

ExOne Co
Form 10-Q
August 09, 2018

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, 2018

OR

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

For the transition period from _____ to _____

Commission File No. 001-35806

The ExOne Company

(Exact name of registrant as specified in its charter)

Delaware 46-1684608
(State or other jurisdiction of (I.R.S. Employer

incorporation or organization) 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)

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

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

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

Large accelerated filer

Accelerated filer

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

Smaller reporting company

Emerging growth company

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

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

As of August 9, 2018, 16,202,119 shares of common stock, par value \$0.01, were outstanding.

IMPLICATIONS OF BEING AN EMERGING GROWTH COMPANY

Since our initial public offering, we have continued to qualify as an “emerging growth company” (“EGC”) as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”). An EGC may take advantage of specified reduced reporting requirements and is relieved of certain other significant requirements that are otherwise generally applicable to public companies.

As an EGC:

- We are exempt from the requirement to obtain an attestation and report from our auditors on the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002;
- We are permitted to provide less extensive disclosure about our executive compensation arrangements;
- We are not required to give our stockholders non-binding advisory votes on executive compensation or golden parachute arrangements; and
- We have elected to use an extended transition period for complying with new or revised accounting standards.

We may choose to take advantage of some, but not all, of these reduced burdens. We will continue to operate under these provisions until December 31, 2018, or such earlier time that we are no longer an EGC. We would cease to be an EGC if we have more than \$1.07 billion in annual revenues, qualify as a “large accelerated filer” under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), which requires us to have more than \$700 million in market value of our common stock held by non-affiliates, or issue more than \$1.0 billion of non-convertible debt over a three-year period.

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		Six Months Ended	
	Ended June 30, 2018	2017	June 30, 2018	2017
Revenue	\$10,857	\$10,799	\$22,750	\$21,668
Cost of sales	9,267	8,773	18,544	18,039
Gross profit	1,590	2,026	4,206	3,629
Operating expenses				
Research and development	3,235	2,349	6,030	4,348
Selling, general and administrative	6,353	6,013	12,555	12,276
	9,588	8,362	18,585	16,624
Loss from operations	(7,998)	(6,336)	(14,379)	(12,995)
Other expense (income)				
Interest expense	73	23	106	45
Other (income) expense net	(52)	35	(98)	145
	21	58	8	190
Loss before income taxes	(8,019)	(6,394)	(14,387)	(13,185)
Provision for income taxes	18	9	35	9
Net loss	\$(8,037)	\$(6,403)	\$(14,422)	\$(13,194)
Net loss per common share:				
Basic	\$(0.50)	\$(0.40)	\$(0.89)	\$(0.82)
Diluted	\$(0.50)	\$(0.40)	\$(0.89)	\$(0.82)
Comprehensive loss:				
Net loss	\$(8,037)	\$(6,403)	\$(14,422)	\$(13,194)
Other comprehensive (loss) income:				
Foreign currency translation adjustments	(2,240)	2,493	(838)	3,519
Comprehensive loss	\$(10,277)	\$(3,910)	\$(15,260)	\$(9,675)

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)

	June 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 11,584	\$ 21,848
Restricted cash	1,463	330
Accounts receivable net of allowance of \$1,122 (2018) and \$1,193 (2017)	5,003	8,647
Inventories net	20,551	15,430
Prepaid expenses and other current assets	2,677	1,710
Total current assets	41,278	47,965
Property and equipment net	44,791	46,797
Intangible assets net	—	62
Other noncurrent assets	770	736
Total assets	\$ 86,839	\$ 95,560
Liabilities		
Current liabilities:		
Current portion of long-term debt	\$ 140	\$ 137
Current portion of capital leases	16	15
Accounts payable	4,756	4,291
Accrued expenses and other current liabilities	6,665	6,081
Deferred revenue and customer prepayments	13,460	8,282
Total current liabilities	25,037	18,806
Long-term debt net of current portion	1,437	1,508
Capital leases net of current portion	41	36
Other noncurrent liabilities	1	1
Total liabilities	26,516	20,351
Contingencies and commitments		
Stockholders' equity		
Common stock, \$0.01 par value, 200,000,000 shares authorized, 16,149,617 (2018) and 16,124,617 (2017) shares issued and outstanding		
	161	161
Additional paid-in capital	174,092	173,718
Accumulated deficit	(103,608)	(89,186)
Accumulated other comprehensive loss	(10,322)	(9,484)
Total stockholders' equity	60,323	75,209
Total liabilities and stockholders' equity	\$ 86,839	\$ 95,560

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,
2018 2017

Operating activities		
Net loss	\$(14,422)	\$(13,194)
Adjustments to reconcile net loss to net cash used for operations:		
Depreciation and amortization	2,829	3,589
Equity-based compensation	374	835
Amortization of debt issuance costs	27	3
(Recoveries) provision for bad debts net	(37)	132
Provision for slow-moving, obsolete and lower of cost or net realizable value		
inventories net	771	1,835
Gain from disposal of property and equipment net	(41)	(314)
Changes in assets and liabilities, excluding effects of foreign currency		
translation adjustments:		
Decrease in accounts receivable	3,763	69
Increase in inventories	(7,060)	(3,358)
Increase in prepaid expenses and other assets	(658)	(770)
Increase in accounts payable	445	2,111
Increase (decrease) in accrued expenses and other liabilities	730	(252)
Increase in deferred revenue and customer prepayments	5,406	2,390
Net cash used for operating activities	(7,873)	(6,924)
Investing activities		
Capital expenditures	(819)	(392)
Proceeds from sale of property and equipment	25	3,677
Net cash (used for) provided by investing activities	(794)	3,285
Financing activities		
Payments on long-term debt	(70)	(68)
Payments on capital leases	(9)	(45)
Debt issuance costs	(188)	—
Net cash used for financing activities	(267)	(113)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	(197)	760
Net change in cash, cash equivalents, and restricted cash	(9,131)	(2,992)
Cash, cash equivalents, and restricted cash at beginning of period	22,178	28,155
Cash, cash equivalents, and restricted cash at end of period	\$13,047	\$25,163

Supplemental disclosure of noncash investing and financing activities

Transfer of internally developed 3D printing machines from inventories to

property and equipment for internal use or leasing activities	\$895	\$1,917
Transfer of internally developed 3D printing machines from property and equipment to	\$424	\$395

inventories for sale		
Property and equipment acquired through financing arrangements	\$ 14	\$ 48
Unsettled proceeds from sale of property and equipment	\$ 51	\$ —
Property and equipment included in accounts payable	\$ 95	\$ 100
Property and equipment included in accrued expenses and other current liabilities	\$ 23	\$ —
Debt issuance costs included in accounts payable	\$ 76	\$ —

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 Shares	\$	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss	Total stockholders' equity
Balance at December 31, 2016	16,017	\$ 160	\$ 171,116	\$ (68,761)	\$ (14,735)	\$ 87,780
Cumulative-effect adjustment due to the adoption of						
Financial Accounting Standards Board						
Accounting Standards Update 2016-16	—	—	—	(408)	—	(408)
Net loss	—	—	—	(13,194)	—	(13,194)
Other comprehensive income	—	—	—	—	3,519	3,519
Equity-based compensation	—	—	835	—	—	835
Common stock issued from equity incentive plan	29	—	—	—	—	—
Balance at June 30, 2017	16,046	\$ 160	\$ 171,951	\$ (82,363)	\$ (11,216)	\$ 78,532
Balance at December 31, 2017	16,125	\$ 161	\$ 173,718	\$ (89,186)	\$ (9,484)	\$ 75,209
Net loss	—	—	—	(14,422)	—	(14,422)
Other comprehensive loss	—	—	—	—	(838)	(838)
Equity-based compensation	—	—	374	—	—	374
Common stock issued from equity incentive plan	25	—	—	—	—	—
Balance at June 30, 2018	16,150	\$ 161	\$ 174,092	\$ (103,608)	\$ (10,322)	\$ 60,323

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); ExOne Italy S.r.l (Italy); and through December 2017, ExOne Sweden AB (Sweden). 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.

