

The provision (benefit) for income taxes for the three months ended June 30, 2019 and 2018 was approximately \$99 and \$18, respectively. The provision (benefit) for income taxes for the six months ended June 30, 2019 and 2018 was approximately (\$701) and \$35, respectively. The Company has completed a discrete period computation of its provision (benefit) for income taxes for each of the periods presented. The discrete period computation was required as a result of jurisdictions with losses before income taxes for which no tax benefit can be recognized and an inability to generate reliable estimates for results in certain jurisdictions as a result of inconsistencies in generating net operating profits (losses) in those jurisdictions.

The effective tax rate for the three months ended June 30, 2019 and 2018 was 2.7% (provision on a loss) and 0.2% (provision on a loss), respectively. The effective tax rate for the six months ended June 30, 2019 and 2018 was 7.8% (benefit on a loss) and 0.2% (provision on a loss), respectively. For the three months ended June 30, 2019 and 2018, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to net changes in valuation allowances for the periods. For the six months ended June 30, 2019, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to the reversal of previously recorded liabilities for uncertain tax positions (further described below) and net changes in valuation allowances for the period. For the six months ended June 30, 2018, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to net changes in valuation allowances for the periods.

The Company has provided a valuation allowance for its net deferred tax assets as a result of the Company not generating consistent net operating profits in jurisdictions in which it operates. As such, any benefit from deferred taxes in any of the periods presented has been fully offset by changes in the valuation allowance for net deferred tax assets. The Company continues to assess its future taxable income by jurisdiction based on recent historical operating results, the expected timing of reversal of temporary differences, various tax planning strategies that the Company may be able to enact in future periods, the impact of potential operating changes on the business and forecast results from operations in future periods based on available information at the end of each reporting period. To the extent that the Company is able to reach the conclusion that its net deferred tax assets are realizable based on any combination of the above factors in a single, or in multiple, taxing jurisdictions, a reversal of the related portion of the Company's existing valuation allowances may occur.

The Company has a liability for uncertain tax positions related to certain intercompany transactions.

A reconciliation of the beginning and ending amount of unrecognized tax benefits (including accrued interest and penalties) was as follows for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Balance at beginning of period	\$ 102	\$ 1,904	\$ 1,186	\$ 1,775
Additions based on tax positions related to the current year	—	—	—	—
Additions for tax positions of prior years	1	60	2	118
Reductions for tax positions of prior years	—	—	(1,075)	—
Settlements	—	—	—	—
Foreign currency translation adjustments	2	(93)	(8)	(22)
Balance at end of period	<u>\$ 105</u>	<u>\$ 1,871</u>	<u>\$ 105</u>	<u>\$ 1,871</u>

The Company includes interest and penalties related to income taxes as a component of the provision (benefit) for income taxes in the accompanying condensed statement of consolidated operations and comprehensive loss. There were no such interest or penalties included in the provision (benefit) for income taxes for any of the periods presented.

At December 31, 2018, there was approximately \$820 in unrecognized tax benefits (including accrued interest and penalties) that if recognized would affect the annual effective tax rate. Such amounts were included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheet at December 31, 2018. There were no such unrecognized tax benefits at June 30, 2019.



At December 31, 2018, the Company's ExOne GmbH (2010-2013) and ExOne Property GmbH (2013) subsidiaries were under examination by local taxing authorities in Germany. In January 2019, this examination was concluded by the local taxing authorities in Germany without significant adjustment to previously established tax positions. As a result, during the three months ended March 31, 2019, the Company recorded a reversal of certain of its previously recorded liabilities for uncertain tax positions of approximately \$1,075, of which approximately \$257 was offset against net operating loss carryforwards.

#### Note 15. Equity-Based Compensation

On January 24, 2013, the Board adopted the 2013 Equity Incentive Plan (the "Plan"). In connection with the adoption of the Plan, 500,000 shares of common stock were reserved for issuance pursuant to the Plan, with automatic increases in such reserve available each year annually on January 1 from 2014 through 2023 equal to the lesser of 3.0% of the total outstanding shares of common stock as of December 31 of the immediately preceding year, or a number of shares of common stock determined by the Board, provided that the maximum number of shares authorized under the Plan could not exceed 1,992,241 shares, subject to certain adjustments. The maximum number of shares authorized under the Plan was reached on January 1, 2017. At June 30, 2019, 865,506 shares remained available for future issuance under the Plan.

Stock options and restricted stock issued by the Company under the Plan are generally subject to service conditions resulting in annual vesting on the anniversary of the date of grant over a period typically ranging between one and three years. Certain stock options and restricted stock issued by the Company under the Plan vest immediately upon issuance. Stock options issued by the Company under the Plan have contractual lives which expire over a period typically ranging between five and ten years from the date of grant subject to continued service to the Company by the participant.

On February 7, 2018, the Compensation Committee of the Board adopted the 2018 Annual Incentive Program (the "Program") as a subplan under the Plan. The Program provided an opportunity for performance-based compensation to senior executive officers of the Company, among others. The target annual incentive for each Program participant was expressed as a percentage of base salary and was conditioned on the achievement of certain financial goals (as approved by the Compensation Committee of the Board) or a combination of financial and non-financial goals. The Compensation Committee of the Board retained negative discretion over amounts payable under the Program.

The following table summarizes the total equity-based compensation expense recognized by the Company for the periods indicated:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Equity-based compensation expense recognized:				
Stock options	\$ 150	\$ (175)	\$ 316	\$ 28
Restricted stock	245	100	374	206
Other <sup>(a)</sup>	247	70	391	140
Total equity-based compensation expense before income taxes	642	(5)	1,081	374
Benefit for income taxes <sup>(b)</sup>	—	—	—	—
Total equity-based compensation expense net of income taxes	\$ 642	\$ (5)	\$ 1,081	\$ 374

(a) Other represents expense associated with the Program and other employee contractual amounts to be settled in equity.

(b) The benefit for income taxes from equity-based compensation for each of the periods presented has been determined to be \$0 based on valuation allowances against net deferred tax assets.

At June 30, 2019, total future compensation expense related to unvested awards yet to be recognized by the Company was approximately \$541 for stock options and \$498 for restricted stock. Total future compensation expense related to unvested awards yet to be recognized by the Company is expected to be recognized over a weighted-average remaining vesting period of approximately 1.2 years.

The fair value of stock options granted was estimated on the date of grant using the Black-Scholes option pricing model with the following assumptions for the periods indicated:

	Six Months Ended June 30,	
	2019	2018
Weighted average fair value per stock option	\$3.48 - \$3.68	\$3.77
Volatility	54.0% - 60.1%	62.6%
Average risk-free interest rate	2.2% - 2.5%	2.5%
Dividend yield	0.0%	0.0%
Expected term (years)	2.5 - 3.5	3.3

For certain stock option awards in which the expected term of the award is less than the period for which the Company has been publicly traded, volatility is estimated based on the historical volatility of the Company. For certain stock option awards in which the expected term of the award exceeds the period for which the Company has been publicly traded, volatility is estimated based on the historical volatilities of certain peer group companies. The average risk-free rate is based on a weighted average yield curve of risk-free interest rates consistent with the expected term of the awards. Expected dividend yield is based on historical dividend data as well as future expectations. Expected term is calculated using the simplified method as the Company does not have sufficient historical exercise experience upon which to base an estimate.

The activity for stock options was as follows for the periods indicated:

	Six Months Ended June 30,					
	2019			2018		
	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value	Number of Options	Weighted Average Exercise Price	Weighted Average Grant Date Fair Value
Outstanding at beginning of period	621,986	\$ 10.66	\$ 5.52	674,470	\$ 11.58	\$ 6.41
Stock options granted	57,610	\$ 8.33	\$ 3.67	24,000	\$ 8.36	\$ 3.77
Stock options exercised	(36,370)	\$ 7.22	\$ 3.03	—	\$ —	\$ —
Stock options forfeited	(9,773)	\$ 7.67	\$ 3.70	(133,835)	\$ 9.44	\$ 5.15
Stock options expired	(24,666)	\$ 17.10	\$ 10.45	(28,000)	\$ 10.03	\$ 5.19
Outstanding at end of period	608,787	\$ 10.43	\$ 5.33	536,635	\$ 12.05	\$ 6.68
Stock options exercisable at end of period	385,709	\$ 11.56	\$ 6.20	396,627	\$ 13.14	\$ 7.53
Stock options expected to vest at end of period	223,078	\$ 8.48	\$ 3.82	140,008	\$ 8.96	\$ 4.29

At June 30, 2019, intrinsic value associated with stock options exercisable and expected to vest was approximately \$289 and \$251, respectively. The weighted average remaining contractual term of both stock options exercisable and expected to vest at June 30, 2019, was approximately 4.3 years. Stock options with an aggregate intrinsic value of approximately \$326 were exercised by employees during the six months ended June 30, 2019, resulting in proceeds to the Company from the exercise of stock options of approximately \$263 (of which, at June 30, 2019, approximately \$91 remained unsettled). The Company received no income tax benefit related to these exercises. There were no stock option exercises during the six months ended June 30, 2018.

The activity for restricted stock was as follows for the periods indicated:

	Six Months Ended June 30,			
	2019		2018	
	Shares of Restricted Stock	Weighted Average Grant Date Fair Value	Shares of Restricted Stock	Weighted Average Grant Date Fair Value
Outstanding at beginning of period	67,001	\$ 8.30	52,502	\$ 11.07
Restricted stock granted	66,763	\$ 8.98	25,000	\$ 8.21
Restricted stock vested	(37,500)	\$ 8.12	(25,000)	\$ 10.10
Restricted stock forfeited	—	\$ —	—	\$ —
Outstanding at end of period	96,264	\$ 8.84	52,502	\$ 10.17
Restricted stock expected to vest at end of period	96,264	\$ 8.84	52,502	\$ 10.17

Restricted stock that vested during the six months ended June 30, 2019 and 2018, had a fair value of approximately \$356 and \$205, respectively.

During the six months ended June 30, 2019, the Company made cash payments for taxes of approximately \$68 relating to the net settlement of certain equity-based awards. There were no cash payments for taxes or net settlement of equity-based awards during the six months ended June 30, 2018.

#### Note 16. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities which are required to be recorded at fair value, the Company considers the principal or most advantageous market in which the Company would transact and the market-based risk measurements or assumptions that market participants would use in pricing the asset or liability, such as inherent risk, transfer restrictions and credit risk.

The Company applies the following fair value hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- Level 1** Observable inputs such as quoted prices in active markets for identical investments that the Company has the ability to access.
- Level 2** Inputs include:  
 Quoted prices for similar assets or liabilities in active markets;  
 Quoted prices for identical or similar assets or liabilities in inactive markets;  
 Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and  
 Inputs that are derived principally from, or corroborated by, observable market data by correlation or other means.
- Level 3** Inputs that are generally unobservable and typically reflect management's estimates of assumptions that market participants would use in pricing the asset or liability.

The Company is required to disclose its estimate of the fair value of material financial instruments, including those recorded as assets or liabilities in its consolidated financial statements, in accordance with GAAP.

At June 30, 2019 and December 31, 2018, the Company had no financial instruments (assets or liabilities) measured at fair value on a recurring basis.

