THORATEC CORP
Form POS AM
May 06, 2005

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**As filed with the Securities and Exchange Commission on May 6, 2005**

Registration No. 333-118274

**SECURITIES AND EXCHANGE COMMISSION**

**WASHINGTON, D.C. 20549**

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**Post-Effective**
**Amendment No. 2 To**
**FORM S-3**
**REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

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**THORATEC CORPORATION**
(Exact Name of Registrant as Specified in its Charter)

| **California** | **94-234064** |
|---|---|
| (State or Other Jurisdiction of Incorporation or Organization) | (I.R.S. Employer Identification Number) |

**6035 Stoneridge Drive**
**Pleasanton, California 94588**
**(925) 897-8600**
(Address, including Zip Code, and Telephone Number, including Area Code, of Registrant s Principal Executive Offices)

**David Lehman**
**Vice President and General Counsel**
**Thoratec Corporation**
**6035 Stoneridge Drive**
**Pleasanton, California 94588**
**(925) 897-8600**
(Address, including Zip Code, and Telephone Number, including Area Code, of Agent for Service)

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Copies to:

**Gregory J. Conklin, Esq.**
**Gibson, Dunn & Crutcher LLP**
**One Montgomery Street, 31st Floor**
**San Francisco, California 94104**
**(415) 393-8200**

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**Approximate Date of Commencement of Proposed Sale to the Public**: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. þ

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, check the following box and list the Securities Act of 1933 registration statement number of the earlier effective registration statement for the same offering. o_____

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act of 1933, check the following box and list the Securities Act of 1933 registration statement number of the earlier effective registration statement for the same offering. o_____

If delivery of this prospectus is expected to be made pursuant to Rule 434, check the following box. o

**The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

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**Explanatory Note**

The purpose of this Post-Effective Amendment No. 2 to the Registration Statement on Form S-3 of Thoratec Corporation (333-118274) is to amend and restate the text and table under the caption Selling Securityholders in the prospectus to add the names and respective holdings of the selling securityholders who have requested inclusion in the prospectus since the effective date of Amendment No. 1 to the Registration Statement. Certain other information included herein has also been updated.

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The information in this prospectus is not complete and may be changed. The selling securityholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not a solicitation of an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

**SUBJECT TO COMPLETION, DATED MAY 6, 2005**

# $247,427,000 Principal Amount at Maturity of Senior Subordinated Convertible Notes due 2034 and Shares of Common Stock Issuable upon Conversion of the Notes

We originally issued these notes in private placement transactions in May 2004. This prospectus will be used by selling securityholders to resell their notes and the common stock issuable upon conversion of the notes.

We issued the notes at an issue price of $580.98 per note (58.098% of the principal amount at maturity). Interest on the notes accruing at the rate of 1.3798% per year on the principal amount at maturity (equivalent to a rate of 2.375% per year of the issue price), is payable semiannually in arrears in cash on May 16 and November 16 of each year, beginning November 16, 2004, until May 16, 2011. After that date, we will not pay cash interest on the notes prior to maturity. Instead, on May 16, 2034, the maturity date of the notes, a holder will receive $1,000 per note. The original issue discount for non-tax purposes will accrue daily at a rate of 2.375% per year beginning on May 16, 2011 on a semiannual bond equivalent basis using a 360-day year comprised of twelve 30-day months. We purchased a portfolio of U.S. government securities that we pledged to secure the first six scheduled interest payments on the notes. Other than this pledge of U.S. government securities, the notes are unsecured, senior subordinated obligations and rank equally with our future senior subordinated indebtedness, if any, will rank junior to our existing and future senior indebtedness, and will effectively rank junior to the existing or future indebtedness of our subsidiaries.

Holders may convert each $1,000 principal amount of their notes into 29.4652 shares of our common stock, subject to adjustment, only if: (1) the sale price of our common stock reaches, or the trading price of the notes falls below, specified thresholds, (2) the notes are called for redemption, or (3) specified corporate transactions or significant distributions to holders of our common stock have occurred. Upon a conversion, we may elect to deliver cash or a combination of cash and common stock in lieu of any common stock deliverable upon conversion.

Holders may require us to purchase for cash all or a portion of their notes on May 16, 2011 at a price of $580.98 per note, on May 16, 2014 at a price of $623.62 per note, on May 16, 2019 at a price of $701.77 per note, on May 16, 2024 at a price of $789.70 per note, and on May 16, 2029 at a price of $888.65 per note, in each case plus accrued but unpaid interest, if any. In addition, if we experience a fundamental change as described in this prospectus, each holder may require us to repurchase all or a portion of its notes, subject to specified exceptions, at a price equal to the sum of the issue price, accrued original issue discount and accrued but unpaid cash interest and liquidated damages, if any, plus in certain circumstances, a make-whole premium. Upon a fundamental change, we may pay the repurchase price in cash or, in certain circumstances, we may choose to pay the repurchase price in shares of our common stock or a combination of cash and shares of our common stock.