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, 2017 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, 2017, 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.

Recently Adopted Accounting Guidance

On January 1, 2018, the Company adopted Financial Accounting Standards Board (“FASB”) Accounting Standards Update (“ASU”) ASU 2017-09, “Compensation – Stock Compensation: Scope of Modification Accounting.” This ASU requires registrants to apply modification accounting unless three specific criteria are met. The three criteria are: the fair value of the award is the same before and after the modification, the vesting conditions are the same before and after the modification and the classification as a debt or equity award is the same before and after the modification. Management has determined that the adoption of this ASU did not have an impact on the consolidated financial statements of the Company.

On January 1, 2017, the Company adopted FASB ASU 2016-16, “Income Taxes: Intra-Entity Transfers of Assets Other Than Inventory.” This ASU modifies existing guidance and is intended to reduce diversity in practice with respect to the accounting for the income tax consequences of intra-entity transfers of assets. The ASU indicates that the former exception to income tax accounting that requires companies to defer the income tax effects of certain intercompany transactions would apply only to intercompany inventory transactions. That is, the exception no longer applies to intercompany sales and transfers of other assets (e.g., property and equipment or intangible assets). Under the former exception, income tax expense associated with intra-entity profits in an intercompany sale or transfer of assets was eliminated from earnings. Instead, that cost was deferred and recorded on the balance sheet (e.g., as a prepaid asset) until the assets left the consolidated group. Similarly, the entity was prohibited from recognizing deferred tax assets for the increases in tax bases due to the intercompany sale or transfer. A modified retrospective basis of adoption was required for this ASU. As a result, a cumulative-effect adjustment of approximately \$408 has been recorded to accumulated deficit on January 1, 2017, in

connection with this adoption. This cumulative-effect adjustment relates to the prepaid expense associated with intra-entity transfers of property and equipment included in prepaid expenses and other current assets at December 31, 2016.

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 August 2016, the FASB issued 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 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. This ASU becomes effective for the Company on January 1, 2019. Early adoption is permitted. Management is currently evaluating the potential impact of this ASU on the consolidated financial statements of the Company.

In February 2016, the FASB issued ASU 2016-02, "Leases." As a result of this ASU, lessees will be required to recognize the following for all leases (with the exception of short-term leases) 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. As a result of this ASU, lessor accounting is largely unchanged and lessees will no longer be provided with a source of off-balance sheet financing. This ASU becomes effective for the Company on January 1, 2019. Early adoption is permitted. Lessees (for capital and operating leases) and lessors (for sales-type, direct financing, and operating leases) must apply a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements. The modified retrospective approach would not require any transition accounting for leases that expired before the earliest comparative period presented. Lessees and lessors may not apply a full retrospective transition approach. Management is currently evaluating the potential impact of this ASU on the consolidated financial statements of the Company.

In May 2014, the FASB issued 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. In August 2015, the FASB issued ASU 2015-14, "Revenue from Contracts with Customers: Deferral of the Effective Date," which deferred the effective date of this guidance for the Company until January 1, 2019. Management is currently evaluating the potential impact of these collective changes on the consolidated financial statements of the Company. The Company plans to utilize the modified retrospective method in connection with its future adoption of this ASU, as amended.

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 \$8,037 and \$14,422 for the three and six months ended June 30, 2018, respectively. 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. At June 30, 2018, the Company had approximately \$11,584 in unrestricted cash and cash equivalents.

In March 2018 the Company entered into a three-year, \$15,000 revolving credit facility with a related party (Note 11) to provide additional funding for working capital and general corporate purposes.

In June 2018 the Company initiated a global cost realignment program focused on a reduction in the Company's production overhead costs and operating expenses.

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 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:

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
Foreign currency translation adjustments	2018	2017	2018	2017
Balance at beginning of period	\$(8,082)	\$(13,709)	\$(9,484)	\$(14,735)
Other comprehensive (loss) income	(2,240)	2,493	(838)	3,519
Balance at end of period	\$(10,322)	\$(11,216)	\$(10,322)	\$(11,216)

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, 2018 and 2017, 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 (536,635 – 2018 and 351,137 – 2017) and unvested restricted stock issued (52,502 – 2018 and 83,670 – 2017), was anti-dilutive.

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

	Three Months Ended		Six Months Ended	
	June 30,		June 30,	
	2018	2017	2018	2017
Net loss	\$(8,037)	\$(6,403)	\$(14,422)	\$(13,194)
Weighted average shares outstanding (basic and diluted)	16,149,617	16,045,949	16,144,092	16,037,475
Net loss per common share:				
Basic	\$(0.50)	\$(0.40)	\$(0.89)	\$(0.82)
Diluted	\$(0.50)	\$(0.40)	\$(0.89)	\$(0.82)

Note 5. Restructuring

Desenzano del Garda, Italy

In December 2017 the Company committed to a plan to consolidate certain of its three-dimensional (“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 facility rentals during the six months ended June 30, 2018.

North Las Vegas, Nevada and Chesterfield, Michigan

In January 2017 the Company committed to a plan to consolidate certain of its 3D printing operations from its North Las Vegas, Nevada facility into its Troy, Michigan and Houston, Texas facilities and exit its non-core specialty machining operations in its Chesterfield, Michigan facility. These actions were taken as a result of the accelerating adoption rate of the Company’s indirect printing technology in North America which resulted in a refocus of the Company’s operational strategy.

As a result of these actions, during the three months ended March 31, 2017, the Company recorded charges of approximately \$984, including approximately \$110 associated with involuntary employee terminations, approximately \$7 associated with other exit costs and approximately \$867 associated with asset impairments. Charges associated with involuntary employee terminations and other exit costs were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss. Charges associated with asset impairments were split between cost of sales (\$598), as a component of depreciation expense, and selling, general and administrative expenses (\$269), as a component of amortization expense, in the accompanying condensed statement of consolidated operations and comprehensive loss. During the three months ended June 30, 2017, the Company recorded an additional charge of approximately \$32 associated with an additional involuntary employee termination which required a service commitment through April 2017. This charge was recorded to cost of sales in the accompanying condensed statement of operations and comprehensive loss. 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 during 2017.

Charges associated with asset impairments relate principally to the Company’s plan to exit its non-core specialty machining operations in its Chesterfield, Michigan facility. On April 21, 2017, the Company sold to a third party certain assets associated with these operations including inventories (approximately \$79), property and equipment

(approximately \$2,475) and other contractual rights (approximately \$269). Total gross proceeds from the sale of these assets were approximately \$2,050. After deducting costs directly attributable to the sale of these assets (approximately \$128), the Company recorded an impairment loss during the three months ended March 31, 2017, of approximately \$859 split between property and equipment (\$590) and intangible assets (\$269) based on the excess of the carrying value over the estimated fair value of the related assets at March 31, 2017. During the three months ended June 30, 2017, the Company recorded a loss on disposal of approximately \$42. Both the impairment loss and the loss on disposal were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss.