The carrying values and fair values of other financial instruments (assets and liabilities) not required to be recorded at fair value were as follows as of the dates indicated:

	June 30, 2019		December 31, 2018	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Cash and cash equivalents	\$ 5,462	\$ 5,462	\$ 7,592	\$ 7,592
Restricted cash	\$ 1,790	\$ 1,790	\$ 1,548	\$ 1,548
Debt issuance costs <sup>(a)</sup>	\$ 151	\$ —	\$ 195	\$ —
Current portion of long-term debt <sup>(b)</sup>	\$ 149	\$ 153	\$ 144	\$ 149
Long-term debt – net of current portion <sup>(b)</sup>	\$ 1,288	\$ 1,306	\$ 1,364	\$ 1,384

(a) Represents debt issuance costs associated with the Company's related party revolving credit facility (Note 13) of which \$88 are included in prepaid expenses and other current assets for both periods and \$63 and \$107 are included in other noncurrent assets in the accompanying condensed consolidated balance sheet at June 30, 2019 and December 31, 2018, respectively.

(b) Carrying values at June 30, 2019 and December 31, 2018 are net of unamortized debt issuance costs of approximately \$22 and \$25, respectively.

The carrying amounts of cash and cash equivalents, restricted cash and current portion of long-term debt approximate fair value due to their short-term maturities. The fair value of long-term debt – net of current portion has been estimated by management based on the consideration of applicable interest rates (including certain instruments at variable or floating rates) and other available information (including quoted prices of similar instruments available to the Company). Cash and cash equivalents and restricted cash were classified as Level 1; Current portion of long-term debt and long-term debt – net of current portion were classified as Level 2.

#### Note 17. Concentration of Credit Risk

During the three months and six months ended June 30, 2019 and 2018, the Company conducted a significant portion of its business with a limited number of customers, though not necessarily the same customers for each respective period. For the three months ended June 30, 2019 and 2018, the Company's five most significant customers represented approximately 46.4% and 33.0% of total revenue, respectively. For the six months ended June 30, 2019 and 2018, the Company's five most significant customers represented approximately 33.0% and 25.2% of total revenue, respectively. At June 30, 2019 and December 31, 2018, accounts receivable from the Company's five most significant customers were approximately \$1,681 and \$2,344, respectively.

#### Note 18. Related Party Transactions

Purchases of products and/or services from related parties during the three months ended June 30, 2019 and 2018, were approximately \$43 and \$6, respectively. Purchases of products and/or services from related parties during the six months ended June 30, 2019 and 2018, were approximately \$58 and \$12, respectively. Purchases of products and/or services by the Company during each of the respective periods primarily included website design services and leased office space (through August 2019) from related parties under common control by S. Kent Rockwell (currently the Chairman of the Board of the Company and previously the Executive

Chairman and Chief Executive Officer of the Company). In addition, during the three months ended June 30, 2019, the Company purchased a 3D printing machine and certain ancillary equipment for approximately \$30 from an educational institution determined to be a related party on the basis that S. Kent Rockwell serves as a trustee of the educational institution.

None of the transactions met a threshold requiring review and approval by the Audit Committee of the Board of Directors of the Company.

Amounts due to related parties associated with the purchase of products and/or services at December 31, 2018 were approximately \$1 and are reflected in accounts payable in the accompanying condensed consolidated balance sheet. There were no amounts due to related parties associated with the purchase of products and/or services at June 30, 2019.

The Company also receives the benefit of the corporate use of an airplane from a related party under common control by S. Kent Rockwell for no consideration. The Company estimates the fair market value of the benefits received during each of the three months and six months ended June 30, 2019 was approximately \$3. There were no such benefits received during the three months and six months ended June 30, 2018.

Refer to Note 13 for further discussion relating to a revolving credit facility with a related party entered into in March 2018.

**Note 19. Other Expense (Income) – Net**

Other expense (income) – net consisted of the following for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2019	2018	2019	2018
Interest income	\$ (2)	\$ (3)	\$ (8)	\$ (22)
Foreign currency losses (gains) – net	29	(54)	51	(99)
Bank fees	23	24	48	43
Other – net	7	(19)	(22)	(20)
	<u>\$ 57</u>	<u>\$ (52)</u>	<u>\$ 69</u>	<u>\$ (98)</u>

**Note 20. Subsequent Events**

The Company has evaluated all of its activities and concluded that no subsequent events have occurred that would require recognition in the condensed consolidated financial statements or disclosure in the notes to the condensed consolidated financial statements.

## **Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.**

**(dollars in thousands, except per-share amounts)**

The following discussion and analysis should be read together with our unaudited condensed consolidated financial statements and related notes thereto set forth in this Quarterly Report on Form 10-Q as well as our Annual Report on Form 10-K for the year ended December 31, 2018.

This Quarterly Report on Form 10-Q may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act with respect to our future financial or business performance, strategies, or expectations. Forward-looking statements typically are identified by words or phrases such as "trend," "potential," "opportunity," "pipeline," "believe," "comfortable," "expect," "anticipate," "current," "intention," "estimate," "position," "assume," "outlook," "continue," "remain," "maintain," "sustain," "seek," "achieve," as well as similar expressions, or future or conditional verbs such as "will," "would," "should," "could" and "may."

We caution that forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Forward-looking statements speak only as of the date they are made and we assume no duty to and do not undertake to update forward-looking statements. Actual results could differ materially from those anticipated in forward-looking statements and future results could differ materially from historical performance.

In addition to items described under "Risk Factors" in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018, the following factors, among others, could cause results to differ materially from forward-looking statements or historical performance: our ability to consistently generate operating profits; fluctuations in our revenue and operating results; our competitive environment and our competitive position; our ability to enhance our current 3D printing machines and technology and develop new 3D printing machines; our ability to qualify more industrial materials in which we can print; demand for our products; the availability of skilled personnel; the impact of loss of key management; the impact of market conditions and other factors on the carrying value of long-lived assets; our ability to continue as a going concern; the impact of customer specific terms in machine sale agreements on the period in which we recognize revenue; risks related to global operations including effects of foreign currency; the adequacy of sources of liquidity; the amount and sufficiency of funds for required capital expenditures, working capital, and debt service; dependency on certain critical suppliers; nature or impact of alliances and strategic investments; reliance on critical information technology systems; the effect of litigation, contingencies and warranty claims; liabilities under laws and regulations protecting the environment; the impact of governmental laws and regulations; operating hazards, war, terrorism and cancellation or unavailability of insurance coverage; the impact of disruption of our manufacturing facilities or ExOne Adoption Centers ("EACs"); the adequacy of our protection of our intellectual property; and expectations regarding demand for our industrial products, operating revenue, operating and maintenance expenses, insurance expenses and deductibles, interest expenses, debt levels, and other matters with regard to outlook.

### **Overview**

#### ***Our Business***

We are a global provider of 3D printing machines and 3D printed and other products, materials and services to industrial customers. Our business primarily consists of manufacturing and selling 3D printing machines and printing products to specification for our customers using our installed base of 3D printing machines. Our machines serve direct and indirect applications. Direct printing produces a component; indirect printing makes a tool to produce a component. We offer pre-production collaboration and print products for customers through our network of EACs. We also supply the associated materials, including consumables and replacement parts, and other services, including training and technical support, that are necessary for purchasers of our 3D printing machines to print products. We believe that our ability to print in a variety of industrial materials, as well as our industry-leading volumetric output (as measured by build box size and printing speed), uniquely position us to serve the needs of industrial customers.

#### ***Outlook***

We plan to grow our market leading position with respect to 3D printing solutions for customers and continue advancing our innovations in direct and indirect printing, principally through an expansion of our fine powder (less than 20 micron) direct printing capabilities and development activities associated with large format direct and indirect 3D printing machines. Our focus continues to be industrial markets for utilization of binder jetting technologies for non-polymer based materials. Our strength in industrial markets is rooted in our diverse material capabilities, our lower cost of adoption versus other competing technologies, our faster printing speeds and our scalability to larger product size.

#### ***Backlog***

At June 30, 2019, our backlog was approximately \$23,100 of which approximately \$19,700 was expected to be fulfilled during the twelve months following such date. At December 31, 2018, our backlog was approximately \$12,300.

**Seasonality**

Purchases of our 3D printing machines are often subject to the capital expenditure cycles of our customers. Generally, 3D printing machine sales are higher in our third and fourth quarters than in our first and second quarters; however, as acceptance of our 3D printing machines as a credible alternative to traditional methods of production grows, we expect to limit the seasonality we experience.

**Results of Operations**

**Net Loss**

Net loss for the three months ended June 30, 2019 was \$3,789, or \$0.23 per basic and diluted share, compared with a net loss of \$8,037 or \$0.50 per basic and diluted share, for the three months ended June 30, 2018. Net loss for the six months ended June 30, 2019, was \$8,285, or \$0.51 per basic and diluted share, compared with a net loss of \$14,422 or \$0.89 per basic and diluted share, for the six months ended June 30, 2018. The decrease in our net loss for both periods was principally due to an increase in our gross profit (driven by higher revenues) combined with decreases in our operating expenses (research and development and selling, general and administrative expense) mostly due to our 2018 global cost realignment program (all changes further described below).

**Revenue**

The following table summarizes revenue by product group:

	Three Months Ended June 30,				Six Months Ended June 30,			
	2019		2018		2019		2018	
3D printing machines	\$ 9,231	60.4%	\$ 3,213	29.6%	\$ 12,560	50.5%	\$ 7,734	34.0%
3D printed and other products, materials and services	6,048	39.6%	7,644	70.4%	12,298	49.5%	15,016	66.0%
	<u>\$ 15,279</u>	<u>100.0%</u>	<u>\$ 10,857</u>	<u>100.0%</u>	<u>\$ 24,858</u>	<u>100.0%</u>	<u>\$ 22,750</u>	<u>100.0%</u>

Revenue for the three months ended June 30, 2019 was \$15,279, compared with revenue of \$10,857 for the three months ended June 30, 2018, an increase of \$4,422, or 40.7%. The increase in revenue resulted from an increase in revenue attributable to our 3D printing machines product group, offset by a decrease in revenue attributable to our 3D printed and other products, materials and services product group. The increase in revenues from 3D printing machines resulted from a higher volume of units sold (13 3D printing machines sold during the three months ended June 30, 2019, as compared to seven 3D printing machines sold during the three months ended June 30, 2018), and a favorable mix of machines sold, with a greater share of indirect printers sold as compared to direct printers (such indirect machines generally bearing a higher average selling price as compared to direct machines). The decrease in revenues from 3D printed and other products, materials and services principally resulted from a decrease in revenues from our direct EAC printing operations (mostly due to the timing of orders from a key customer), indirect EAC printing operations (mostly due to lower volumes of sale of printed products and the impact of our exit of our Houston, Texas facility in August 2018, such facility contributing approximately \$400 in revenue during the three months ended June 30, 2018) and materials (mostly due reductions in pricing and the timing of certain customer orders). Revenue was also impacted by approximately \$200 due to unfavorable exchange rates (principally the euro versus the United States dollar) during the three months ended June 30, 2019.

Revenue for the six months ended June 30, 2019, was \$24,858 compared with revenue of \$22,750 for the six months ended June 30, 2018, an increase of \$2,108, or 9.3%. The increase in revenue resulted from an increase in revenue attributable to our 3D printing machines product group, offset by a decrease in revenue attributable to our 3D printed and other products, materials and services product group. The increase in revenues from 3D printing machines resulted from a higher volume of units sold (21 3D printing machines sold during the six months ended June 30, 2019, as compared to 13 3D printing machines sold during the six months ended June 30, 2018), and a favorable mix of machines sold, with a greater share of indirect printers sold as compared to direct printers (such indirect machines generally bearing a higher average selling price as compared to direct machines). The decrease in revenues from 3D printed and other products, materials and services principally resulted from a decrease in revenues from our direct EAC printing operations (mostly due to the timing of orders from a key customer), indirect EAC printing operations (mostly due to lower volumes of sale of printed products and the impact of our exit of our Houston, Texas facility in August 2018, such facility contributing approximately \$800 in revenue during the six months ended June 30, 2018) and materials (mostly due reductions in pricing and the timing of customer orders). Revenue was also impacted by approximately \$600 due to unfavorable exchange rates (principally the euro versus the United States dollar) during the six months ended June 30, 2019.