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We may redeem for cash all or a portion of the notes at any time on or after May 16, 2011, at a price equal to the sum of the original issue price, the accrued original issue discount and accrued but unpaid cash interest, if any, to the redemption date.

Since their original issuance, the notes and the shares of common stock issuable upon conversion of the notes have been eligible for trading in the Private Offerings, Resales and Trading through Automated Linkages ( PORTAL ) system of the National Association of Securities Dealers, Inc. However, notes sold by means of this prospectus and the shares of common stock issuable upon conversion thereof will no longer be eligible for trading on the PORTAL Market. We do not intend to list the notes on any other automated quotation system or any securities exchange. Our common stock currently trades on the NASDAQ National Market under the symbol THOR. On April 28, 2005, the last reported sale price of our common stock on the NASDAQ National Market was $13.11 per share.

The selling securityholders will receive all of the net proceeds from sales of the securities and will pay all underwriting discounts and selling commissions, if any. We are responsible for the payment of other expenses incident to the registration of the securities. We will not receive any proceeds from this offering.

**Investing in the notes and the common stock issuable upon conversion of the notes involves risks that are described in the Risk Factors section beginning on page 6 of this prospectus.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.**

The date of this prospectus is May __, 2005.

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**You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information appearing in this prospectus and the documents incorporated in this prospectus by reference are accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.**

References in this prospectus to Thoratec, we, us and our refer to Thoratec Corporation, a company incorporated the State of California, and its direct and indirect subsidiaries, unless the context otherwise requires or otherwise specified in this prospectus.

Thoratec, the Thoratec logo, Thoralon, TLC-II, HeartMate, HeartPak and Vectra are registered trademarks, and Aria is a trademark, of Thoratec Corporation. HEMOCHRON, ProTime, Surgicutt, Tenderlett, tenderfoot and IRMA are registered trademarks of International Technidyne Corporation, or ITC, our wholly-owned subsidiary. Each trademark, trade name or service mark of any other company appearing in this prospectus belongs to its holder.

## MARKET AND INDUSTRY DATA

Market data used throughout this prospectus and the documents incorporated by reference herein, including information relating to our relative position in the medical device industry, is based on the good faith estimates of our management, which estimates are based upon their review of internal surveys, independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. Although we are not aware of any misstatements regarding the market and industry data presented in this prospectus, our estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under the heading Risk Factors.

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein include forward-looking statements. For these statements, we claim the protection of the safe harbor for forward looking statements provided by Section 27A of the Securities Act of 1933, as amended, and 21E of the Securities Exchange Act of 1934, as amended. We

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have based these forward-looking statements on our current expectations and projections about future events. Our actual results could differ materially from those discussed in, or implied by, these forward-looking statements. Forward-looking statements are identified by words such as believe, anticipate, expect, intend, plan, may , h other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

- our ability to obtain and maintain regulatory approval of our products for sale in the United States and internationally;
- the results and timing of our clinical trials;
- reimbursement policies and decisions by government agencies and third party payors;
- other competing therapies that may currently, or in the future, be available to heart failure patients;
- our plans to develop and market new products and the rate of market penetration of our new products; and
- our ability to improve our financial performance.

Factors that could cause actual results or conditions to differ from those anticipated by these and other forward-looking statements include those more fully described in the Risk Factors section of this prospectus and in the Competition, Patents and Proprietary Technology, Government Regulation, Factors That May Affect Future Results, Results of Operations, Qualitative and Quantitative Disclosures About Market Risk, and Liquidity and Capital Resources sections contained in our Annual Report on Form 10-K for the fiscal year ended January 1, 2005 and the risks discussed in our other SEC filings, which identify important risks and uncertainties that could cause actual results to differ materially from those contained in the forward-looking statements and in other documents we file with the SEC. We are not obligated to update or revise these forward-looking statements to reflect new events or circumstances.

We urge you to consider these factors carefully in evaluating the forward-looking statements contained in this prospectus. All subsequent written or oral forward-looking statements attributable to our company or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The forward-looking statements included in this prospectus are made only as of the date of this prospectus. We do not intend, and undertake no obligation, to update these forward-looking statements.

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## SUMMARY

### Overview

We are a leading manufacturer of circulatory support products for use by patients with congestive heart failure, or CHF. We are a leading provider of circulatory support products worldwide. We sell Ventricular Assist Devices, or VADs, to virtually every leading heart transplant center in the world; marketing three out of the four VADs approved by the United States Food and Drug Administration, or FDA, as a bridge to heart transplant for adults. We are also a leading provider of point-of-care blood diagnostic test systems.