Separate from the transaction described above, on May 9, 2017, the Company sold to a third party certain property and equipment (principally land and building) associated with its North Las Vegas, Nevada facility. Total gross proceeds from the sale of these assets were approximately \$1,950. After deducting costs directly attributable to the sale of these assets (approximately \$137), the Company recorded a gain on disposal (recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss) during the three months ended June 30, 2017, of approximately \$347. Additionally, the Company recorded an impairment loss during the three months ended March 31, 2017, of approximately \$8 associated with certain property and equipment which was abandoned in connection with the Company's exit of its North Las Vegas, Nevada facility.

Note 6. Impairment

During the three months ended June 30, 2018, 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 7. 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:

	June 30, 2018	December 31, 2017
Cash and cash equivalents	\$ 11,584	\$ 21,848
Restricted cash	1,463	330
Cash, cash equivalents, and restricted cash	\$ 13,047	\$ 22,178

Restricted cash at June 30, 2018 includes approximately \$963 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 10). Restricted cash at June 30, 2018 and December 31, 2017 includes approximately \$500 and \$330, 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 8. Inventories

Inventories consist of the following:

	June 30, 2018	December 31, 2017
Raw materials and components	\$9,092	\$ 7,171
Work in process	6,334	4,630
Finished goods	5,125	3,629
	\$20,551	\$ 15,430

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, 2018 and December 31, 2017, the allowance for slow-moving and obsolete inventories was approximately \$4,026 and \$3,437, 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.

During the three months ended June 30, 2017, the Company recorded a charge of approximately \$1,460 to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss attributable to certain raw material and component inventories (principally machine frames and other fabricated components) associated with the Company's Exerial 3D printing machine platform based on decisions made by the Company during the period related to certain design changes to the underlying platform (rendering certain elements of the previous design obsolete).

During the three and six months ended June 30, 2018, the Company recorded a net credit of approximately (\$15) and (\$30), respectively, to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss associated with certain inventories for which cost was determined to exceed net realizable value. During the three and six months ended June 30, 2017, the Company recorded a net (credit) charge of approximately (\$79) and \$127, respectively, to cost of sales in the accompanying

condensed statement of consolidated operations and comprehensive loss associated with certain inventories for which cost was determined to exceed net realizable value.

Note 9. 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 (such amounts reflected in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheet for each respective period):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2018	2017	2018	2017
Balance at beginning of period	\$1,148	\$1,044	\$1,300	\$1,115
Provisions for new issuances	167	284	386	520
Payments	(120)	(84)	(328)	(253)
Reserve adjustments	(252)	(216)	(439)	(366)
Foreign currency translation adjustments	(34)	47	(10)	59
Balance at end of period	\$909	\$1,075	\$909	\$1,075

Note 10. Contingencies and Commitments

Contingencies

On March 1, 2018, the Company's ExOne GmbH subsidiary notified Voxeljet AG that it has 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

\$1,500 (€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, 2018 and December 31, 2017, there were no outstanding borrowings in the form of overdraft credit or short-term loans under the credit facility. At June 30, 2018, total outstanding financial guarantees and letters of credit issued by ExOne GmbH under the credit facility were approximately \$963 (€824) with expiration dates ranging from July 2018 through July 2019. At December 31, 2017, total outstanding financial guarantees and letters of credit issued by ExOne GmbH under the credit facility were approximately \$1,128 (€941).

In connection with the related party revolving credit facility agreement entered into by the Company on March 12, 2018 (Note 11), the Company was required to post cash collateral against outstanding financial guarantees and letters of credit associated with the credit facility (Note 7).

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, 2018, ExOne GmbH had a singular financial guarantee outstanding under a separate agreement for approximately \$93 (€80) with an expiration date of June 2022. 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 11. 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, 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 6.7% and 7.1% at inception and June 30, 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 inception and June 30, 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, who was the Executive Chairman of the Company at the time the Company entered into the LBM Credit Agreement and effective June 20, 2018, became the Chairman and Chief Executive Officer of the Company. 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 subject to review and approval by a sub-committee of independent members of the Board of Directors of the Company (which included each of the members of the Audit Committee of the Board of Directors). At the time of execution of the LBM Credit Agreement, the \$15,000 in available loan proceeds were deposited into an escrow account with an unrelated, third party financial institution 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 LBM Credit Agreement.

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

The Company incurred approximately \$264 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 and six months ended June 30, 2018, the Company recorded interest expense relating to the LBM Credit Agreement of approximately \$49 and \$59, respectively. Included in interest expense for the three and six months ended June 30, 2018 was approximately \$21 and \$25, respectively, associated with amortization of debt issuance costs (resulting in approximately \$239 in remaining debt issuance costs at June 30, 2018, of which \$88 was included in prepaid expenses and other current assets and \$151 was included in other noncurrent assets in the accompanying condensed consolidated balance sheet). Included in interest expense for the three and six months ended June 30, 2018 was approximately \$28 and \$34, respectively, associated with the commitment fee on the unused portion of the revolving credit facility, of which at June 30, 2018 approximately \$9 was included in accounts payable in the accompanying condensed consolidated balance sheet. Amounts payable to LBM at June 30, 2018 were settled by the Company in July 2018.

Note 12. Income Taxes

The provision for income taxes for the three months ended June 30, 2018 and 2017 was approximately \$18 and \$9, respectively. The provision for income taxes for the six months ended June 30, 2018 and 2017 was approximately \$35 and \$9, respectively. The Company has completed a discrete period computation of its provision 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, 2018 and 2017 was 0.2% (provision on a loss) and 0.1% (provision on a loss), respectively. The effective tax rate for the six months ended June 30, 2018 and 2017 was 0.2% (provision on a loss) and 0.1% (provision on a loss), respectively. The effective tax rate differs from the United States federal statutory rate of 21.0% (2018) and 34.0% (2017) for each of the periods presented primarily due to net changes in valuation allowances for the periods.

In December 2017, the Tax Cuts and Jobs Act (the “Tax Act”) was enacted into law. The Tax Act reduces the corporate income tax rate from 34% to 21% and generally modifies certain United States income tax deductions and the United States taxation of certain foreign earnings, among other changes. The Company is required to recognize the effect of tax law changes in the period of enactment. As a result of the Tax Act, the Company re-measured its United States deferred tax assets and liabilities as well as its valuation allowance against its net United States deferred tax assets at December 31, 2017. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118: Income Tax Accounting Implications of the 2017 Tax Cuts and Jobs Act (“SAB 118”), which allows the Company to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. As ongoing guidance and accounting interpretations are expected over the next year, the Company considers its accounting of the deferred tax re-measurements and other items to be incomplete due to the forthcoming guidance and its ongoing analysis of final December 31, 2017 data and tax positions. No provisional amounts have been recorded by the Company. The Company expects to complete its analysis within the measurement period in accordance with SAB 118.

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 capitalized expenses and intercompany transactions. At June 30, 2018 and December 31, 2017, the liability for uncertain tax positions was approximately \$837 and \$858, respectively, and was included in accrued expenses and other current liabilities in the accompanying condensed consolidated balance sheet. At June 30, 2018 and December 31, 2017, the Company had an additional liability for uncertain tax positions related to its ExOne GmbH (Germany) subsidiary of approximately \$345 and \$323, respectively, which were fully offset against net operating loss carryforwards. At June 30, 2018 and December 31, 2017, the Company had an additional liability for uncertain tax positions related to its ExOne KK (Japan) subsidiary of approximately \$689 and \$594, respectively, which were fully offset against net operating loss carryforwards.