#### ***Cost of Sales and Gross Profit***

Cost of sales for the three months ended June 30, 2019 was \$10,137, compared with cost of sales of \$9,267 for the three months ended June 30, 2018, an increase of \$870, or 9.4%. Gross profit for the three months ended June 30, 2019 was \$5,142, compared with gross profit of \$1,590 for the three months ended June 30, 2018. Gross profit percentage was 33.7% for the three months ended June 30, 2019, compared with 14.6% for the three months ended June 30, 2018. The increase in our gross profit was primarily due to an increase in our volume of products sold resulting in improved leverage of our fixed cost base and cost savings associated with our 2018 global cost realignment program (primarily costs associated with our former Houston, Texas facility and a reduction in consulting and professional fees of approximately \$28), offset by an unfavorable product mix. In addition, we realized a net benefit in cost of sales associated with a reduction in net charges associated with slow-moving, obsolete and lower of cost or net realizable value inventories of approximately \$889 (principally due to the \$561 charge associated with our industrial microwave inventories recorded during the three months ended June 30, 2018). Offsetting this net benefit in cost of sales was net negative experience related to product warranties of approximately \$336.

Cost of sales for the six months ended June 30, 2019 was \$17,074, compared with cost of sales of \$18,544 for the six months ended June 30, 2018, a decrease of \$1,470, or 7.9%. Gross profit for the six months ended June 30, 2019 was \$7,784, compared with gross profit of \$4,206 for the six months ended June 30, 2018. Gross profit percentage was 31.3% for the six months ended June 30, 2019, compared with 18.5% for the six months ended June 30, 2018. The increase in our gross profit was primarily due to an increase in our volume of products sold resulting in improved leverage of our fixed cost base and cost savings associated with our 2018 global cost realignment program (primarily costs associated with our former Houston, Texas facility and a reduction in consulting and professional fees of approximately \$167), offset by an unfavorable product mix. In addition, we realized net benefits in cost of sales associated with a reduction in net charges associated with slow-moving, obsolete and lower of cost or net realizable value inventories of approximately \$798 (principally due to the \$561 charge associated with our industrial microwave inventories recorded during the three months ended June 30, 2018) and the absence of approximately \$258 (approximately \$17 in other exit costs and \$241 in asset impairments) in charges associated with our consolidation of our 3D printing operations from our facility in Desenzano del Garda, Italy into our Gersthofen, Germany facility. Offsetting these net benefits in cost of sales was net negative experience related to product warranties of approximately \$536.

#### ***Research and Development***

Research and development expenses for the three months ended June 30, 2019 were \$2,537, compared with research and development expenses of \$3,235 for the three months ended June 30, 2018, a decrease of \$698, or 21.6%. The decrease in research and development expenses was primarily due to decreases in employee-related costs (principally salaries and benefits) of approximately

\$277 and consulting and professional fees of approximately \$519 (both reductions primarily as a result of our 2018 global cost realignment program). These decreases were offset by an increase in material costs of approximately \$144, primarily associated with our development of the X1 25PRO™ direct 3D printing machine and S-MAX PRO™ indirect 3D printing machine.

Research and development expenses for the six months ended June 30, 2019, were \$4,969 compared with research and development expenses of \$6,030 for the six months ended June 30, 2018, a decrease of \$1,061, or 17.6%. The decrease in research and development expenses was primarily due to decreases in employee-related costs (principally salaries and benefits) of approximately \$460 and consulting and professional fees of approximately \$779 (both reductions primarily as a result of our 2018 global cost realignment program). These decreases were offset by an increase in material costs of approximately \$154, primarily associated with our development of the X1 25PRO™ direct 3D printing machine and S-MAX PRO™ indirect 3D printing machine.

#### ***Selling, General and Administrative***

Selling, general and administrative expenses for the three months ended June 30, 2019 were \$6,167, compared with selling, general and administrative expenses of \$6,353 for the three months ended June 30, 2018, a decrease of \$186, or 2.9%. The decrease in selling, general and administrative expenses was principally due to a decrease in employee-related costs (salaries and benefits) of approximately \$1,172 (including approximately \$708 in employee termination costs associated with the change in our Chief Executive Officer and our 2018 global cost realignment program recorded during the three months ended June 2018) as well as a reduction in consulting and professional fees (primarily as a result of our 2018 global cost realignment program) of approximately \$72. These decreases were offset by increases associated with equity-based compensation of approximately \$648 (primarily due to pre-vesting forfeitures associated with the change in our Chief Executive Officer in June 2018), and an increase in costs associated with trade show related activities of approximately \$469, primarily associated with our investment in the GIFA international foundry show in Dusseldorf, Germany (a once every four-year event).

Selling, general and administrative expenses for the six months ended June 30, 2019 were \$11,590, compared with selling, general and administrative expenses of \$12,555 for the six months ended June 30, 2018, a decrease of \$965, or 7.7%. The decrease in selling, general and administrative expenses was principally due to a decrease in employee-related costs (salaries and benefits) of approximately \$1,648 (including approximately \$708 in employee termination costs associated with the change in our Chief Executive Officer and our 2018 global cost realignment program, recorded during the three months ended June 2018), a reduction in consulting and professional fees (primarily as a result of our 2018 global cost realignment program) of approximately \$182 and an increase in net recoveries for bad debts of approximately \$113. These decreases were offset by increases associated with equity-based compensation of approximately \$704 (primarily due to pre-vesting forfeitures associated with the change in our Chief Executive Officer in June 2018), and an increase in costs associated with trade show related activities of approximately \$481, primarily associated with our investment in the GIFA international foundry show in Dusseldorf, Germany (a once every four-year event).

#### ***Interest Expense***

Interest expense for the three months ended June 30, 2019 was \$71, compared with interest expense of \$73 for the three months ended June 30, 2018, a decrease of \$2, or 2.7%. Amounts for both periods consisted principally of interest expense associated with our revolving credit facility with a related party and the building note payable associated with our global headquarters in North Huntingdon, Pennsylvania.

Interest expense for the six months ended June 30, 2019 was \$142, compared with interest expense of \$106 for the six months ended June 30, 2018, an increase of \$36, or 34.0%. The increase in interest expense was principally due to interest incurred in connection with our revolving credit facility with a related party entered into on March 12, 2018 (approximately \$100 during the six months ended June 30, 2019 as compared to \$59 during the six months ended June 30, 2018).

#### ***Other Expense (Income) – Net***

Other expense (income) – net for the three months ended June 30, 2019 was \$57, compared with other expense (income) – net of (\$52) for the three months ended June 30, 2018. Other expense (income) – net for the six months ended June 30, 2019 was \$69, compared with other expense (income) – net of (\$98) for the six months ended June 30, 2018. Amounts for each of the periods consisted principally of interest income on cash and cash equivalents balances and net foreign exchange losses (gains) on commercial transactions and certain intercompany transactions between subsidiaries either settled or planned for settlement in the foreseeable future. Changes between each of the periods consisted principally of changes in net foreign exchange losses (gains) based principally on changes in the euro and Japanese yen against the United States dollar.

#### ***Provision (Benefit) for Income Taxes***

The provision (benefit) for income taxes for the three months ended June 30, 2019 and 2018 was \$99 and \$18, respectively. The provision (benefit) for income taxes for the six months ended June 30, 2019 and 2018 was (\$701) and \$35, respectively. We have completed a discrete period computation of our provision (benefit) for income taxes for each of the periods presented. The discrete period computation was required as a result of jurisdictions with losses before income taxes for which no tax benefit can be



recognized and an inability to generate reliable estimates for results in certain jurisdictions as a result of inconsistencies in generating net operating profits (losses) in those jurisdictions.

The effective tax rate for the three months ended June 30, 2019 and 2018 was 2.7% (provision on a loss) and 0.2% (provision on a loss), respectively. The effective tax rate for the six months ended June 30, 2019 and 2018 was 7.8% (benefit on a loss) and 0.2% (provision on a loss), respectively. For the three months ended June 30, 2019 and 2018, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to net changes in valuation allowances for the periods. For the six months ended June 30, 2019, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to the reversal of previously recorded liabilities for uncertain tax positions (further described below) and net changes in valuation allowances for the period. For the six months ended June 30, 2018, the effective tax rate differs from the United States federal statutory rate of 21.0% primarily due to net changes in valuation allowances for the periods.

We have provided a valuation allowance for our net deferred tax assets as a result of our inability to generate consistent net operating profits in jurisdictions in which we operate. As such, any benefit from deferred taxes in any of the periods presented in our condensed consolidated financial statements has been fully offset by changes in the valuation allowance for net deferred tax assets. We continue to assess our future taxable income by jurisdiction based on our recent historical operating results, the expected timing of reversal of temporary differences, various tax planning strategies that we may be able to enact in future periods, the impact of potential operating changes on our business and our forecast results from operations in future periods based on available information at the end of each reporting period. To the extent that we are able to reach the conclusion that net deferred tax assets are realizable based on any combination of the above factors in a single, or multiple, taxing jurisdictions, a reversal of the related portion of our existing valuation allowances may occur.

At December 31, 2018, our ExOne GmbH (2010-2013) and ExOne Property GmbH (2013) subsidiaries were under examination by local taxing authorities in Germany. In January 2019, this examination was concluded by the local taxing authorities in Germany without significant adjustment to previously established tax positions. As a result, during the three months ended March 31, 2019, we recorded a reversal of certain of our previously recorded liabilities for uncertain tax positions of approximately \$1,075, of which approximately \$257 was offset against net operating loss carryforwards.

### ***Restructuring***

In December 2017 we committed to a plan to consolidate certain of our 3D printing operations from our Desenzano del Garda, Italy facility into our Gersthofen, Germany facility. These actions were taken as part of our efforts to optimize our business model and maximize our facility utilization. As a result of these actions, during the three months ended December 31, 2017, we recorded a charge of approximately \$72 split between cost of sales (\$19) and selling, general and administrative expense (\$53) associated with involuntary employee terminations related to this plan. During the three months ended March 31, 2018, we recorded an additional charge of approximately \$245 associated with other exit costs (\$17) and asset impairments (\$228) related to this plan. During the three months ended June 30, 2018, we recorded an additional charge of approximately \$13 associated with asset impairments related to this plan. In addition, during the three months ended June 30, 2018, we recorded a gain from disposal of certain property and equipment of approximately \$51 (recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss). Charges associated with other exit costs recorded during the six months ended June 30, 2018 were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss. Charges associated with asset impairments recorded during the three and six months ended June 30, 2018 were recorded to cost of sales as a component of depreciation expense in the accompanying condensed statement of consolidated operations and comprehensive loss. Other exit costs relate to the remaining facility rent due under a non-cancellable operating lease following the cessation of operations at the facility in January 2018. Asset impairment charges relate to certain leasehold improvements associated with the exited facility and other equipment which we abandoned. There are no additional charges expected to be incurred associated with this plan in future periods. We settled all amounts associated with involuntary employee terminations and other exit costs (remaining facility rent payments) during 2018.