Our business is comprised of two segments; Cardiovascular and ITC. The major product lines within the Cardiovascular market are:

*Circulatory Support Products.* Our circulatory support products include VADs for the short-term and long-term treatment of congestive heart failure.

*Vascular Graft Products.* We have developed small diameter grafts using our proprietary materials to address the vascular access market. Our grafts are sold in the United States and internationally for use in hemodialysis.

The major product line of our ITC segment is:

*Point-of-Care Diagnostics.* We are a leading supplier of point-of-care blood diagnostics test systems that provide fast, accurate blood test results to improve patient management, reduce healthcare costs and improve patient outcomes.

According to the American Heart Association, 4.9 million patients in the United States suffer from CHF and an additional 550,000 patients are diagnosed with this disease annually. We were the first company to receive approval from the FDA to commercially market a VAD to treat patients with late-stage heart failure, which comprises approximately 5% to 10% of the CHF patient population. Our VADs are used primarily by CHF patients to perform some or all of the pumping function of the heart and we currently offer the widest range of products to serve this market. We believe that our long-standing reputation for quality and innovation and our excellent relationships with leading cardiovascular surgeons worldwide position us to capture growth opportunities in the expanding congestive heart failure market.

We currently market VADs that may be implanted or worn outside the body and that are suitable for treatments for different durations for patients of varying sizes and ages. We estimate that doctors have implanted over 9,000 of our devices in patients suffering from heart failure. Our devices are currently used primarily for patients awaiting a heart transplant or Destination Therapy implants. On November 6, 2002, the FDA approved the HeartMate VAD as the first heart assist device for Destination Therapy, or permanent support for patients suffering from end-stage heart failure who are not eligible for heart transplantation. On April 7, 2003, the FDA approved the HeartMate XVE, an enhanced version of the HeartMate VAD, for Destination Therapy. Thoratec is the only company to have a ventricular assist device approved for Destination Therapy in the United States.

### Corporate Information

We were incorporated in California in March 1976. On February 14, 2001, we changed our name from Thoratec Laboratories Corporation to Thoratec Corporation. Our executive offices are located at 6035 Stoneridge Drive, Pleasanton, California 94588, and our telephone number is (925) 847-8600. Our website address is http://www.thoratec.com. The information found on our website and on websites linked from it are not incorporated into or otherwise made a part of this prospectus.

**The Offering**

The following is a brief summary of certain terms of this offering. For a more complete description of the

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terms of the notes, see Description of Notes in this prospectus.

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| Issuer | Thoratec Corporation, a California corporation. |
| Notes offered | $247,427,000 aggregate principal amount at maturity of senior subordinated convertible notes due 2034. Each note will have a principal amount at maturity of $1,000 and was issued at a price of $580.98 per note (58.098% of the principal amount at maturity). |
| Maturity | May 16, 2034. |
| Cash interest | 1.3798% per year on the principal amount at maturity (equivalent to a rate of 2.375% per year on the issue price), payable semiannually in arrears in cash on May 16 and November 16 of each year, beginning November 16, 2004 until May 16, 2011. |
| Original issue discount | We issued the notes at an issue price significantly below the principal amount at maturity of the notes. As a result, the original issue discount, for non-tax purposes, will accrue daily at a rate of 2.375% per year beginning on May 16, 2011, calculated on a semiannual bond equivalent basis using a 360-day year comprised of twelve 30-day months. |
| Security | We purchased and pledged to the trustee under the indenture for the exclusive benefit of the holders of the notes approximately $9.8 million of U.S. government securities, which we expect will be sufficient, upon receipt of scheduled principal and interest payments thereon, to provide for payment in full of the first six scheduled interest payments, but not liquidated damages, if any, on the notes when due. The notes will not otherwise be secured. |
| Conversion rights | If the conditions for conversion are satisfied, for each $1,000 principal amount at maturity of notes surrendered for conversion you will receive 29.4652 shares of our common stock, which we refer to in this prospectus as the conversion rate.<br><br>In lieu of delivering shares of our common stock upon notice of conversion of all or any portion of the notes, we may elect to pay holders surrendering notes an amount in cash per note (or a portion of a note) equal to the average sale price of our common stock for the five consecutive trading days immediately following (a) the date of our notice of our election to deliver cash if we have not given notice of redemption or (b) the conversion date, in the case of conversion following our notice of redemption specifying that we intend to deliver cash upon conversion, in either case multiplied by the conversion rate in effect on that date. If an event of default (other than a default in a cash payment upon conversion of the notes) has occurred and is continuing, we may not pay cash upon conversion of |

any notes or portion of the notes (other than cash for fractional shares). A holder of a note otherwise entitled to a fractional share will receive cash equal to the applicable portion of the closing price of our common stock on the trading day immediately preceding the conversion date.