At June 30, 2018, the Company’s ExOne GmbH (2010-2013) and ExOne Property GmbH (2013) subsidiaries were under examination by local taxing authorities. The Company is unable to reasonably predict an outcome related to this examination, the result of which may be material in a future period to the financial position, results from operations and cash flows of the Company.

Note 13. Equity-Based Compensation

On January 24, 2013, the Board of Directors of the Company 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 of Directors, provided that the maximum number of shares authorized under the Plan will not exceed 1,992,241 shares, subject to certain adjustments. The maximum number of shares of common stock are currently reserved for 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 of Directors of the Company adopted the 2018 Annual Incentive Program (the “Program”) as a subplan under the Plan. The Program provides an opportunity for performance-based compensation to senior executive officers of the Company, among others. The target annual incentive for each Program participant is expressed as a percentage of base salary and is conditioned on the achievement of certain financial goals (as approved by the Compensation Committee of the Board of Directors) or a combination of financial and non-financial goals. The Compensation Committee of the Board of Directors retains negative discretion over amounts payable under the Program. For 2018, the total target amount payable under the Program is approximately \$1,423, with certain amounts to be settled with participants in cash, equity or a combination

thereof. During the three and six months ended June 30, 2018, total compensation expense associated with the Program was approximately \$163 and \$305, respectively, split between cost of sales (\$24 and \$45, respectively), research and development (\$47 and \$90, respectively) and selling general and administrative expenses (\$92 and \$170, respectively) in the accompanying condensed statement of consolidated operations and comprehensive loss, of which approximately \$132 is expected to be settled in equity by the Company.

The following table summarizes the total equity-based compensation (benefit) expense recognized by the Company:

	Three Months Ended June 30, 2018		Six Months Ended June 30, 2017	
Equity-based compensation (benefit) expense recognized:				
Stock options	\$(175)	\$133	\$28	\$476
Restricted stock	100	141	206	359
Other ^(a)	70	—	140	—
Total equity-based compensation expense before income taxes	(5)	274	374	835
Benefit for income taxes ^(b)	—	—	—	—
Total equity-based compensation expense net of income taxes	\$(5)	\$274	\$374	\$835

(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, 2018, total future compensation expense related to unvested awards yet to be recognized by the Company was approximately \$228 for stock options and \$284 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.

During the six months ended June 30, 2018, 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:

	March 16, 2018
Weighted average fair value per stock option	\$3.77
Volatility	62.58%
Average risk-free interest rate	2.45%
Dividend yield	0.00%
Expected term (years)	3.3

During the six months ended June 30, 2017, 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:

February 10,

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	2017
Weighted average fair value per stock option	\$5.46 - \$5.75
Volatility	62.89% - 63.75%
Average risk-free interest rate	1.89% - 1.94%
Dividend yield	0.00%
Expected term (years)	5.0 - 5.5

For certain stock option awards, volatility is estimated based on the historical volatility of the Company when the expected term of the award is less than the period for which the Company has been publicly traded. For certain stock option awards, volatility is estimated based on the historical volatilities of certain peer group companies when the expected term of the award exceeds the period for which the Company has been publicly traded. 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.

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The activity for stock options was as follows:

	Six Months Ended June 30, 2018			2017		
	Number of Options	Weighted Average Exercise Price	Grant Date Fair Value	Number of Options	Weighted Average Exercise Price	Grant Date Fair Value
Outstanding at beginning of period	674,470	\$ 11.58	\$ 6.41	314,303	\$ 15.62	\$ 9.38
Stock options granted	24,000	\$ 8.36	\$ 3.77	44,000	\$ 10.10	\$ 5.51
Stock options exercised	—	\$ —	\$ —	—	\$ —	\$ —
Stock options forfeited	(133,835)	\$ 9.44	\$ 5.15	(500)	\$ 15.74	\$ 9.60
Stock options expired	(28,000)	\$ 10.03	\$ 5.19	(6,666)	\$ 17.43	\$ 10.67
Outstanding at end of period	536,635	\$ 12.05	\$ 6.68	351,137	\$ 15.04	\$ 8.96
Stock options exercisable at end of period	396,627	\$ 13.14	\$ 7.53	226,471	\$ 15.72	\$ 9.43
Stock options expected to vest at end of period	140,008	\$ 8.96	\$ 4.29	124,666	\$ 13.80	\$ 8.11

At June 30, 2018, there was no intrinsic value associated with stock options exercisable or expected to vest. The weighted average remaining contractual term of stock options exercisable and expected to vest at June 30, 2018, was approximately 3.8 years and 5.0 years, respectively. There were no stock option exercises during the six months ended June 30, 2018 or 2017.

The activity for restricted stock was as follows:

	Six Months Ended June 30, 2018		2017	
	Shares of	Restricted Weighted Average Grant Date Fair Value	Shares of	Restricted Weighted Average Grant Date Fair Value
Outstanding at beginning of period	52,502	\$ 11.07	94,171	\$ 14.29
Restricted stock granted	25,000	\$ 8.21	30,000	\$ 10.10
Restricted stock vested	(25,000)	\$ 10.10	(28,834)	\$ 14.69
Restricted stock forfeited	—	\$ —	(11,667)	\$ 14.28
Outstanding at end of period	52,502	\$ 10.17	83,670	\$ 12.65
Restricted stock expected to vest at end of period	52,502	\$ 10.17	83,670	\$ 12.65

Restricted stock vesting during the six months ended June 30, 2018 and 2017, had a fair value of approximately \$205 and \$299, respectively.

Note 14. 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:

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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.

During the three months ended March 31, 2017, the Company entered into two separate foreign exchange forward contracts with a German bank in an effort to hedge the variability of certain foreign exchange risks between the euro (the functional currency of the Company's ExOne GmbH subsidiary) and the British pound sterling (the currency basis for cash flows resulting from a commercial sales arrangement with a customer). The first of the two foreign exchange forward contracts was both entered into and settled (in connection with cash received from the customer) during the three months ended March 31, 2017, resulting in a realized gain on settlement of approximately \$16 (€15). The second of the two foreign exchange forward contracts remained outstanding at June 30, 2017, and during the three and six months ended June 30, 2017, generated an unrealized gain of approximately \$5 (€4). Neither of the contracts was designated as a hedging instrument and accordingly, realized and unrealized gains (losses) have been recorded to other (income) expense – net in the accompanying condensed statement of consolidated operations and comprehensive loss. The Company classified both contracts as Level 2 fair value measurements. There were no such contracts entered into by the Company during the six months ended June 30, 2018. There were no such contracts outstanding at either June 30, 2018 or December 31, 2017.

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

	June 30, 2018		December 31, 2017	
	Carrying	Fair	Carrying	Fair
	Value	Value	Value	Value
Cash and cash equivalents	\$11,584	\$11,584	\$21,848	\$21,848
Restricted cash	\$1,463	\$1,463	\$330	\$330
Debt issuance costs ^(a)	\$239	\$—	\$—	\$—
Current portion of long-term debt ^(b)	\$140	\$145	\$137	\$142
Current portion of capital leases	\$16	\$16	\$15	\$15
Long-term debt net of current portion ^(b)	\$1,437	\$1,459	\$1,508	\$1,533
Capital leases net of current portion	\$41	\$41	\$36	\$36

(a)

Represents debt issuance costs associated with the Company's related party revolving credit facility (Note 11) of which \$88 are included in prepaid expenses and other current assets and \$151 are included in other noncurrent assets in the accompanying condensed consolidated balance sheet at June 30, 2018.

(b) Carrying values at June 30, 2018 and December 31, 2017 are net of unamortized debt issuance costs of approximately \$27 and \$30, respectively.