The consolidation of our 3D printing operations from our Desenzano del Garda, Italy facility into our Gersthofen, Germany facility is not expected to have a significant impact on our revenues in future periods. We expect annualized cost savings related to this consolidation of approximately \$875, with approximately \$600 in the form of cash cost savings (principally employee-related and other operating costs) and approximately \$275 in the form of reduced depreciation expense. Cost savings associated with the exit of this facility are expected to benefit cost of sales by approximately \$625 and selling, general and administrative expenses by approximately \$250. We expect to invest these cost savings into technological or process advancements that support either long-term cost benefits or revenue growth.

### ***Impairment***

During the three months ended June 30, 2019, as a result of continued operating losses and cash flow deficiencies, we identified a triggering event requiring a test for the recoverability of long-lived assets held and used at the asset group level. Assessing the recoverability of long-lived assets held and used requires significant judgments and estimates by management.

For purposes of testing long-lived assets for recoverability, we operate as three separate asset groups: United States, Europe and Japan. In assessing the recoverability of long-lived assets held and used, we determined the carrying amount of long-lived assets held and used to be in excess of the estimated future undiscounted net cash flows of the related assets. We proceeded to determine the fair value of our long-lived assets held and used, principally through use of the market approach. Our use of the market approach included consideration of market transactions for comparable assets. Management concluded that the fair value of long-lived assets held and used exceeded their carrying value and as such no impairment loss was recorded.

A significant decrease in the market price of a long-lived asset, adverse change in the use or condition of a long-lived asset, adverse change in the business climate or legal or regulatory factors impacting a long-lived asset and continued operating losses and cash flow deficiencies associated with a long-lived asset, among other indicators, could cause a future assessment to be performed which may result in an impairment of long-lived assets held and used, resulting in a material adverse effect on our financial position and results of operations.

#### ***Impact of Inflation***

Our results of operations and financial condition are presented based on historical cost. While it is difficult to accurately measure the impact of inflation due to the imprecise nature of the estimates required, we believe the effects of inflation, if any, on our results of operations and financial condition are not significant.

#### **Liquidity and Capital Resources**

##### ***Liquidity***

We have incurred a net loss in each of our annual periods since our inception. In addition, we incurred a net loss of approximately \$3,789 and \$8,285 for the three months and six months ended June 30, 2019, respectively. At June 30, 2019, we had approximately \$5,462 in unrestricted cash and cash equivalents.

We have received cumulative unrestricted net proceeds from the sale of our common stock (through our initial public offering and subsequent secondary offerings) of approximately \$168,361 to fund our operations. In March 2018, we entered into a three-year, \$15,000 revolving credit facility with a related party (further described below) to provide additional funding for working capital and general corporate purposes. In June 2018, we initiated a 2018 global cost realignment program focused on a reduction in our production overhead costs and operating expenses in an effort to drive efficiency in our operations and preserve capital.

We believe that our existing capital resources will be sufficient to support our operating plan. If we anticipate that our actual results will differ from our operating plan, we believe we have sufficient capabilities to enact cost savings measures to preserve capital (in addition to the costs savings measures associated with our 2018 global cost realignment program further described above). We may also seek to raise additional capital to support our growth through additional debt, equity or other alternatives (including asset sales) or a combination thereof.

##### ***Related Party Revolving Credit Facility***

On March 12, 2018, we and our ExOne Americas LLC and ExOne GmbH subsidiaries, as guarantors (collectively, the "Loan Parties"), entered into a Credit Agreement and related ancillary agreements with LBM Holdings, LLC ("LBM"), a company controlled by S. Kent Rockwell, who was our Executive Chairman (a related party) at such date and is currently Chairman of our Board of Directors (the "Board"), relating to a \$15,000 revolving credit facility (the "LBM Credit Agreement") to provide additional funding for working capital and general corporate purposes. The LBM Credit Agreement provides for a term of three years (through March 12, 2021) and bears interest at a rate of one month LIBOR plus an applicable margin of 500 basis points (approximately 7.4% and 7.5% at June 30, 2019 and December 31, 2018, respectively). The LBM Credit Agreement requires a commitment fee of 75 basis points, or 0.75%, on the unused portion of the facility, payable monthly in arrears. In addition, an up-front commitment fee of 125 basis points, or 1.25% (approximately \$188), was required at closing. Borrowings under the LBM Credit Agreement are required to be in minimum increments of \$1,000. We may terminate or reduce the credit commitment at any time during the term of the LBM Credit Agreement without penalty. We may also make prepayments against outstanding borrowings under the LBM Credit Agreement at any time without penalty. Borrowings under the LBM Credit Agreement have been collateralized by the accounts receivable, inventories and machinery and equipment of the Loan Parties. At inception and June 30, 2019 the total estimated value of collateral was in significant excess of the maximum borrowing capacity under the LBM Credit Agreement.

The LBM Credit Agreement contains several affirmative covenants including prompt payment of liabilities and taxes; maintenance of insurance, properties, and licenses; and compliance with laws. The LBM Credit Agreement also contains several negative covenants including restricting the incurrence of certain additional debt; prohibiting future liens (other than permitted liens); prohibiting investment in third parties; limiting the ability to pay dividends; limiting mergers, acquisitions, and dispositions; and limiting the sale of certain property and equipment of the Loan Parties. The LBM Credit Agreement does not contain any financial

covenants. The LBM Credit Agreement also contains events of default, including, but not limited to, cross-default to certain other debt, breaches of representations and warranties, change of control events and breaches of covenants.

LBM was determined to be a related party based on common control by S. Kent Rockwell. Accordingly, we do not consider the LBM Credit Agreement indicative of a fair market value lending. Prior to execution, the LBM Credit Agreement was reviewed and approved by the Audit Committee of the Board and subsequently by a sub-committee of independent members of the Board. At the time of execution of the LBM Credit Agreement, the \$15,000 in available loan proceeds was deposited into an escrow account with an unrelated, third party financial institution acting as escrow agent pursuant to a separate Escrow Agreement by and among the parties. Loan proceeds held in escrow are available to us upon our submission to the escrow agent of a loan request. Such proceeds will not be available to LBM until payment in-full of the obligations under the LBM Credit Agreement and termination of the LBM Credit Agreement. Payments of principal and other obligations will be made to the escrow agent, while interest payments will be made directly to LBM. Provided there exists no potential default or event of default, the LBM Credit Agreement and Escrow Agreement prohibit any acceleration of repayment of any amount outstanding under the LBM Credit Agreement and prohibit termination of the LBM Credit Agreement or withdrawal from escrow of any unused portion of the available loan proceeds under the credit facility, by LBM.

There were no borrowings by us under the LBM Credit Agreement from March 12, 2018 (inception) through June 30, 2019.

#### **Cash Flows**

The following table summarizes the significant components of cash flows for each of the six month periods ended June 30, 2019 and 2018, and our cash, cash equivalents, and restricted cash balances at June 30, 2019 and December 31, 2018:

	Six Months Ended	
	June 30,	
	2019	2018
Net cash used for operating activities	\$ (1,497)	\$ (7,873)
Net cash used for investing activities	(420)	(794)
Net cash provided by (used for) financing activities	22	(267)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	7	(197)
Net change in cash, cash equivalents, and restricted cash	<u>\$ (1,888)</u>	<u>\$ (9,131)</u>
	<b>June 30,</b>	<b>December 31,</b>
	<b>2019</b>	<b>2018</b>
Cash and cash equivalents	\$ 5,462	\$ 7,592
Restricted cash	1,790	1,548
Cash, cash equivalents, and restricted cash	<u>\$ 7,252</u>	<u>\$ 9,140</u>

#### **Operating Activities**

Net cash used for operating activities for the six months ended June 30, 2019 was \$1,497, compared with net cash used for operating activities of \$7,873 for the six months ended June 30, 2018. The net decrease in outflows of \$6,376 was due to a decrease in our net loss net of noncash items (changes further described above) and a net decrease in working capital attributable to a decrease in net cash outflows related to inventory production of our 3D printing machines and the timing of payments to our suppliers and vendors for our production and operating expenses, partially offset by a decrease in net cash inflows from customers (principally due to timing of cash collections on 3D printing machine sales).

#### **Investing Activities**

Net cash used for investing activities for the six months ended June 30, 2019 was \$420, compared with net cash used for investing activities of \$794 for the six months ended June 30, 2018.

Activity for both periods included cash outflows for capital expenditures (consistent with our operating plans), offset by proceeds from the sale of property and equipment.

We expect our remaining 2019 capital expenditures to be limited to spending associated with sustaining our existing operations and strategic asset acquisition and deployment (additional estimated spending of approximately less than \$1,000). We also expect to receive net proceeds from the sale of our former Houston, Texas facility of approximately \$1,000 during 2019.

### ***Financing Activities***

Net cash provided by financing activities for the six months ended June 30, 2019 was \$22, compared with net cash used for financing activities of \$267 for the six months ended June 30, 2018.

For the six months ended June 30, 2019, net cash provided by financing activities included approximately \$171 in cash inflows associated with proceeds from the exercise of stock options by employees. This amount was offset by approximately \$68 in cash outflows associated with taxes related to the net settlement of equity-based awards. Net cash outflows for the six months ended June 30, 2018 included cash outflows of approximately \$188 in debt issuance costs associated with our revolving credit facility with a related party (further described above). Activity for both periods also included principal payments on outstanding debt.

### **Off Balance Sheet Arrangements**

In the normal course of our operations, our ExOne GmbH subsidiary issues financial guarantees and letters of credit to third parties in connection with certain commercial transactions requiring security. At June 30, 2019, total outstanding financial guarantees and letters of credit issued by us were approximately \$1,375 (€1,209) with expiration dates ranging from July 2019 through February 2023. At December 31, 2018, total outstanding financial guarantees and letters of credit issued by us were approximately \$1,136 (€992). For further discussion related to financial guarantees and letters of credit issued by us, refer to Note 12 to the condensed consolidated financial statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

### **Recently Issued and Adopted Accounting Guidance**

Refer to Note 1 to the condensed consolidated financial statements in Part I, Item 1 of this Quarterly Report on Form 10-Q.

### **Critical Accounting Policies and Estimates**

Refer to Note 1 to the consolidated financial statements in Part II, Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2018.

### **Item 3. Quantitative and Qualitative Disclosures About Market Risk.**

We are a smaller reporting company as defined by Rule 12b-2 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and are not required to provide the information under this item.

### **Item 4. Controls and Procedures.**

#### ***Evaluation of Disclosure Controls and Procedures***

Our management, including our Chief Executive Officer and Chief Financial Officer, performed an evaluation of the effectiveness of our disclosure controls and procedures as of June 30, 2019. These controls and procedures are designed to provide reasonable assurance that the information required to be disclosed in the reports that we file or submit under the Exchange Act are recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, in a manner to allow timely decisions regarding required disclosures. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of June 30, 2019 were effective.

#### ***Changes in Internal Control over Financial Reporting***

There were no changes in our internal controls over financial reporting during the three months ended June 30, 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 subject to various litigation, claims, and proceedings which have been or may be instituted or asserted from time to time in the ordinary course of business. Management does not believe that the outcome of any pending or threatened matters will have a material adverse effect, individually or in the aggregate, on our financial position, results of operations or cash flows.

### Item 1A. Risk Factors.

There have been no material changes from the risk factors as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2018.