The conversion rate may be adjusted for certain reasons, but will not be adjusted for accrued original issue discount or accrued but unpaid cash interest. Upon conversion, a holder will not receive any cash payment representing accrued but unpaid cash interest. Instead, accrued but unpaid cash interest will be deemed paid upon payment of the conversion price in

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| | cash or a combination of cash and common stock.<br><br>At any time after September 30, 2004, holders may surrender notes for conversion, if, as of the last day of the preceding calendar quarter, the closing sale price of our common stock for at least 20 trading days in a period of 30 consecutive trading days ending on the last trading day of such preceding calendar quarter is more than 120% of the accreted conversion price per share of common stock on the last day of such preceding calendar quarter for any one quarter. If the foregoing condition is satisfied, then the notes will thereafter be convertible at any time at the option of the holder, through maturity. The accreted conversion price per share as of any day will equal the sum of the issue price of the note plus the accrued original issue discount to that day, divided by the then applicable conversion rate.<br><br>Holders may surrender notes for conversion at any time on or prior to May 16, 2029 during the five business day period after any five consecutive trading day period in which the trading price per note for each day of that period was less than 98% of the product of the closing sale price of our common stock and the conversion rate on each such day; provided that if on the day prior to any conversion pursuant to this trading price condition the closing sale price of our common stock is greater than the accreted conversion price but less than or equal to 120% of the accreted conversion price, then holders will receive upon conversion, in lieu of shares of common stock based on the conversion rate, cash or common stock or a combination of cash and common stock at our option with a value equal to the accreted principal amount of the notes plus accrued and unpaid cash interest and liquidated damages, if any, as of the conversion date.<br><br>Notes or portions of notes in integral multiples of $1,000 principal amount at maturity called for redemption may be surrendered for conversion until the close of business on the second business day prior to the redemption date. In addition, if we make a significant distribution to our shareholders or if we are a party to certain consolidations, mergers or share exchanges, notes may be surrendered for conversion, as provided in Description of Notes Conversion Rights. |
| Redemption of notes at our option | We may redeem, for cash, all or a portion of the notes at any time on or after May 16, 2011, at a price equal to the sum of the issue price and the accrued original issue discount, plus accrued and unpaid cash interest, if any, to the redemption date. See Description of Notes Redemption of Notes at Our Option. |
| Purchase of the notes by Thoratec at the option of the holder | Holders may require us to purchase all or a portion of their notes on each of the following dates at the following prices, plus accrued but unpaid cash interest, if any, to the purchase date: |

On May 16, 2011 at a price of $580.98 per note;

On May 16, 2014 at a price of $623.62 per note;

On May 16, 2019 at a price of $701.77 per note;

On May 16, 2024 at a price of $789.70 per note; and

On May 16, 2029 at a price of $888.65 per note.

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| | We may only pay the purchase price in cash and not in common stock. |
| Fundamental Change | If we undergo a fundamental change (as described in this prospectus), except in certain circumstances, you will have the option to require us to repurchase all or any portion of your notes. The fundamental change repurchase price will be the sum of the issue price and accrued original issue discount plus accrued but unpaid cash interest and liquidated damages, if any, plus, in certain circumstances, a make-whole premium. Upon a fundamental change we may pay the repurchase price in cash or, in certain circumstances, we may choose to pay the repurchase price in shares of our common stock or a combination of cash and shares of our common stock. |
| Ranking | The notes: |
| | are our general senior subordinated unsecured obligations (except as set forth in Description of Notes Security ); |
| | are subordinated in right of payment to all of our existing and future senior indebtedness (except as set forth in Description of Notes Security ); and |
| | are structurally subordinated to any present and future secured indebtedness of Thoratec Corporation as well as indebtedness and liabilities of our subsidiaries. |
| | At January 1, 2005, we had no outstanding indebtedness other than trade payables and the notes. Because the notes are subordinated, in the event of bankruptcy, liquidation or dissolution and acceleration of or payment default on senior indebtedness, holders of the notes will not receive any payment until holders of senior or secured indebtedness have been paid in full. The terms of the indenture under which the notes are issued do not limit our ability to incur additional indebtedness. |
| Use of proceeds | The selling securityholders will receive all of the proceeds from the sale of the notes and the common stock pursuant to this prospectus, and we will receive none of the proceeds. |
| Registration rights | We entered into a registration rights agreement with the initial purchaser of the notes pursuant to which we agreed, for the benefit of holders, to: |
| | file with the Securities and Exchange Commission within 90 days after the original issue date of the notes, and |

use reasonable best efforts to cause to become effective within 180 days after the original issue date of the notes,

a shelf registration statement with respect to the resale of the notes and the shares of our common stock issuable upon conversion of the notes. We will keep such shelf registration statement effective until the earlier of the (1) sale pursuant to the shelf registration statement of all the notes and the shares of our common stock issuable upon conversion of the notes and (2) expiration of the holding period applicable to such securities held by persons who are not affiliates of Thoratec under Rule 144(k) under the Securities Act of 1933, or any successor provision, subject to certain permitted exceptions. We will be required to pay liquidated damages to the holders of the notes if we fail to comply with our obligations to register the notes and the common stock issuable upon conversion of the notes or the registration statement