The carrying amounts of cash and cash equivalents, restricted cash, current portion of long-term debt and current portion of capital leases approximate fair value due to their short-term maturities. The fair value of long-term debt – net of current portion and capital leases – net of current portion have 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 are classified in Level 1; current portion of long-term debt, current portion of capital leases, long-term debt – net of current portion and capital leases – net of current portion are classified in Level 2.

Note 15. Concentration of Credit Risk

During the three months and six months ended June 30, 2018 and 2017, 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, 2018 and 2017, the Company's five most significant customers represented approximately 33.0% and 37.4% of total revenue, respectively. For the six months ended June 30, 2018 and 2017, the Company's five most significant customers represented approximately 25.2% and 25.7% of total revenue, respectively. At June 30, 2018 and December 31, 2017, accounts receivable from the Company's five most significant customers were approximately \$1,156 and \$4,199, respectively.

Note 16. Related Party Transactions

Revenues

Sales of products and/or services to related parties for the three and six months ended June 30, 2017 were approximately \$9 and \$17, respectively. None of the transactions met a threshold requiring review and approval by the Audit Committee of the Board of Directors of the Company. There were no sales of products and/or services to related parties during the six months ended June 30, 2018.

There were no amounts due from related parties at June 30, 2018 or December 31, 2017.

Expenses

Purchases of products and/or services from related parties during the three months ended June 30, 2018 and 2017, were approximately \$6 and \$5, respectively. Purchases of products and/or services from related parties during the six months ended June 30, 2018 and 2017, were approximately \$12 and \$8, respectively. Purchases of products and/or services by the Company during each of the respective periods included website design services and leased office space from related parties under common control by S. Kent Rockwell, who is the Chairman and Chief Executive Officer of the Company and prior to June 20, 2018, was the Executive Chairman of the Company. 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 at June 30, 2018 and December 31, 2017, were approximately \$2 and \$1, respectively. Amounts due to related parties for both periods are reflected in accounts payable in the accompanying condensed consolidated balance sheet.

Other

Refer to Note 11 for further discussion relating to a revolving credit facility with a related party entered into in March 2018.

Note 17. 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, 2017.

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," "assess," "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, 2017, the following factors, among others, could cause results to differ materially from forward-looking statements or historical performance: our ability to generate operating profits; fluctuations in our revenues and operating results; the results of our global cost realignment initiative; 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, Production Service Centers ("PSCs") or ExOne Adoption Centers ("EACs"); the adequacy of our protection of our intellectual property; and expectations regarding demand for our industrial products, operating revenues, 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 PSCs and EACs. We also supply the associated materials, including consumables and replacement parts, and other services, including training and technical support that is 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.

Recent Developments

In April 2018 we completed the introduction of our newest direct 3D printing machine, the Innovent+. Based on the Innovent platform, the Innovent+ system comes with our new ultrasonic recoater designed for material flexibility and ease of use. We believe that the ultrasonic recoater is the most advanced powder dispensing technology in the market. It can be quickly removed for system cleaning or powder change over. Each recoater comes with four screen configurations which allow for greater material compatibility. Expanded dust collection options have been localized to pull powder from around the buildbox and utilize a dust particulate remover with variable control. Expanded dust collection options are compatible with both the Innovent and the Innovent+ 3D printing machine platforms.

Outlook

Our operating priorities include the following:

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Continuing to accelerate the adoption rate of binder jetting technologies. 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. We expect to increase our investment in research and development by approximately \$4,000 during 2018 (as compared to 2017) as a result of these and other initiatives.

Evaluation of our business model. We continue to focus our efforts on optimizing our business model, including maximizing our facility utilization and our gross profit. We have consolidated certain of our operations to achieve efficiencies and we will continue to consider additional strategic decisions resulting in further consolidation, elimination or other modification to our existing machine manufacturing, PSC and other operations, including, but not limited to, converting certain of our PSCs into EACs. We are reviewing our product groups to better manage our product marketing and delivery to our customers to accelerate the adoption rate of our technologies. We are continuously reviewing the industry for developments in printing technologies, materials, methods, innovations or services that offer strategic benefits that can improve, accelerate or advance our products or services.

Execution of our global cost realignment. In June 2018 we announced our plans for a global cost realignment which focuses on a reduction of our production overhead costs and operating expenses in an effort to achieve net income and positive operating cash flows in 2019. As part of our plans, we have already executed on certain employee terminations and reductions in consulting expenditures. We plan to continue this process through the end of 2018 with particular focus on operational and working capital efficiencies. In connection with our plans, we expect to achieve cost savings of approximately \$2,000 to \$3,000 during the second half of 2018 (as compared to the first half of 2018), with an overall goal of cost savings of approximately \$10,000 in 2019 (as compared to full year 2018).

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 facility rentals during the six months ended June 30, 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.

In January 2017 we committed to a plan to consolidate certain of our 3D printing operations from our North Las Vegas, Nevada facility into our Troy, Michigan and Houston, Texas facilities and exit our non-core specialty machining operations in our Chesterfield, Michigan facility. These actions were taken as a result of the accelerating adoption rate of our indirect printing technology in North America which resulted in a refocus of our operational strategy.

As a result of these actions, during the three months ended March 31, 2017, we recorded charges of approximately \$984, including approximately \$110 associated with involuntary employee terminations, approximately \$7 associated with other exit costs and approximately \$867 associated with asset impairments. Charges associated with involuntary employee terminations and other exit costs were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss. Charges associated with asset impairments were split between cost of sales (\$598), as a component of depreciation expense, and

selling, general and administrative expenses (\$269), as a component of amortization expense, in the accompanying condensed statement of consolidated operations and comprehensive loss. During the three months ended June 30, 2017, we recorded an additional charge of approximately \$32 associated with an additional involuntary employee termination which required a service commitment through April 2017. This charge was recorded to cost of sales in the accompanying condensed statement of operations and comprehensive loss. 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 during 2017.

Charges associated with asset impairments relate principally to our plan to exit our non-core specialty machining operations in our Chesterfield, Michigan facility. On April 21, 2017, we sold to a third party certain assets associated with these operations including inventories (approximately \$79), property and equipment (approximately \$2,475) and other contractual rights (approximately \$269). Total gross proceeds from the sale of these assets were approximately \$2,050. After deducting costs directly attributable to the sale of these assets (approximately \$128), we recorded an impairment loss during the three months ended March 31, 2017, of approximately \$859 split between property and equipment (\$590) and intangible assets (\$269) based on the excess of the carrying value over the estimated fair value of the related assets at March 31, 2017. During the three months ended June 30, 2017, we recorded a loss on disposal of approximately \$42. Both the impairment loss and the loss on disposal were recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss.

Separate from the transaction described above, on May 9, 2017, we sold to a third party certain property and equipment (principally land and building) associated with our North Las Vegas, Nevada facility. Total gross proceeds from the sale of these assets were approximately \$1,950. After deducting costs directly attributable to the sale of these assets (approximately \$137), we recorded a gain on disposal (recorded to cost of sales in the accompanying condensed statement of consolidated operations and comprehensive loss) during the three months ended June 30, 2017, of approximately \$347. Additionally, we recorded an impairment loss during the three months ended March 31, 2017, of approximately \$8 associated with certain property and equipment which was abandoned in connection with our exit of our North Las Vegas, Nevada facility.

The consolidation of our 3D printing operations from our North Las Vegas, Nevada facility into our Troy, Michigan and Houston, Texas facilities 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 \$600, with approximately \$570 in the form of cash cost savings (principally employee-related and other operating costs) and approximately \$30 in the form of reduced depreciation expense. All cost savings associated with this consolidation are expected to benefit cost of sales. We expect to invest these cost savings into technological or process advancements that support either long-term cost benefits or revenue growth.