### Item 5. Other Information.

On August 6, 2019, Brian W. Smith informed the Board that he would be leaving the Company to dedicate more time to his external strategic business and philanthropic activities effective August 24, 2019.

### Item 6. Exhibits.

(a)(3) Exhibits

The Exhibits listed on the accompanying Index to Exhibits are filed as part of this Quarterly Report on Form 10-Q.

## EXHIBIT INDEX

The agreements and other documents filed as exhibits to this report are not intended to provide factual information or other disclosure other than with respect to the terms of the agreements or other documents themselves, and you should not rely on them for that purpose. In particular, any representations and warranties made by us in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs as of the date they were made or at any other time.

<b>Exhibit Number</b>	<b>Description</b>	<b>Method of Filing</b>
10.1	<a href="#">Employment Agreement dated May 15, 2019 between the Company and John F. Hartner.</a>	Filed herewith.
31.1	<a href="#">Rule 13(a)-14(a) Certification of Principal Executive Officer.</a>	Filed herewith.
31.2	<a href="#">Rule 13(a)-14(a) Certification of Principal Financial Officer.</a>	Filed herewith.
32	<a href="#">Section 1350 Certification of Principal Executive Officer and Principal Financial Officer.</a>	Filed herewith.
101.INS	XBRL Instance Document.	Filed herewith.
101.SCH	XBRL Taxonomy Extension Schema Document.	Filed herewith.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.	Filed herewith.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.	Filed herewith.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.	Filed herewith.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.	Filed herewith.

### Signatures

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

The ExOne Company

By: /s/ John F. Hartner  
John F. Hartner  
*Chief Executive Officer*  
*(Principal Executive Officer)*

Date: August 7, 2019

By: /s/ Douglas D. Zemba  
Douglas D. Zemba  
*Chief Financial Officer*  
*(Principal Financial Officer and Principal Accounting Officer)*

Date: August 7, 2019

## EMPLOYMENT AGREEMENT

EMPLOYMENT AGREEMENT (“**Agreement**”) dated as of May 15, 2019 between The ExOne Company, a Delaware corporation (the “**Company**”), and John F. Hartner (the “**Executive**”).

WHEREAS, the Board of Directors of the Company (“**Board**”) has determined to appoint the Executive to serve as the Chief Executive Officer of the Company, and the Executive has agreed to serve as the Chief Executive Officer of the Company, on the terms and conditions set forth in this Agreement.

In order to effect the foregoing, the Company and the Executive wish to enter into this Agreement on the terms and conditions set forth below. Accordingly, in consideration of the premises and the respective covenants and agreements of the parties herein contained, and intending to be legally bound hereby, the parties hereto agree as follows:

## ARTICLE 1

## DEFINITIONS

SECTION 1.01. *Definitions.* For purposes of this Agreement, the following terms have the meanings set forth below:

“**Affiliate**” means (i) any entity that, directly or indirectly, is controlled by the Company, (ii) any entity in which the Company has a significant equity interest, and (iii) an affiliate of the Company as defined in Rule 12b-2 promulgated under Section 12 of the Securities Exchange Act of 1934, as amended.

“**Base Salary**” has the meaning set forth in Section 4.01.

“**Cause**” means (a) gross negligence in the performance of the Executive’s duties which results in material financial harm to the Company; (b) the Executive’s conviction of, or plea of guilty or nolo contendere to, (i) any felony, or (ii) any misdemeanor involving fraud, embezzlement or theft; (c) the Executive’s refusal to perform his duties and responsibilities with the Company, without the same being corrected within fifteen (15) days after being given written notice thereof; (d) the material breach by the Executive of any of the covenants contained in Articles 6 or 7 of this Agreement; (e) the Executive’s willful violation of any material provision of the Company’s code of ethics and business conduct for executives and management employees; or (f) the Executive’s willful engagement in conduct that is demonstrably and materially injurious to the Company, monetarily or otherwise. The Executive may be terminated for Cause hereunder only by majority vote of all members of the Board.

“**COBRA**” has the meaning set forth in Section 5.05.

“**COBRA Continuation Period**” has the meaning set forth in Section 5.05.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Date of Termination**” has the meaning set forth in Section 5.07.

“**Employment Period**” has the meaning set forth in Section 2.01.

“**Good Reason**” means, without the Executive’s written consent, (a) the material diminution of the Executive’s duties or responsibilities, including the assignment of any duties and responsibilities materially inconsistent with his position; (b) a reduction in the Executive’s Base Salary below \$375,000 per annum; or (c) any person, partnership, corporation or other legal entity acquires all or substantially all of the assets of the Company; provided that any acquisition of the assets relating to one business line of the Company will not be deemed to be an acquisition of

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substantially all of the assets of the Company for purposes of this definition of "Good Reason". Notwithstanding the forgoing, in order for the Executive to terminate for Good Reason under clauses (a) and (b) above, (a) the Executive must give written notice of the event that constitutes Good Reason under clauses (a) and (b) above within sixty (60) days after such event occurs, and any failure to give such written notice within such period will result in a waiver by the Executive of his right to terminate for Good Reason as a result of such act, (b) the event must remain uncorrected by the Company for thirty (30) days following such notice (the "Cure Period"), and (c) such termination must occur within sixty (60) days after the expiration of the Cure Period. In addition, in order for the Executive to terminate for Good Reason under clause (c) above, the Executive must give written notice to the Company or any successor of the Company that assumes this Agreement in connection with the sale of all or substantially all of the assets of the Company within thirty (30) days after the consummation of such sale and such termination must occur within sixty (60) days after the date of the notice of termination.

**"Notice of Termination"** has the meaning set forth in Section 5.06.

**"Person"** shall have the meaning ascribed to such term in Section 3(a)(9) of the Securities Exchange Act of 1934, as amended and used in Sections 13(d) and 14(d) thereof, including a "group" as defined in Section 13(d).

**"Permanent Disability"** means the Executive becomes permanently disabled within the meaning of the long term disability plan of the Company applicable to the Executive under circumstances whereby the Executive is entitled to receive immediate benefits thereunder.

**"Reimbursable Expenses"** has the meaning set forth in Section 4.05. In addition, any Reimbursable Expense shall be made only in accordance with the following conditions:

(a) The reimbursement of any eligible expense shall be made on or before the last day of the Executive's taxable year following the taxable year in which the expense was incurred; and

(b) The right to reimbursement shall not be subject to liquidation or exchange for another benefit.

**"Release"** has the meaning set forth in Section 5.02.

**"Restricted Territory"** means the counties, towns, cities, states or other political subdivisions of any country in which the Company or its Affiliates operates or does business.

**"Start Date"** has the meaning set forth in Section 2.01.

## ARTICLE 2

### EMPLOYMENT

SECTION 2.01. *Employment.* The Company shall employ the Executive, and the Executive shall serve the Company, as the Chief Executive Officer, upon the terms and conditions set forth in this Agreement for the period beginning May 15, 2019 (the date of the beginning of such period to be referred to herein as the "**Start Date**") and ending as provided in Section 5.01 (the "**Employment Period**").

## ARTICLE 3

### POSITION AND DUTIES

SECTION 3.01. *Position and Duties.* During the Employment Period, the Executive shall serve as Chief Executive Officer of the Company. In such capacity, the Executive shall have such responsibilities, powers and duties as may from time to time be prescribed by the Board. During the Employment Period, the Executive shall devote substantially all of his working time and efforts to the business and affairs of the Company and its subsidiaries. The Executive shall not directly or indirectly render any services of a business, commercial or

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professional nature to any other Person or organization, whether for compensation or otherwise, without the prior written consent of the Company; provided, however, that nothing in this Agreement shall preclude the Executive from managing his personal investments or serving as a director of a not-for-profit organization, so long as such activities do not interfere with the Executive's performance of his duties hereunder.

#### ARTICLE 4

##### BASE SALARY AND BENEFITS

SECTION 4.01. *Base Salary.* As of the Start Date, the Executive's base salary will be \$375,000 per annum (the "**Base Salary**"). The Base Salary will be payable in accordance with the normal payroll practices of the Company. Annually, during the Employment Period, the Compensation Committee of the Board of Directors shall review with the Executive his job performance and compensation, and if deemed appropriate by the Compensation Committee, in its discretion, the Executive's Base Salary may be adjusted; such adjusted Base Salary shall become the new Base Salary.

SECTION 4.02. *Bonuses.* During the Employment Period, in addition to the Base Salary, the Executive shall be eligible to participate in an annual bonus plan on such terms established from time to time by the Board or the Compensation Committee of the Board, as applicable.

SECTION 4.03. *Long Term Incentive Plans.* During the Employment Period, the Executive shall be eligible to participate in any long term incentive compensation plan maintained by the Company on the terms established from time to time by the Board or the Compensation Committee of the Board, as applicable.

SECTION 4.04. *Benefits.* During the Employment Term, the Executive shall be entitled to participate in all employee benefit and fringe benefit plans and arrangements made available by the Company to its executives and key management employees upon the terms and subject to the conditions set forth in the applicable plan or arrangement. The Executive will be entitled to a maximum of four (4) weeks of paid vacation annually during the Employment Period.

SECTION 4.05. *Expenses.* The Company shall reimburse the Executive for all reasonable expenses incurred by him in the course of performing his duties under this Agreement which are consistent with the Company's policies in effect from time to time with respect to travel, entertainment and other business expenses ("**Reimbursable Expenses**"), subject to the Company's requirements with respect to reporting and documentation of expenses.

SECTION 4.06 *Equity Award.* In consideration of Executive's promotion to Chief Executive Officer, the Company will propose to the Compensation Committee to make Executive an award of restricted stock as of May 15, 2019 equivalent to \$175,000, that will vest on the one-year anniversary of the grant date as more fully outlined in the Notice of Restricted Stock Award to be provided to Executive by the Company and further subject to the terms and conditions of The ExOne Company 2013 Equity Incentive Plan.

#### ARTICLE 5

##### TERM AND TERMINATION

SECTION 5.01. *Term.* The term of the Agreement shall commence on the Start Date, May 15, 2019 and end on the second anniversary of the Start Date, May 15, 2021, (the Employment Period), unless further extended or sooner terminated as hereinafter provided. Commencing on the second anniversary of the Start Date and on each anniversary thereafter, the Employment Period will automatically be extended each year for one (1) additional year, unless at least sixty (60) days immediately preceding such annual anniversary, the Company or Executive shall have given written notice to the other of such party's decision not to extend the Employment Period. In the event that either party terminates Agreement or Executive's employment with the Company during the Employment Period, the parties acknowledge and agree that there is no Base Salary or Benefits outlined in Article 4 above or any other

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compensation or benefits due and owing to Executive, except as outlined in the following sections of this Article 5, and subject to such terms and conditions provided herein.