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| | does not become effective within the specified time periods. See Description of Notes Registration Rights. |
| Guarantees | None. |
| Sinking fund | None. |
| DTC eligibility | The notes were issued in fully registered book-entry form and are represented by one or more permanent global notes without coupons. Global notes were deposited with a custodian for and registered in the name of a nominee of The Depository Trust Company ( DTC ) in New York, New York. Beneficial interests in global notes will be shown on, and transfers thereof will be effected only through, records maintained by DTC and its direct and indirect participants, and your interest in any global note may not be exchanged for certificated notes, except in the limited circumstances described herein. See Description of Notes Global Notes; Book Entry; Form. |
| Trading | Since their initial issuance, the notes have been eligible for trading in the PORTAL Market of the National Association of Securities Dealers, Inc. However, notes sold by means of this prospectus will no longer be eligible for trading on the PORTAL Market. We do not intend to list the notes on any other automated quotation system or any securities exchange. Furthermore, we can provide no assurances as to the liquidity of, or trading market for, the notes. |
| NASDAQ symbol for our common stock | Our common stock is listed on the NASDAQ National Market under the symbol THOR. |
| Risk factors | See Risk Factors beginning on page 6 of this prospectus and other information included in, or incorporated by reference into, this prospectus for a discussion of factors you should consider carefully before deciding to invest in the notes. |

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## RISK FACTORS

*Our business faces many risks. The risks described below are what we believe to be the material risks facing our company and holders of the notes. However, the risks described below may not be the only risks we face. Additional risks that we do not yet know of or that we currently believe are immaterial may also impair our business operations. If any of the events or circumstances described in the following risk factors actually occurs, our business, financial condition or results of operations could suffer, and the trading price of our common stock or the notes offered hereby could decline significantly. You should consider the following risks, as well as the other information included in and incorporated by reference into this prospectus before deciding to invest in the notes.*

### Risks Related to Our Business

***We have a history of net losses.***

We were founded in 1976 and we have a history of incurring losses from operations. We anticipate that our expenses will increase as a result of increased pre-clinical and clinical testing, research and development and selling, general and administrative expenses. We could also incur significant additional costs in connection with our business development activities and the development and marketing of new products and indicated uses for our existing products as well as litigation and equity based compensation costs. Such costs could prevent us from achieving or maintaining profitability in future periods.

***Since our physician and hospital customers depend on third party reimbursement, if third party payors fail to provide appropriate levels of reimbursement for our products, our results of operations will be harmed.***

Significant uncertainty exists as to the reimbursement status of newly approved health care products such as VADs and vascular grafts, which uncertainty can delay or prevent adoption in volume by hospitals. Government and other third party payors are increasingly attempting to contain health care costs. Payors are attempting to contain costs by, for example, limiting coverage and the level of reimbursement of new therapeutic products. Payors are also attempting to contain costs by refusing, in some cases, to provide any coverage for uses of approved products for disease indications other than those for which the FDA has granted marketing approval.

To date, a majority of private insurers with whom we have been involved and the Centers for Medicare & Medicaid Services, or the CMS, have determined to reimburse some portion of the cost of our VADs and our diagnostic and vascular graft products, but we cannot estimate what portion of such costs will be reimbursed and our products may not continue to be approved for reimbursement. In addition, changes in the health care system may affect the reimbursability of future products. If coverage is not expanded or if the reimbursement levels are not increased or are partially or completely reduced, our revenues would be reduced.

***If we fail to obtain approval from the FDA and from foreign regulatory authorities, we cannot market and sell our products under development in the United States and in other countries, and if we fail to adhere to ongoing FDA Quality System Regulations, the FDA may withdraw our market clearance or take other action.***

Before we can market new products in the United States, we must obtain clearance from the FDA. This process is lengthy and uncertain. In the United States, one must obtain clearance from the FDA of a 510(k) premarket notification or approval of a more extensive submission known as a pre-market approval, or PMA, application. If the FDA concludes that any of our products does not meet the requirements to obtain clearance under Section 510(k) of the Federal Food, Drug, and Cosmetic Act, then we would be required to file a PMA application. The process for a PMA application is lengthy, expensive and typically requires extensive pre-clinical and clinical trial data.

We may not obtain clearance of a 510(k) notification or approval of a PMA application with respect to any of our products on a timely basis, if at all. If we fail to obtain timely clearance or approval for our products, we will not be able to market and sell our products, harming our ability to generate sales. The FDA may also limit the claims that we can make about our products. We may also be required to obtain clearance of a 510(k) notification or PMA Supplement from the FDA before we can market products that have been cleared, but we have since modified or that

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we subsequently wish to market for new disease indications.