We expect annualized reductions in revenue related to our exit of our non-core specialty machining operations in our Chesterfield, Michigan facility of approximately \$1,400. Revenues associated with our non-core specialty machining operations in our Chesterfield, Michigan facility were approximately \$39 and \$346 for the three and six months ended June 30, 2017, respectively. We expect annualized cost savings related to this exit of approximately \$500, with approximately \$200 in the form of cash cost savings (principally employee-related and other operating costs), approximately \$200 in the form of reduced depreciation expense and approximately \$100 in the form of reduced amortization expense. Cost savings associated with the exit of this facility are expected to benefit cost of sales by approximately \$400 and selling, general and administrative expenses by approximately \$100. 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, 2018, 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.

Backlog

At June 30, 2018, our backlog was approximately \$26,600 of which approximately \$24,400 is expected to be fulfilled during the next twelve months. At December 31, 2017, our backlog was approximately \$21,300.

Results of Operations

Net Loss

Net loss for the three months ended June 30, 2018 was \$8,037, or \$0.50 per basic and diluted share, compared with a net loss of \$6,403 or \$0.40 per basic and diluted share, for the three months ended June 30, 2017. Net loss for the six months ended June 30, 2018, was \$14,422, or \$0.89 per basic and diluted share, compared with a net loss of \$13,194 or \$0.82 per basic and diluted share, for the six months ended June 30, 2017. The increase in our net loss for the three month period was principally due to a decrease in our gross profit, as well as increases in our operating expenses (research and development and selling, general and administrative expense) (all changes further described below). The increase in our net loss for the six month period was principally due to an increase in our operating expenses offset by an increase in our revenues and gross profit (all changes further described below).

Revenue

The following table summarizes revenue by product group:

	Three Months Ended				Six Months Ended			
	June 30, 2018		2017		June 30, 2018		2017	
3D printing machines	\$3,213	29.6 %	\$4,256	39.4 %	\$7,734	34.0 %	\$8,529	39.4 %
3D printed and other products, materials and services	7,644	70.4 %	6,543	60.6 %	15,016	66.0 %	13,139	60.6 %
	\$10,857	100.0%	\$10,799	100.0%	\$22,750	100.0%	\$21,668	100.0%

Revenue for the three months ended June 30, 2018 was \$10,857, compared with revenue of \$10,799 for the three months ended June 30, 2017, an increase of \$58, or 0.5%. The increase in revenue resulted from an increase in revenue attributable to our 3D printed and other products, materials and services product group, offset by a decrease in revenues attributable to our 3D printing machines product group. The increase in revenues from 3D printed and other products, materials and services principally resulted from an increase in revenues from our direct PSC printing operations as a result of increased customer acceptance of our binder jet technologies and an increase in consumable material and service revenues (maintenance services and replacement components for 3D printing machines) based on an increased global installed base of 3D printing machines along with favorable exchange rates (principally the euro versus the United States dollar), offset by a reduction in revenues associated with our indirect PSC and EAC printing operations. The decrease in revenues from 3D printing machines resulted from a slightly lower volume of units sold (seven 3D printing machines sold during the three months ended June 30, 2018, as compared to eight 3D printing machines sold during the three months ended June 30, 2017), and an unfavorable mix of machines sold offset by favorable exchange rates (principally the euro versus the United States dollar).

Revenue for the six months ended June 30, 2018, was \$22,750 compared with revenue of \$21,668 for the six months ended June 30, 2017, an increase of \$1,082, or 5.0%. The increase in revenue resulted from an increase in revenue attributable to our 3D printed and other products, materials and services product group, offset by a decrease in revenues attributable to our 3D printing machines product group. The increase in revenues from 3D printed and other products, materials and services principally resulted from an increase in revenues from our direct PSC printing operations as a result of increased customer acceptance of our binder jet technologies and an increase in consumable material and service revenues (maintenance services and replacement components for 3D printing machines) based on an increased global installed base of 3D printing machines along with favorable exchange rates (principally the euro versus the United States dollar). These increases in revenues from 3D printed and other products, materials and services were offset by decreases in product sales associated with our former specialty machining operation located in

our Chesterfield, Michigan facility (approximately \$346) following the sale of certain assets associated with this operation in April 2017 and a reduction in revenues associated with our indirect PSC and EAC printing operations. The decrease in revenues from 3D printing machines resulted primarily from an unfavorable mix of machine sold offset by favorable exchange rates (principally the euro versus the United States dollar).

The following table summarizes 3D printing machines sold by type (refer to the “Recent Developments” section above and the “Our Machines and Machine Platforms” section of Part I, Item 1 of our Annual Report on Form 10-K for the year ended December 31, 2017, for a description of 3D printing machines by type):

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	Three Months Ended June 30, 2018		Six Months Ended June 30, 2017	
3D printing machine units sold:				
S-Max	1	2	4	6
S-Print	1	—	1	—
M-Flex	1	3	1	4
Innovent+	1	—	1	—
Innovent	3	3	6	3
	7	8	13	13

Cost of Sales and Gross Profit

Cost of sales for the three months ended June 30, 2018 was \$9,267, compared with cost of sales of 8,773 for the three months ended June 30, 2017, an increase of \$494, or 5.6%. The increase in cost of sales was primarily due to an increase in our variable cost of sales associated with our increase in revenues, an increase in consulting and professional fees of approximately \$105, a reduction in net gains from the disposal of property and equipment of approximately \$256 and unfavorable exchange rates (principally the euro versus the United States dollar). Net gains on the disposal of property and equipment recorded during the three months ended June 30, 2017, primarily related to our sale of certain property and equipment (principally land and building) associated with our consolidation and exit of our North Las Vegas, Nevada PSC. Offsetting these increases was a decrease in cost of sales of approximately \$653 in net charges associated with slow-moving, obsolete and lower of cost or net realizable value inventories (principally due to the difference between the \$1,460 charge associated with our Exerial 3D printing machine platform inventories recorded during the three months ended June 30, 2017 versus the \$561 charge associated with our industrial microwave inventories recorded during the three months ended June 30, 2018).

Gross profit for the three months ended June 30, 2018 was \$1,590, compared with gross profit of \$2,026 for the three months ended June 30, 2017. Gross profit percentage was 14.6% for the three months ended June 30, 2018, compared with 18.8% for the three months ended June 30, 2017. The change in gross profit was the result of the increase in revenues net of the increase in cost of sales as further described above.

Cost of sales for the six months ended June 30, 2018 was \$18,544, compared with cost of sales of \$18,039 for the six months ended June 30, 2017, an increase of \$505, or 2.8%. The increase in cost of sales was primarily due to an increase in our variable cost of sales associated with our increase in revenues, an increase in consulting and professional fees of approximately \$297, a reduction in net gains from the disposal of property and equipment of approximately \$273 and unfavorable exchange rates (principally the euro versus the United States dollar). Net gains on the disposal of property and equipment recorded during the three months ended June 30, 2017, primarily related to our sale of certain property and equipment (principally land and building) associated with our consolidation and exit of our North Las Vegas, Nevada PSC. Offsetting these increases was a decrease in cost of sales of approximately \$1,064 in net charges associated with slow-moving, obsolete and lower of cost or net realizable value inventories (principally due to the difference between the \$1,460 charge associated with our Exerial 3D printing machine platform inventories recorded during the three months ended June 30, 2017 and the \$206 charge associated with certain work in process inventories for which cost was determined to exceed net realizable value during the three months ended March 31, 2017, versus the \$561 charge associated with our industrial microwave inventories recorded during the three months ended June 30, 2018) and a net decrease in costs associated with exit activities of approximately \$489. During six months ended June 30, 2018, we incurred costs of approximately \$258 (approximately \$17 in other exit costs and \$241 in asset impairments) associated with our consolidation of our 3D printing operations from our facility in Desenzano del Garda, Italy into our Gersthofen, Germany facility. During the six months ended June 30, 2017, we incurred costs of approximately \$747 (approximately \$142 in employee termination costs, \$7 in other exit costs and \$598 in asset impairments) associated with our consolidation of our 3D printing operations from our facility in North

Las Vegas, Nevada into our Troy, Michigan and Houston, Texas facilities and our plan to exit our non-core specialty machining operations in Chesterfield, Michigan.