SECTION 5.02. *Termination for Good Reason or Without Cause.* If Executive's employment is terminated prior to the end of the Employment Period (a) by the Executive for Good Reason, or (b) by the Company without Cause, provided the Executive has delivered a signed Release of claims reasonably satisfactory to the Company (the "Release") to the Company pursuant to the notice provision of Section 10.07 within ninety (90) days of the Date of Termination and not revoked the Release within the seven-day revocation period provided for in the Release, the Executive shall be paid solely (i) Base Salary through the Date of Termination and any annual bonus awarded in accordance with the Company's bonus program but not yet paid; (ii) an amount equal to one (1) times the Base Salary (to be paid in twelve monthly installments following the Date of Termination); (iii) a pro-rata portion of the Executive's bonus for the year of termination, calculated by reference to the number of days during the bonus year during which he was employed by the Company, as determined to be earned by the Compensation Committee of the Board, or the Board as applicable, pursuant to the applicable bonus plan; (iv) payment for all accrued, but unused, vacation time through the Date of Termination; (v) payment for reasonable outplacement assistance services actually incurred by the Executive associated with seeking another employment position within 12 months of the Date of Termination; and (vi) promptly following any such termination, the Executive shall be reimbursed all Reimbursable Expenses incurred by the Executive prior to such termination. The amounts described in clause (iv) above will be paid in a single lump sum on the later of ten (10) days after the Date of Termination, or the next payroll date; provided, however, that no amount shall be paid until expiration of the 7-day statutory revocation period with respect to the release referred to in this Section 5.02 above. The amount described in clause (ii) shall be paid in accordance with the terms of the applicable bonus plan subject to the attainment of the performance goals applicable to such bonus award and will be paid in such form and at such time as bonuses for that year are paid to other executives of the Company as determined by the Compensation Committee or Board, as applicable. The amount described in clause (vi) shall be paid no later than the end of the calendar year following the year in which such expense is incurred by the Executive. The terms of all Company restricted stock units, stock options and other equity based awards will be as set forth in the applicable award agreements and medical benefits shall be as provided in Section 5.05 below. The Executive's entitlements under any other benefit plan or program shall be as determined thereunder, except that severance benefits shall not be payable under any other plan or program. Notwithstanding the foregoing, if a termination of employment results in severance benefits being paid under any change in control agreement (or any successor thereto), no amounts or benefits will be paid to the Executive under this Section 5.02 or 5.05. The Executive further agrees that in the event that the Executive is terminated prior to the end of the Employment Period by the Executive under clause (c) under the definition of Good Reason, the Company may cease making payments under (ii) and (iii) above (and Executive will reimburse the Company for any payments made under (ii) and (iii) above with respect to such termination) in the event that the Executive accepts employment with the acquirer of all or substantially all of the assets of the Company prior to the end of the twelve month payment period during which payments under (ii) will be made.

SECTION 5.03. *Termination Due to Death or Permanent Disability.* If the Executive's employment is terminated prior to the end of the Employment Period due to the Executive's death or Permanent Disability, the Executive (or his heirs, estate or legal representative) shall be entitled solely to (i) Base Salary through the Date of Termination and any annual bonus awarded in accordance with the Company's bonus program but not yet paid; (ii) a pro-rata portion of the Executive's bonus for the year of termination, calculated by reference to the number of days during the bonus year during which he was employed by the Company; (iii) payment for all accrued, but unused, vacation time through the Date of Termination; and (iv) promptly following any such termination, the Executive (or his heirs, estate of legal representative) shall be reimbursed all Reimbursable Expenses incurred by the Executive prior to such termination. The amounts described in clauses (i) and (iii) above will be paid in a single lump sum on the later of ten (10) days after the Date of Termination, or the next payroll pay date. The amount described in clause (iii) shall be paid in accordance with the terms of the applicable bonus plan subject to the attainment of the performance goals applicable to such bonus award and will be paid in such form and at such time as bonuses for that year are paid to other executives of the Company as determined by the Compensation Committee or Board, as applicable. The terms of all Company restricted stock units, stock options and other equity based awards will be as set forth in the applicable award agreements, and the Executive's entitlements under any other benefit plan or program shall be as determined thereunder.

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SECTION 5.04. *Termination for Cause or Other Than Good Reason.* If the Executive's employment is terminated prior to the end of the Employment Period (a) by the Company for Cause, or (b) by the Executive other than for Good Reason and not due to the Executive's death or Permanent Disability, the Executive shall be entitled, within ten (10) days following the Date of Termination, or the next payroll pay date, to receive solely (i) the Base Salary through the Date of Termination; (ii) payment for all accrued, but unused, vacation time through the Date of Termination; and (iii) reimbursement of all Reimbursable Expenses incurred by the Executive prior to such termination. The Executive's rights under any benefit plan or program shall be as set forth thereunder.

SECTION 5.05. *Medical Benefits.* If there is a termination of employment as specified in Section 5.02, the Executive and his dependents shall continue to receive his medical insurance benefits from the Company available through COBRA. If the Executive elects COBRA continuation coverage, the Executive shall continue to participate in all medical insurance plans he was participating on the Date of Termination, and the Company shall pay the applicable premium. To the extent that Executive had dependent coverage immediately prior to termination of employment, such continuation of benefits for Executive shall also cover Executive's dependents for so long as Executive is receiving benefits under this paragraph and such dependents remain eligible. The COBRA Continuation Period for medical insurance under this paragraph shall be deemed to run concurrent with the continuation period federally mandated by COBRA (generally 18 months), or any other legally mandated and applicable federal, state, or local coverage period for benefits provided to terminated employees under the medical plan. For purposes of this Agreement, (a) "**COBRA**" means the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, and (b) "**COBRA Continuation Period**" shall mean the continuation period for medical insurance to be provided under the terms of this Agreement which shall commence on the first day of the calendar month following the month in which the date of termination falls and generally shall continue for an 18-month period or until such time as the executive is employed, whichever is earlier.

SECTION 5.06. *Notice of Termination.* Any termination by the Company for Permanent Disability or Cause or without Cause or by the Executive with or without Good Reason shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "**Notice of Termination**" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon and shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of employment under the provision indicated.

SECTION 5.07. *Date of Termination.* "**Date of Termination**" shall mean (a) if the Executive is terminated as a result of a Permanent Disability, the next business day after a Notice of Termination is given following the Permanent Disability; (b) if the Executive's employment is terminated as a result of death, the date of death; and (c) if the Executive is terminated for any other reason, the later of the date the Notice of Termination is given or the end of any applicable correction period except as otherwise specifically provided herein.

SECTION 5.08. *No Duty to Mitigate.* The Executive shall have no duty to seek new employment or other duty to mitigate following a termination of employment as described in Section 5.02 above, and no compensation or benefits described in Section 5.02 shall be subject to reduction or offset on account of any subsequent compensation, other than as provided in Section 5.05.

SECTION 5.09. *Release.* Notwithstanding any other provision hereof, the Executive shall not be required by the Release to release claims that the Executive may have against the Company for reimbursement of ordinary and necessary business expenses incurred by him during the course of his employment, claims that arise after the effective date of the Release, any rights the Executive may have to enforce Sections 5.02 of this Agreement, and claims for which the Executive is entitled to be indemnified under the Company's charter, by-laws or under applicable law or pursuant to the Company's directors' and officer's liability insurance policies.

## ARTICLE 6

### CONFIDENTIAL INFORMATION

SECTION 6.01. *Confidential Information and Trade Secrets.* The Executive and the Company agree that certain materials, including, but not limited to, information, data and other materials relating to customers,

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development programs, costs, marketing, trading, investment, sales activities, promotion credit and financial data, manufacturing processes, financial methods, plans or the business and affairs of the Company and its Affiliates, constitute proprietary confidential information and trade secrets. Accordingly, the Executive will not at any time during or after the Executive's employment with the Company disclose or use for the Executive's own benefit or purposes or the benefit or purposes of any Person, other than the Company and any of its Affiliates, any proprietary confidential information or trade secrets. The foregoing obligations imposed by this Section 6.01 will not apply (i) in the course of the business of and for the benefit of the Company, (ii) if such information has become, through no fault of the Executive, generally known to the public, or (iii) if the Executive is required by law to make disclosure (after giving the Company notice and an opportunity to contest such requirement). The Executive agrees that upon termination of employment with the Company for any reason, the Executive will immediately return to the Company all memoranda, books, paper, plans, information, letters and other data, and all copies thereof or therefrom, which in any way relate to the business of the Company and its Affiliates. The Executive further agrees that the Executive will not retain or use for the Executive's account at any time any trade names, trademark or other proprietary business designation used or owned in connection with the business of the Company or any of its Affiliates.

SECTION 6.02. Notice of Immunity under the Economic Espionage Act of 1996, as amended by the Defend Trade Secrets Act of 2016. Notwithstanding any other provision of this Agreement or the provisions contained in any other agreements pertaining to confidentiality that the Executive has signed, the Executive understands that the Executive will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that (a) is made (1) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney and (2) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made in a complaint or other document that is filed under seal in a lawsuit or other proceeding. If the Executive files a lawsuit for retaliation by the Company for reporting a suspected violation of law, the Executive may disclose the Company's trade secrets to the Executive's attorney and use the trade secret information in the court proceeding if the Executive: (a) files any document containing the trade secret under seal; and (b) does not disclose the trade secret, except pursuant to court order.

## ARTICLE 7

### NONCOMPETITION

SECTION 7.01. *Noncompetition.* (a) The Executive acknowledges and recognizes the highly competitive nature of the business of the Company and its Affiliates and accordingly agrees that during the term of the Executive's employment and for a period of one (1) year after the termination thereof:

(i) the Executive will not directly or indirectly engage in any business which is in competition with any line of business conducted by the Company or any of its Affiliates, including, but not limited to, where such engagement is as an officer, director, proprietor, employee, partner, investor (other than as a holder of less than 1% of the outstanding capital stock of a publicly traded corporation), consultant, advisor, agent or sales representative, in any Restricted Territory;

(ii) the Executive will not perform or solicit the performance of services for any customer or client of the Company or any of its Affiliates;

(iii) the Executive will not directly or indirectly induce any employee of the Company or any of its Affiliates to (1) engage in any activity or conduct which is prohibited pursuant to this Section 7.01, or (2) terminate such employee's employment with the Company or any of its Affiliates. Moreover, the Executive will not directly or indirectly employ or offer employment (in connection with any business which is in competition with any line of business conducted by the Company or any of its Affiliates) to any person who was employed by the Company or any of its Affiliates unless such person shall have ceased to be employed by the Company or any of its Affiliates for a period of at least twelve (12) months; and

(iv) the Executive will not directly or indirectly assist others in engaging in any of the activities which are

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prohibited under clauses (i)-(iii) of this Section 7.01(a) above.

Notwithstanding the foregoing, the Executive may serve as an advisor to any person or entity that is not directly engaged in a business which is in competition with any line of business conducted by the Company or any of its Affiliates after the Executive receives the Company's written permission, which shall not be unreasonably withheld.

(b) The covenant contained in Section 7.01(a)(i) above is intended to be construed as a series of separate covenants, one for each county, town, city and state or other political subdivision of a Restricted Territory. Except for geographic coverage, each such separate covenant shall be deemed identical in terms to the covenant contained in the preceding subsections. If, in any judicial proceeding, the court shall refuse to enforce any of the separate covenants (or any part thereof) deemed included in such subsections, then such unenforceable covenant (or such part) shall be deemed to be eliminated from this Agreement for the purpose of those proceedings to the extent necessary to permit the remaining separate covenants (or portions thereof) to be enforced.

(c) It is expressly understood and agreed that although the Executive and the Company consider the restrictions contained in this Section 7.01 to be reasonable, if a final judicial determination is made by a court of competent jurisdiction that the time or territory or any other restriction contained in this Agreement is an unenforceable restriction against the Executive, the provisions of this Agreement shall not be rendered void but shall be deemed amended to apply as to such maximum time and territory and to such maximum extent as such court may judicially determine or indicate to be enforceable. Alternatively, if any court of competent jurisdiction finds that any restriction contained in this Agreement is unenforceable, and such restriction cannot be amended so as to make it enforceable, such finding shall not affect the enforceability of any of the other restrictions contained herein.