The FDA also requires us to adhere to Quality System Regulations, which include production design controls, testing, quality control, storage and documentation procedures. The FDA may at any time inspect our facilities to determine whether we have adequate compliance. Compliance with Quality System Regulations for medical devices is difficult and costly. In addition, we may not be found to be compliant as a result of future changes in, or interpretations of, regulations by the FDA or other regulatory agencies. If we do not achieve compliance, the FDA may withdraw marketing clearance, require product recall or take other enforcement action, which in each case would harm our business. Any change or modification to a device is required to be made in compliance with Quality System Regulations, which compliance may cause interruptions or delays in the marketing and sale of our products. The FDA also requires device manufacturers to submit reports regarding deaths, serious injuries and certain malfunctions relating to use of their products.

Sales of our products outside the United States are subject to foreign regulatory requirements that vary from country to country. The time required to obtain approvals from foreign countries may be longer or shorter than that required for FDA approval, and requirements for foreign licensing may differ from FDA requirements.

The federal, state and foreign laws and regulations regarding the manufacture and sale of our products are subject to future changes, as are administrative interpretations and policies of regulatory agencies. If we fail to comply with applicable federal, state or foreign laws or regulations, we could be subject to enforcement actions. Enforcement actions could include product seizures, recalls, withdrawal of clearances or approvals, and civil and criminal penalties, which in each case would harm our business.

***Certain lawsuits have been filed against us.***

Commencing on or about August 3, 2004, several Federal securities law putative class action suits were filed in the United States District Court for the Northern District of California on behalf of purchasers of the publicly traded securities of the Company between April 28, 2004 and June 29, 2004. These suits were consolidated in a consolidated complaint filed on or about January 18, 2005. The complaint seeks to recover unspecified damages on behalf of all purchasers of our publicly traded securities during the class period.

On or about September 1, 2004, a shareholder derivative action entitled *Wong v. Grossman* was filed in the California Superior Court for Alameda County based upon essentially the same facts as the Federal securities suit. This action names the individual members of our Board of Directors, our Chief Executive Officer and our former Chief Financial Officer as defendants.

In June of 2004, MicroMed Technology, Inc., a potential competitor of ours, sued us in Texas. MicroMed sought injunctive relief against us in connection with our HeartMate II Phase I clinical trial on the grounds that we had provided the HeartMate II VAD to clinical sites without charge and that doing so was a violation of Texas anti-trust law. In addition to injunctive relief, the plaintiff is seeking unspecified damages and fees, including those arising from potential sales of its VAD products which plaintiff alleges it lost due to our HeartMate II clinical trial. We have successfully defended ourselves against MicroMed s requests for injunctive relief and will continue to vigorously defend any and all of the claims made by MicroMed in this action.

We believe that the claims asserted in the MicroMed action, and both the Federal securities law putative class action and the state shareholder derivative action are without merit. We have filed a motion to dismiss in the Federal securities law putative class action and the shareholder suit currently is stayed through to at least early July 2005.

We are unable to predict at this time the final outcome of these actions.

We carry sufficient insurance to cover what management believes to be any reasonable exposure on these actions; however, we cannot give assurance that our insurance will cover all costs or other exposures we may incur with respect to these actions.

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***If hospitals do not conduct Destination Therapy procedures using our VAD, our product sales will be diminished.***

The use of our VADs as long-term therapy in patients who are not candidates for heart transplantation (i.e. they are Destination Therapy patients) was approved by the FDA in 2002, and was approved for reimbursement by the CMS in late 2003.

The number of Destination Therapy procedures actually performed depends on many factors, most of which are out of our direct control, including:

- the number of CMS sites approved for Destination Therapy;
- the clinical outcomes of Destination Therapy procedures;
- cardiologists and referring physicians education, and their commitment to Destination Therapy;
- the economics of the Destination Therapy procedure for individual hospitals, which includes the costs of the VAD and related pre- and post- operative procedures and their reimbursement;
- the impact of changes in reimbursement rates on the timing of purchases of VADs for Destination Therapy; and
- the economics for individual hospitals of not conducting a Destination Therapy procedure, including the costs and related reimbursements of long-term hospitalization.

The different outcomes of these and other factors, and their timing, will have a significant impact on our future operating results. Sales of our VADs for Destination Therapy have proved slower than we had originally anticipated, and we are unable to predict when, if ever, these sales will generate significant revenue for us.