Gross profit for the six months ended June 30, 2018 was \$4,206, compared with gross profit of \$3,629 for the six months ended June 30, 2017. Gross profit percentage was 18.5% for the six months ended June 30, 2018, compared with 16.7% for the six months ended June 30, 2017. The change in gross profit was the result of the increase in revenues net of the increase in cost of sales as further described above.

Research and Development

Research and development expenses for the three months ended June 30, 2018 were \$3,235, compared with research and development expenses of \$2,349 for the three months ended June 30, 2017, an increase of \$886, or 37.7%. The increase in research and development expenses was primarily due to an increase in employee-related costs (salaries, benefits and equity-based compensation) of approximately \$374 (including approximately \$71 in employee termination costs associated with our global cost realignment enacted in June 2018), an increase in consulting and professional fees associated with certain machine development and other organizational development activities of approximately \$305 and unfavorable exchange rates (principally the euro versus the United States dollar).

Research and development expenses for the six months ended June 30, 2018, were \$6,030 compared with research and development expenses of \$4,348 for the six months ended June 30, 2017, an increase of \$1,682, or 38.7%. The increase in research and development expenses was primarily due to increases in employee-related costs (salaries, benefits and equity-based compensation) of approximately \$718 (including approximately \$71 in employee termination costs associated with our global cost realignment enacted in June 2018), consulting and professional fees associated with certain machine development and other organizational development activities of approximately \$661 and material costs of approximately \$121 (primarily associated with our development of large format, fine powder direct printing capabilities).

We expect to increase our investment in research and development by approximately \$4,000 during 2018 (as compared to 2017) in an effort to accelerate the development of our large format, fine powder direct printing capabilities and our material development activities for direct and indirect printing, among other initiatives.

Selling, General and Administrative

Selling, general and administrative expenses for the three months ended June 30, 2018 were \$6,353, compared with selling, general and administrative expenses of \$6,013 for the three months ended June 30, 2017, an increase of \$340, or 5.7%. The increase in selling, general and administrative expenses was principally due to an increase in employee-related costs (salaries and benefits) of approximately \$1,037 (including approximately \$708 in employee termination costs associated with the change in our Chief Executive Officer and our global cost realignment, both enacted in June 2018) and unfavorable exchange rates (principally the euro versus the United States dollar). These increases were offset by decreases associated with equity-based compensation of approximately \$322 (primarily due to pre-vesting forfeitures associated with the change in our Chief Executive Officer in June 2018), a decrease in consulting and professional fees of approximately \$324 and net recoveries for bad debts of approximately \$48 during the three months ended June 30, 2018 versus a net provision for bad debts of approximately \$9 during the three months ended June 30, 2017.

Selling, general and administrative expenses for the six months ended June 30, 2018 were \$12,555, compared with selling, general and administrative expenses of \$12,276 for the six months ended June 30, 2017, an increase of \$279, or 2.3%. The increase in selling, general and administrative expenses was principally due to an increase in employee-related costs (salaries and benefits) of approximately \$1,402 (including approximately \$708 in employee termination costs associated with the change in our Chief Executive Officer and our global cost realignment, both enacted in June 2018) and unfavorable exchange rates (principally the euro versus the United States dollar). These increases were offset by decreases associated with equity-based compensation of approximately \$569 (primarily due to pre-vesting forfeitures associated with the change in our Chief Executive Officer in June 2018), consulting and professional fees of approximately \$218, net recoveries for bad debts of approximately \$37 during the six months ended June 30, 2018 versus a net provision for bad debts of approximately \$132 during the six months ended June 30, 2017, and the absence of an impairment of intangible assets of approximately \$269 during the six months ended June 30, 2017, in connection with our plan to exit our non-core specialty machining operations at our Chesterfield, Michigan facility.

Interest Expense

Interest expense for the three months ended June 30, 2018 was \$73, compared with interest expense of \$23 for the three months ended June 30, 2017, an increase of \$50, or 217.4%. 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 \$49 during the three months ended June 30, 2018).

Interest expense for the six months ended June 30, 2018 was \$106, compared with interest expense of \$45 for the six months ended June 30, 2017, an increase of \$61, or 135.6%. 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 \$59 during the six months ended June 30, 2018).

Other (Income) Expense – Net

Other (income) expense – net for the three months ended June 30, 2018 was (\$52), compared with other (income) expense – net of \$35 for the three months ended June 30, 2017. Amounts for both periods consisted principally of interest income on cash and cash equivalents balances and net foreign exchange (gains) losses on commercial transactions and certain intercompany transactions between subsidiaries either settled or planned for settlement in the foreseeable future.

Other (income) expense – net for the six months ended June 30, 2018 was (\$98), compared with other (income) expense – net of \$145 for the six months ended June 30, 2017. Amounts for both periods consisted principally of interest income on cash and cash equivalents balances and net foreign exchange (gains) losses on commercial transactions and certain intercompany transactions between subsidiaries either settled or planned for settlement in the foreseeable future.

Provision for Income Taxes

The provision for income taxes for the three months ended June 30, 2018 and 2017 was \$18 and \$9, respectively. The effective tax rate for the three months ended June 30, 2018 and 2017 was 0.2% (provision on a loss) and 0.1% (provision on a loss), respectively. The provision for income taxes for the six months ended June 30, 2018 and 2017, was \$35 and \$9, respectively. The effective tax rate for the six months ended June 30, 2018 and 2017, was 0.2% (provision on a loss) and 0.1% (provision on a loss), respectively. The

effective tax rate differs from the United States federal statutory rate of 21.0% (2018) and 34.0% (2017) for each of the periods presented primarily due to net changes in valuation allowances for the periods.

We have completed a discrete period computation of our provision 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.

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.

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 \$8,037 and \$14,422 for the three and six months ended June 30, 2018, respectively. 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. At June 30, 2018, we had approximately \$11,584 in unrestricted cash and cash equivalents.

In March 2018 we entered into a three-year, \$15,000 revolving credit facility with a related party (further described below).

In June 2018 we announced our plans for a global cost realignment which focuses on a reduction of our production overhead costs and operating expenses in an effort to achieve net income and positive cash flows in 2019. As part of our plans, we have already executed on certain employee terminations and reductions in consulting expenditures. We plan to continue this process through the end of 2018 with particular focus on operational and working capital efficiencies. In connection with our plans, we expect to achieve cost savings of approximately \$2,000 to \$3,000 during the second half of 2018 (as compared to the first half of 2018), with an overall goal of cost savings of approximately \$10,000 in 2019 (as compared to full year 2018).