## ARTICLE 8

### EQUITABLE RELIEF

SECTION 8.01. *Equitable Relief.* The Executive acknowledges that (a) the covenants contained in Sections 6.01 and 7.01 hereof are reasonable, (b) the Executive's services are unique, and (c) a breach or threatened breach by him of any of his covenants and agreements with the Company contained in Sections 6.01 or 7.01 hereof could cause irreparable harm to the Company for which it would have no adequate remedy at law. Accordingly, and in addition to any remedies which the Company may have at law, in the event of an actual or threatened breach by the Executive of his covenants and agreements contained in Sections 6.01 or 7.01 hereof, the Company shall be entitled as a matter of right to an injunction, without a requirement to post bond, out of any court of competent jurisdiction, restraining any violation or further violation of such promises by the Executive or the Executive's employees, partners or agents.

## ARTICLE 9

### INDEMNIFICATION

SECTION 9.01. (a) *Indemnification.* The Company agrees that if the Executive is made a party, or is threatened to be made a party, to any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director, officer or employee of the Company or is or was serving at the request of the Company as a director, officer, member, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, the Executive shall be indemnified and held harmless by the Company to the fullest extent permitted or authorized by applicable law and the Company's certificate of incorporation or bylaws, against all cost, expense, liability and loss (including, without limitation, attorney's fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by the Executive in connection therewith, and such indemnification shall continue as to the Executive even if he has ceased to be a director, member, employee or agent of the Company or other entity and shall inure to the benefit of the Executive's heirs, executors and administrators.

(b) *D&O Insurance.* During the Employment Period, the Company shall keep in place a directors' and officers' liability insurance policy (or policies) providing comprehensive coverage to the Executive to the same

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extent that the Company provides such coverage for any other officer or director of the Company and, after the expiration of the Employment Period, the Executive shall be entitled to such coverage to the same extent that the Company provides such coverage for any other current or former officer or director of the Company.

## ARTICLE 10

### MISCELLANEOUS

SECTION 10.01. *Remedies.* The Company will have all rights and remedies set forth in this Agreement, all rights and remedies which the Company has been granted at any time under any other agreement or contract and all of the rights which the Company has under any law. The Company will be entitled to enforce such rights specifically, without posting a bond or other security, to recover damages by reason of any breach of any provision of this Agreement and to exercise all other rights granted by law. The failure of the Company to enforce at any time any provision of this Agreement shall in no way be construed to be a waiver of such provision or of any other provision hereof.

SECTION 10.02. *Consent to Amendments.* The provisions of this Agreement may be amended or waived only by a written agreement executed and delivered by the Company and the Executive. No other course of dealing between the parties to this Agreement or any delay in exercising any rights hereunder will operate as a waiver of any rights of any such parties. Notwithstanding the foregoing or any provisions of this Agreement to the contrary, the Company may at any time, with the consent of the Executive, modify or amend any provision of this Agreement or take any other action, to the extent necessary or advisable to ensure that this Agreement complies with or is exempt from Section 409A of the Code and that any payments or benefits under this Agreement are not subject to interest and penalties under Section 409A of the Code.

SECTION 10.03. *Successors and Assigns.* All covenants and agreements contained in this Agreement by or on behalf of any of the parties hereto will bind and inure to the benefit of the respective successors and assigns of the parties hereto whether so expressed or not, provided that the Executive may not assign his rights or delegate his obligations under this Agreement without the written consent of the Company.

SECTION 10.04. *Severability.* Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of this Agreement.

SECTION 10.05. *Counterparts.* This Agreement may be executed simultaneously in two or more counterparts, any one of which need not contain the signatures of more than one party, but all of which counterparts taken together will constitute one and the same agreement.

SECTION 10.06. *Descriptive Headings.* The descriptive headings of this Agreement are inserted for convenience only and do not constitute a part of this Agreement.

SECTION 10.07. *Notices.* All notices, demands or other communications to be given or delivered under or by reason of the provisions of this Agreement will be in writing and will be deemed to have been given when delivered personally to the recipient, two (2) business days after the date when sent to the recipient by reputable express courier service (charges prepaid) or four (4) business days after the date when mailed to the recipient by certified or registered mail, return receipt requested and postage prepaid. Such notices, demands and other communications will be sent to the Executive and to the Company at the addresses set forth below.

If to the Executive: To the last address delivered to the Company by the Executive in the manner set forth herein.

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If to the Company: The ExOne Company  
127 Industry Boulevard  
Irwin, PA 15642  
Attn: Loretta L. Benec  
General Counsel and Corporate Secretary

Copies of notices to the Company shall also be sent to:

McGuireWoods LLP  
625 Liberty Avenue, 23<sup>rd</sup> Floor  
Pittsburgh, PA 15222  
Attn: Hannah Thompson Frank

or to such other address or to the attention of such other person as the recipient party has specified by prior written notice to the sending party.

SECTION 10.08. *Withholding*. The Company may withhold from any amounts payable under this Agreement such federal, state, local or foreign taxes as shall be required to be withheld pursuant to any applicable law or regulation.

SECTION 10.09. *No Third Party Beneficiary*. This Agreement will not confer any rights or remedies upon any person other than the Company, the Executive and their respective heirs, executors, successors and assigns.

SECTION 10.10. *Agreements*. This Agreement, between the Company and Executive constitutes the entire agreement among the parties relating to the subject matter hereof. No prior or contemporaneous oral or written agreements or representations may be offered to alter the terms of this Agreement. To the extent Executive and the Company have entered into other agreements, including, but not limited to, Executive's offer letter dated October 23, 2018 and The ExOne Company's Proprietary Information and Assignment of Inventions Agreement dated October 17, 2018, that are not in conflict with this Agreement, the terms of those other agreements shall be in addition to this Agreement.

SECTION 10.11. *Construction*. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rule of strict construction will be applied against any party. Any reference to any federal, state, local or foreign statute or law will be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise. The use of the word "*including*" in this Agreement means "*including without limitation*" and is intended by the parties to be by way of example rather than limitation.

SECTION 10.12. *Survival*. Sections 6.01, 6.02, 7.01, 8.01, 9.01 and Article 10 hereof will survive and continue in full force in accordance with their terms notwithstanding any termination of Executive or the Employment Period, and the Agreement shall otherwise remain in full force to the extent necessary to enforce any rights and obligations arising hereunder.

SECTION 10.14. *GOVERNING LAW*. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY AND INTERPRETATION OF THIS AGREEMENT WILL BE GOVERNED BY THE INTERNAL LAW OF PENNSYLVANIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICT OF LAWS.

SECTION 10.15. *Internal Revenue Code Section 409A*.

(a) If any benefit provided under this Agreement is subject to the provisions of Section 409A of the Code and the regulations issued thereunder, the provisions of the Agreement shall be administered, interpreted and construed in a manner necessary to comply with Section 409A and the regulations issued thereunder (or disregarded to the extent such provision cannot be so administered, interpreted, or construed.)

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(b) For purposes of the Agreement, the Executive shall be considered to have experienced a termination of employment only if the Executive has terminated employment with the Company and all of its controlled group members within the meaning of Section 409A of the Code. For purposes hereof, the determination of controlled group members shall be made pursuant to the provisions of Section 414(b) and 414(c) of the Code; provided that the language “at least 50 percent” shall be used instead of “at least 80 percent” in each place it appears in Section 1563(a)(1),(2) and (3) of the Code and Treas. Reg. § 1.414(c)-2. Whether the Executive has terminated employment will be determined based on all of the facts and circumstances and in accordance with the guidance issued under Section 409A of the Code.

(c) For purposes of Section 409A, each severance benefit payment shall be treated as a separate payment. Each payment under this Agreement is intended to be excepted from Section 409A to the maximum extent provided under Section 409A as follows: (i) the Employee’s termination date and within the applicable 2 1/2 month period specified in Treas. Reg. § 1.409A-1(b)(4) is intended to be excepted under the short-term deferral exception as specified in Treas. Reg. § 1.409A-1(b)(4); (ii) post-termination medical benefits are intended to be excepted under the medical benefits exceptions as specified in Treas. Reg. § 1.409A-1(b)(9)(v)(B); and (iii) to the extent payments are made as a result of an involuntary separation, each payment that is not otherwise excepted under the short-term deferral exception or medical benefits exception is intended to be excepted under the involuntary pay exception as specified in Treas. Reg. § 1.409A-1(b)(9)(iii). The Executive shall have no right to designate the date of any payment under this Agreement.

(d) With respect to payments subject to Section 409A of the Code (and not excepted therefrom), if any, it is intended that each payment is paid on a permissible distribution event and at a specified time consistent with Section 409A of the Code. The Company reserves the right to accelerate and/or defer any payment to the extent permitted and consistent with Section 409A. Notwithstanding any provision of this Agreement to the contrary, to the extent that a payment hereunder is subject to Section 409A of the Code (and not excepted therefrom) and payable on account or a termination of employment, such payment shall be delayed for a period of six months after the date of termination (or, if earlier, the death of the Executive ) if the Executive is a “specified employee” (as defined in Section 409A of the Code and determined in accordance with the procedures established by the Company). Any payment that would otherwise have been due or owing during such 6-month period will be paid immediately following the end of the 6-month period in the month following the month containing the 6-month anniversary of the date of termination.

*[remainder of page intentionally left blank]*

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*[Signature Page for John F. Hartner Employment Agreement]*

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first above written.

The ExOne Company

By: /s/Loretta L. Benec  
Loretta L. Benec  
General Counsel & Corporate Secretary  
Dated: May 15, 2019

By: /s/John F. Hartner  
John F. Hartner  
Dated: May 15, 2019

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SEPARATION OF EMPLOYMENT AND GENERAL RELEASE AGREEMENT

THIS SEPARATION OF EMPLOYMENT AND GENERAL RELEASE AGREEMENT (this "Agreement") is made as of this \_\_\_\_\_ day of \_\_\_\_\_, by and between The ExOne Company, a Delaware corporation (the "Company"), and John F. Hartner (the "Executive").

WHEREAS, the Executive formerly was employed by the Company as Chief Executive Officer;

WHEREAS, the Executive and Company entered into an Employment Agreement, dated \_\_\_\_\_, 2019, (the "Severance Agreement") which provides for certain payments and benefits in the event that the Executive's employment is terminated on account of a reason set forth in the Severance Agreement; and

WHEREAS, the Executive's employment with the Company was terminated for reasons that qualify the Executive to receive certain payments and benefits, as set forth in Article 5 of the Severance Agreement, subject to, among other things, the Executive's execution of this Release as defined therein.

NOW, THEREFORE, for and in consideration of the Company's commitments in Article 5 of the Severance Agreement, and intending to be legally bound, the Executive and the Company hereby agree as follows:

1. (a) The Executive does hereby REMISE, RELEASE AND FOREVER DISCHARGE the Company, its affiliates, subsidiaries and parents, and its and their respective officers, directors, employees, and agents, and its and their respective successors and assigns, heirs, executors, and administrators, as well as the current and former fiduciaries of any pension, welfare, or other benefit plans applicable to the employees or former employees of the Company, and the current and former welfare and other benefit plans sponsored by the Company (collectively, "Releasees") from all causes of action, suits, debts, claims and demands whatsoever in law or in equity, which the Executive ever had, now has, or hereafter may have, whether known or unknown, or which the Executive's heirs, executors, or administrators may have, by reason of any matter, cause or thing whatsoever, from the beginning of time to the date the Executive signs this Agreement, and particularly, but without limitation of the foregoing general terms, any claims arising from or relating in any way to the Executive's employment relationship with the Company, the terms and conditions of that employment relationship, and the termination of that employment relationship, including, but not limited to, any claims arising under the Age Discrimination in Employment Act, the Older Workers Benefit Protection Act, Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act, the Worker Readjustment and Retraining Notification Act, the Consolidated Omnibus Budget Reconciliation Act, the Employee Retirement Income Security Act of 1974, the Pennsylvania Human Relations Act, and any other claims under any federal, state or local common law, statutory, or regulatory provision, now or hereafter recognized, and any claims for attorneys' fees and costs. This Agreement is effective without regard to the legal nature of the claims raised and without regard to whether any such claims are based upon tort, equity, implied or express contract or discrimination of any sort.