***The long and variable sales and deployment cycles for our VAD systems may cause our product sales and operating results to vary significantly, which increases the risk of an operating loss for any given fiscal period.***

Our VAD systems have lengthy sales cycles and we may incur substantial sales and marketing expenses and expend significant effort without making a sale. Even after making the decision to purchase our VAD systems, our customers often deploy our products slowly. For example, the length of time between initial contact with cardiac surgeons and the purchase of our VAD systems is generally between nine and eighteen months. In addition, the cardiac centers that buy the majority of our products are usually led by cardiac surgeons who are heavily recruited by competing centers or by centers looking to increase their profiles. When one of these surgeons moves between centers we sometimes experience a temporary but significant reduction in purchases by the departed center while it replaces its lead surgeon. As a result, it is difficult for us to predict the quarter in which customers may purchase our VAD systems and our product sales and operating results may vary significantly from quarter to quarter, which increases the risk of an operating loss for us for any given quarter. In particular, sales of our VADs for Destination Therapy have been lower than we had originally anticipated, and we cannot predict when, if ever, sales of our VADs for this indication will generate the level of revenues we expect.

***Physicians may not accept or continue to accept our current products and products under development.***

The success of our current and future products will require acceptance or continued acceptance by cardiovascular and vascular surgeons, and other medical professionals. Such acceptance will depend on clinical results and the conclusion by these professionals that our products are safe, cost-effective and acceptable methods of treatment. Even if the safety and efficacy of our future products are established, physicians may elect not to use them

for a number of reasons. These reasons could include the high cost of our VAD systems, restrictions on coverage, unfavorable reimbursement from health care payors, or use of alternative therapies. Also, economic, psychological, ethical and other concerns may limit general acceptance of our ventricular assist, graft and other products.

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***Our future product sales will be affected by the number of heart transplants conducted.***

A significant amount of our current product sales is generated by our VADs implanted temporarily in patients awaiting heart transplants. The number of heart transplants conducted worldwide depends on the number of hearts available to transplant, which number in turn depends on the death rate of otherwise healthy people from events such as automobile accidents.

***We have experienced rapid growth and changes in our business, and our failure to manage this and any future growth could harm our business.***

The number of our employees has substantially increased from our inception. We expect to continue increasing the number of our employees, and our business may suffer if we do not manage and train our new employees effectively. Our product sales may not continue to grow at a rate sufficient to support the costs associated with an increasing number of employees. Any future periods of rapid growth may place significant strains on our managerial, financial and other resources. The rate of any future expansion, in combination with our complex technologies and products, may demand an unusually high level of managerial effectiveness in anticipating, planning, coordinating and meeting our operational needs as well as the needs of our customers.

***If we fail to successfully introduce new products, our future growth may suffer.***

As part of our growth strategy, we intend to develop and introduce a number of new products and product improvements. We also intend to develop new indications for our existing products. For example, we are currently developing updated versions of our HeartMate products. If we fail to commercialize these new products, product improvements and new indications on a timely basis, or if they are not well accepted by the market, our future growth may suffer.

***Amortization of our intangible assets, which represent a significant portion of our total assets, will adversely affect our net income and we may never realize the full value of our intangible assets.***

A substantial portion of our assets are comprised of goodwill and purchased intangibles. We may not receive the recorded value for our intangible assets if we sell or liquidate our business or assets. The material concentration of intangible assets increases the risk of a large charge to earnings if the revenue from, and recoverability of, these intangible assets is impaired. We completed an assessment of the current values of our intangible assets at the year ended 2004 and determined that no impairment exists, however the lives have been modified on several components of these identified assets. In the event, however, of such a charge to net income, the market price of our common stock could be adversely affected. For example, in the first quarter of 2004, we completed an assessment of the final results from the feasibility clinical trial for the Aria CABG graft, which was ongoing through fiscal 2003. Based on the clinical trial results, we determined not to devote additional resources to development of the Aria graft. Upon the decision to discontinue product development, we recorded an impairment charge of approximately $9 million as of January 3, 2004 to write off purchased intangible assets related to the Aria graft, recorded as a result of our merger with TCA

***We rely on specialized suppliers for certain components and materials in our products and alternative suppliers may not be available.***

We depend on a number of custom-designed components and materials supplied by other companies including, in some cases, single source suppliers for components, instruments and materials used in our VAD products and blood testing products. For example, single sources currently manufacture and supply our ProTime and Hemoglobin instruments and the heart valves used in our HeartMate products. The suppliers of our ProTime and Hemoglobin

products are located in China and Germany, respectively. We do not have long-term written agreements with most of our vendors and from these vendors receive components on a purchase order basis

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only. If we need alternative sources for key raw materials or component parts for any reason, such alternative sources may not be available and our inventory may not be sufficient to fill orders before we find alternative suppliers or begin manufacturing these components or materials ourselves. Cessation or interruption of sales of circulatory support products or our point-of-care products would seriously harm our business, financial condition and results of operations.