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 cost savings measures associated with our global cost realignment program further described above). Further, we may 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, 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 our Executive Chairman (a related party) at such date, 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 6.7% and 7.1% at inception and June 30, 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 inception and June 30, 2018 the total estimated value of collateral was in significant excess of the maximum borrowing capacity under the LBM Credit Agreement.

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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, who was our Executive Chairman at the time we entered into the LBM Credit Agreement and effective June 20, 2018, became our Chairman and Chief Executive Officer. Accordingly, we do not consider the LBM Credit Agreement indicative of a fair market value lending. Prior to execution, the LBM Credit Agreement was subject to review and approval by a sub-committee of independent members of our Board of Directors (which included each of the members of the Audit Committee of the Board of Directors). At the time of execution of the LBM Credit Agreement, the \$15,000 in available loan proceeds were deposited into an escrow account with an unrelated, third party financial institution 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 LBM Credit Agreement.

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

We incurred approximately \$264 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 and six months ended June 30, 2018, we recorded interest expense relating to the LBM Credit Agreement of approximately \$49 and \$59, respectively. Included in interest expense for the three and six months ended June 30, 2018 was approximately \$21 and \$25, respectively, associated with amortization of debt issuance costs (resulting in approximately \$239 in remaining debt issuance costs at June 30, 2018, of which approximately \$88 was included in prepaid expenses and other current assets and approximately \$151 was included in other noncurrent assets in the accompanying condensed consolidated balance sheet). Included in interest expense for the three and six months ended June 30, 2018 was approximately \$28 and \$34, respectively, associated with the commitment fee on the unused portion of the revolving credit facility, of which at June 30, 2018 approximately \$9 was included in accounts payable in the accompanying condensed consolidated balance sheet. We settled all amounts payable to LBM at June 30, 2018 in July 2018.

Cash Flows

The following table summarizes the significant components of cash flows for each of the six month periods ended June 30, 2018 and 2017, and our cash, cash equivalents, and restricted cash balances at June 30, 2018 and December 31, 2017:

	Six Months Ended	
	June 30,	
	2018	2017
Net cash used for operating activities	\$(7,873)	\$(6,924)

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Net cash (used for) provided by investing activities	(794)	3,285
Net cash used for financing activities	(267)	(113)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	(197)	760
Net change in cash, cash equivalents, and restricted cash	\$(9,131)	\$(2,992)

	June 30,	December 31,
	2018	2017
Cash and cash equivalents	\$11,584	\$21,848
Restricted cash	1,463	330
Cash, cash equivalents, and restricted cash	\$13,047	\$22,178

Operating Activities

Net cash used for operating activities for the six months ended June 30, 2018 was \$7,873, compared with net cash used for operating activities of \$6,924 for the six months ended June 30, 2017. The net increase in outflows of \$949 was due to an increase in our net loss (net of noncash items) offset by an increase in net cash inflows from changes in assets and liabilities, mostly due to an increase in net cash inflows from customers (principally due to timing of cash collections on 3D printing machine sales) offset by an

increase in net cash outflows principally associated with inventory production of our 3D printing machines (consistent with our operating plans).

Investing Activities

Net cash used for investing activities for the six months ended June 30, 2018 was \$794, compared with net cash provided by investing activities of \$3,285 for the six months ended June 30, 2017.

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. Net cash provided by investing activities for the six months ended June 30, 2017, included cash inflows of approximately \$3,677 in proceeds from the sale of property and equipment, mostly attributable to our sale of assets associated with our non-core specialty machining operation in Chesterfield, Michigan and our PSC in North Las Vegas, Nevada during the three months ended June 30, 2017.

We expect our remaining 2018 capital expenditures to be limited to spending associated with sustaining our existing operations and strategic asset acquisition and deployment (additional estimated spending of less than \$1,000).

Financing Activities

Net cash used for financing activities for the six months ended June 30, 2018 was \$267, compared with net cash used for financing activities of \$113 for the six months ended June 30, 2017.

Uses of cash for both periods included principal payments on outstanding debt and capital leases. Uses of cash for the six months ended June 30, 2018 also included approximately \$188 in debt issuance costs associated with our revolving credit facility with a related party (further described above).

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, 2018, total outstanding financial guarantees and letters of credit issued by us were approximately \$1,056 (€904) with expiration dates ranging from July 2018 through June 2022. At December 31, 2017, total outstanding financial guarantees and letters of credit issued by us were approximately \$1,224 (€1,021). For further discussion related to financial guarantees and letters of credit issued by us, refer to Note 10 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, 2017.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risk from fluctuations in foreign currency exchange rates which may adversely affect our results of operations and financial condition. We seek to minimize these risks through regular operating and financing activities and, when we consider it to be appropriate, through the use of derivative financial instruments. We do not

purchase, hold or sell derivative financial instruments for trading or speculative purposes.

The local currency is the functional currency for significant operations outside of the United States. The determination of the functional currency of an operation is made based on the appropriate economic and management indicators.

Foreign currency assets and liabilities are translated into their United States dollar equivalents based on period end spot exchange rates, and are included in stockholders' equity as a component of other comprehensive income (loss). Revenues and expenses are translated at average exchange rates. Transaction gains and losses that arise from exchange rate fluctuations are charged to operations as incurred, except for gains and losses associated with certain long-term intercompany transactions for which settlement is not planned or anticipated in the foreseeable future, which are included in accumulated other comprehensive loss in the condensed consolidated balance sheet.

We transact business globally and are subject to risks associated with fluctuating foreign exchange rates. Approximately 53.1% and 45.1% of our consolidated revenue was derived from transactions outside the United States for the three months ended June 30, 2018 and 2017, respectively. Approximately 56.9% and 56.1% of our consolidated revenue was derived from transactions outside the United States for the six months ended June 30, 2018 and 2017, respectively. This revenue is generated primarily from wholly-owned

subsidiaries operating in their respective countries and surrounding geographic areas. This revenue is primarily denominated in each subsidiary's local functional currency, including the euro and Japanese yen. A hypothetical change in foreign exchange rates of +/- 10.0% for the three and six months ended June 30, 2018, would result in an increase (decrease) in revenue of approximately \$600 and \$1,300, respectively. These subsidiaries incur most of their expenses (other than intercompany expenses) in their local functional currencies.

At June 30, 2018, we held approximately \$13,047 in cash, cash equivalents, and restricted cash, of which approximately \$6,681 was held by certain of our subsidiaries in United States dollars.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of June 30, 2018, we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")) pursuant to Rules 13a-15 and 15d-15 under the Exchange Act. These controls and procedures were designed to provide reasonable assurance that the information required to be disclosed in the reports that we file or submit under the Exchange Act is 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 this evaluation, management has concluded that our disclosure controls and procedures were effective as of June 30, 2018 to provide reasonable assurance that the information required to be disclosed in the reports we file or submit under the Exchange Act is 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 management, including our Chief Executive Officer and Chief Financial Officer, in a manner to allow timely decisions regarding required disclosures.

Changes in Internal Control over Financial Reporting

There were no changes in our internal controls over financial reporting during the six months ended June 30, 2018, 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, 2017.

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.

Exhibit

Number	Description	Method of Filing
31.1	<u>Rule 13(a)-14(a) Certification of Principal Executive Officer.</u>	Filed herewith.
31.2	<u>Rule 13(a)-14(a) Certification of Principal Financial Officer.</u>	Filed herewith.
32	<u>Section 1350 Certification of Principal Executive Officer and Principal Financial Officer.</u>	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/ S. Kent Rockwell
S. Kent Rockwell
Chief Executive Officer
(Principal Executive Officer)

Date: August 9, 2018

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

Date: August 9, 2018