(b) Although Paragraph 1(a) is intended to be a general release, it is understood and agreed that Paragraph 1(a) excludes claims related to the Executive's right to receive the payments and benefits described in Article 5 of the Severance Agreement, as well as claims under any statute or common law that the Executive is legally barred from releasing, such as the Executive's entitlement to vested pension benefits. Notwithstanding any other provision hereof, the Executive shall not release claims that the Executive may have against the Company for reimbursement of ordinary and necessary business expenses incurred by him during the course of his employment, claims that arise after the effective date of the Release, any rights the Executive may have to enforce Sections 5.02 of the Severance Agreement, and claims for which the Executive is entitled to be indemnified under the Company's charter, by-laws or under applicable law or pursuant to the Company's directors' and officer's liability insurance policies.

(c) Nothing herein is intended to or shall preclude the Executive from filing a charge with any appropriate federal, state or local government agency and/or cooperating with said agency in its investigation. The Executive, however, explicitly waives any right to file a personal lawsuit or receive monetary damages that the agency may recover against the Releasees, without regard as to who brought any said complaint or charge. Employee further

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agrees that to the extent any relief, including monetary relief, is awarded in any such proceeding, all amounts paid as consideration under Article 5 of the Severance Agreement shall be a setoff and credit against any such award to the fullest extent permitted by law.

(d) The Executive represents and agrees by signing below that the Executive has not been denied any leave or benefit requested, has received the appropriate pay for all hours worked for the Company, and has no known workplace injuries or occupational diseases.

(e) To the fullest extent permitted by law, the Executive represents and affirms that (i) [other than \_\_\_\_\_,] the Executive has not filed or caused to be filed on the Executive's behalf any claim for relief against any Releasee and, to the best of the Executive's knowledge and belief, no outstanding claims for relief have been filed or asserted against the Company or any Releasee on the Executive's behalf; and (ii) [other than \_\_\_\_\_,] the Executive has not reported any improper, unethical or illegal conduct or activities to any supervisor, manager, department head, human resources representative, agent or other representative of the Company, to any member of the Company's legal or compliance departments, or to the ethics hotline, and has no knowledge of any such improper, unethical or illegal conduct or activities. The Executive agrees to promptly dismiss with prejudice all claims for relief filed before the date the Executive signs this Agreement.

2. The Company does hereby REMISE, RELEASE AND FOREVER DISCHARGE the Executive from all claims, demands or causes of action arising out of facts or occurrences prior to the date of this Agreement, but only to the extent the Company knows or reasonably should know of such facts or occurrence and only to the extent such claim, demand or cause of action relates to a violation of applicable law or the performance of the Executive's duties with the Company; provided, however, that this release of claims shall not in any case be effective with respect to any claim by the Company alleging a breach of the Executive's obligations under this Agreement. [Note: The Company and the Executive may, but shall not be required to mutually agree on a case-by-case basis at the time of the signing of this release to include the foregoing provision, or a substantially similar provision, to this Agreement.]

3. The Executive further agrees and recognizes that the Executive's employment relationship with the Company has been permanently severed, that the Executive shall not seek employment with the Company or any affiliated entity at any time in the future, and that the Company has no obligation to employ the Executive in the future.

4. The Executive further agrees that the Executive will not disparage or subvert the Company, or make any statement reflecting negatively on the Releasees including, but not limited to, statements relating to the operation or management of the Company, the Executive's employment and the termination of the Executive's employment, irrespective of the truthfulness or falsity of such statement.

5. The Executive acknowledges that if the Executive had not executed this Agreement containing a release of all claims, the Executive would not have been entitled to the payments and benefits set forth in Article 5 of the Severance Agreement.

6. Notice of Immunity under the Economic Espionage Act of 1996, as amended by the Defend Trade Secrets Act of 2016. Notwithstanding any other provision of this Agreement or the provisions contained in any other agreements pertaining to confidentiality that the Executive has signed, the Executive understands that the Executive will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that: (i) is made: (1) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (2) solely for the purpose of reporting or investigating a suspected violation of law; or (ii) is made in a complaint or other document that is filed under seal in a lawsuit or other proceeding. If the Executive files a lawsuit for retaliation by the Company for reporting a suspected violation of law, the Executive may disclose the Company's trade secrets to the Executive's attorney and use the trade secret information in the court proceeding if the Executive: (i) files any document containing the trade secret under seal; and (ii) does not disclose the trade secret, except pursuant to court order.

7. Collectively, this Agreement and the Severance Agreement contain the entire agreement between the Company and the Executive relating to the subject matter hereof. No prior or contemporaneous oral or written

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agreements or representations may be offered to alter the terms of this Agreement. To the extent Employee has entered into other agreements with the Company that are not in conflict with this Agreement, including, but not limited to the Severance Agreement, The ExOne Company Proprietary Information and Assignment of Inventions Agreement, the terms of this Agreement shall not supersede, but shall be in addition to such other agreements.

8. The Executive agrees not to disclose the terms of this Agreement or the Severance Agreement to anyone, except the Executive's spouse, attorney and, as necessary, tax/financial advisor. Likewise, the Company agrees that the terms of this Agreement will not be disclosed except as may be necessary to obtain approval or authorization to fulfill its obligations hereunder or as required by law. It is expressly understood that any violation of the confidentiality obligation imposed hereunder constitutes a material breach of this Agreement.

9. The Executive represents that the Executive has returned to the Company and does not presently have in the Executive's possession or control any records and business documents, whether on computer or hard copy, and other materials (including but not limited to computer disks and tapes, computer programs and software, office keys, correspondence, files, customer lists, technical information, customer information, pricing information, business strategies and plans, sales records and all copies thereof) (collectively, the "Corporate Records") provided by the Company and/or its predecessors, subsidiaries or affiliates or obtained as a result of the Executive's prior employment with the Company and/or its predecessors, subsidiaries or affiliates, or created by the Executive while employed by or rendering services to the Company and/or its predecessors, subsidiaries or affiliates. In addition, the Executive has or will promptly return in good condition any other Company owned equipment or property, including, but not limited to, automobiles, personal data assistants, facsimile machines, copy machines, pagers, credit cards, cellular telephone equipment, business cards, laptops and computers. At the Executive's request, the Company will make reasonable arrangements to transfer cellular phone numbers and personal fax numbers to the Executive.

10. Nothing in this Agreement shall prohibit or restrict the Executive from: (i) making any disclosure of information required by law; (ii) providing information to, or testifying or otherwise assisting in any investigation or proceeding brought by, any federal regulatory or law enforcement agency or legislative body, any self-regulatory organization, or the Company's designated legal, compliance or human resources officers; or (iii) filing, testifying, participating in or otherwise assisting in a proceeding relating to an alleged violation of any federal, state or municipal law relating to fraud, or any rule or regulation of the Securities and Exchange Commission or any self-regulatory organization.

11. The parties agree and acknowledge that the agreement by the Company described herein, and the release of any asserted or unasserted claims against the Releasees, are not and shall not be construed to be an admission of any violation of any federal, state or local statute or regulation, or of any duty owed by any of the Releasees to the Executive.

12. The Executive agrees and recognizes that should the Executive breach any of the obligations or covenants set forth in Articles 6 and 7 of the Severance Agreement, the Company will have no further obligation to provide the Executive with the consideration set forth in Article 5 of the Severance Agreement, and will have the right to seek repayment of all consideration paid up to the time of any such breach. Notwithstanding the foregoing, the Executive acknowledges that if the Executive breaches Articles 6 and 7 of the Severance Agreement, and if the Company terminates or recovers any of the payments or benefits provided under Article 5 of the Severance Agreement (as provided for in Articles 6 and 7 of the Severance Agreement), the release provided by Section 1 of this Agreement shall remain valid and enforceable.

13. The Executive further agrees that the Company shall be entitled to preliminary and permanent injunctive relief, without the necessity of proving actual damages, as well as to an equitable accounting of all earnings, profits and other benefits arising from any violations of this Agreement, which rights shall be cumulative and in addition to any other rights or remedies to which the Company may be entitled.

14. This Agreement and the obligations of the parties hereunder shall be construed, interpreted and enforced in accordance with the laws of the Commonwealth of Pennsylvania.

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15. The Executive certifies and acknowledges as follows:

(a) That the Executive has read the terms of this Agreement, and that the Executive understands its terms and effects, including the fact that the Executive has agreed to RELEASE AND FOREVER DISCHARGE the Releasees from any legal action arising out of the Executive's employment relationship with the Company and the termination of that employment relationship; and

(b) That the Executive has signed this Agreement voluntarily and knowingly in exchange for the consideration described herein, which the Executive acknowledges is adequate and satisfactory to him and which the Executive acknowledges is in addition to any other benefits to which the Executive is otherwise entitled; and

(c) That the Executive has been and is hereby advised in writing to consult with an attorney prior to signing this Agreement; and

(d) That the Executive does not waive rights or claims that may arise after the date this Agreement is executed; and

**(e) That the Company has provided the Executive with a period of [twenty-one (21)] or [forty-five (45)] days within which to consider this Agreement, and that the Executive has signed on the date indicated below after concluding that this Agreement is satisfactory; and**

(f) The Executive acknowledges that this Agreement may be revoked within seven (7) days after execution, and it shall not become effective until the expiration of such seven (7) day revocation period. In the event of a timely revocation by the Executive, this Agreement will be deemed null and void and the Company will have no obligations hereunder or under Article 5 of the Severance Agreement.

Intending to be legally bound hereby, the Executive and the Company executed the foregoing Separation of Employment and General Release Agreement this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Witness: \_\_\_\_\_

Executive

[Insert Company Name]

By: \_\_\_\_\_

Witness: \_\_\_\_\_

Name:

Title:

## CERTIFICATIONS

I, John F. Hartner, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of The ExOne Company;
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 the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 7, 2019

The ExOne Company

/s/ John F. Hartner

John F. Hartner

Chief Executive Officer

(Principal Executive Officer)

## CERTIFICATIONS

I, Douglas D. Zemba, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of The ExOne Company;
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 the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 7, 2019

The ExOne Company

/s/ Douglas D. Zemba

Douglas D. Zemba

Chief Financial Officer

(Principal Financial Officer and Principal

Accounting Officer)



**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED  
PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the filing of this Quarterly Report on Form 10-Q of The ExOne Company (the "Company") for the quarterly period ended June 30, 2019, with the Securities and Exchange Commission on the date hereof (the "Report"), the Undersigned certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 7, 2019

/s/ John F. Hartner  
John F. Hartner  
*Chief Executive Officer*  
*(Principal Executive Officer)*

/s/ Douglas D. Zemba  
Douglas D. Zemba  
*Chief Financial Officer*  
*(Principal Financial Officer and Principal Accounting Officer)*