Alternative suppliers, if available, may not agree to supply us. In addition, we may require FDA approval before using new suppliers or manufacturing our own components or materials. Existing suppliers could also become subject to an FDA enforcement action, which could also disrupt our supplies. If alternative suppliers are not available, we may not have the expertise or resources necessary to produce these materials or component parts internally.

Because of the long product development cycle in our business, suppliers may discontinue components upon which we rely before the end of life of our products. In addition, the timing of the discontinuation may not allow us time to develop and obtain FDA approval for a replacement component before we exhaust our inventory of the legacy component.

If suppliers discontinue components on which we rely, we may have to:

pay premium prices to our suppliers to keep their production lines open or to obtain alternative suppliers;

buy substantial inventory to last through the scheduled end of life of our product, or through such time that we will have a replacement product developed and approved by the FDA; or

stop shipping the product in which the legacy component is used once our inventory of the discontinued component is exhausted.

Any of these interruptions in the supply of our materials could result in substantial reductions in product sales and increases in our production costs.

***If we fail to compete successfully against our existing or potential competitors, our product sales or operating results may be harmed.***

Competition from medical device companies and medical device subsidiaries of health care and pharmaceutical companies is intense and is expected to increase. Principal competitors for the VAD system include WorldHeart Corporation, MicroMed Technology, Inc., Abiomed, Inc. and Berlin Heart in Europe. Principal competitors in the vascular graft market include W.L. Gore, Inc., C.R. Bard Corporation, which is also a distributor of our *Vectra* product line, and Boston Scientific Corporation. Principal competitors in the hospital coagulation and blood gas monitoring equipment market include the Cardiac Surgery Division of Medtronic, Inc., iSTAT, Radiometer, Abbott Diagnostics, and Instrument Laboratories. Our primary competitor in the skin incision device market is Becton, Dickson and Company. Competitors in the alternate site (non-hospital) point-of-care diagnostics market include Roche Diagnostics and HemoSense.

Many of our competitors have substantially greater financial, technical, distribution, marketing and manufacturing resources than we have. Accordingly, our competitors may be able to develop, manufacture and market products more efficiently and at a lower cost than we can. We expect that the key competitive factors will include the relative speed with which we can:

develop products;

complete clinical testing;

receive regulatory approvals; and

manufacture and sell commercial quantities of products.

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Large medical device companies dominate the markets in which our ITC business competes. We expect that any growth in this market will come from expanding our market share at the expense of other companies, and from testing being shifted away from central laboratories to the point-of-care. However, this market segment is very competitive, and includes the following potential drivers:

New drug therapies under development may not require the intense monitoring of a patient s coagulation that the current anti-coagulation drug of choice (Heparin) requires.

New competitors might enter the market with broader test menus.

Any of the devices of our competitors in clinical trials and in development could prove to be clinically superior, easier to implant, and/or less expensive than current commercialized devices, thereby impacting Thoratec s marketshare.

***We may encounter problems manufacturing our products.***

We may encounter difficulties manufacturing our products. We do not have experience in manufacturing some of our products in the commercial quantities that might be required if we receive FDA approval of several or all of the products and indications currently under development including the HeartMate II VAD. If we have difficulty manufacturing any of our products, our business will be harmed.

***Since we depend upon distributors, if we lose a distributor or a distributor fails to perform, our operations may be harmed.***

With the exception of Canada and the larger countries in Europe, we sell our Thoratec VAD and HeartMate systems in foreign markets through distributors. In addition, we sell our vascular access graft products through the Bard Peripheral Vascular division of C.R. Bard Corporation (which is also a competitor of ours) in the United States, and selected countries in Europe, the Middle East and Northern Africa and through Goodman Co. Ltd. in Japan. Substantially all of the international operations and a large portion of the Alternate Site domestic operations of ITC are conducted through distributors. For the year ended January 1, 2005, 21% of ITC s total product sales were through Cardinal Healthcare, a distributor of our blood coagulation testing equipment and skin incision devices.

To the extent we rely on distributors, our success will depend upon the efforts of others, over which we may have little or no control. If we lose a distributor or a distributor fails to perform to our expectations, our product sales may be harmed.

***Changes we make to our method of distributing and selling our products could hurt our relationship with distributors and their customers.***

In March 2004, we began changing our manner of distributing our Hemochron product line to our hospital point-of-care customers in the United States from a distributor model to a direct sales model.

This transition to a direct sales model necessitated expanding the sales, technical service, customer service and shipping headcount at ITC in order to provide our customers with the support and service that they historically obtained from our distributors, resulting in an increase in our sales and general and administrative costs. This transition process concluded in the first quarter of 2005, which resulted in the United States hospital point-of-care market now being served directly and exclusively by ITC. This transition and its execution involve significant risks, including:

the promotion by our former distributors of products from competitors rather than our products;

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the potential loss of customers who prefer to deal with a particular distributor; and

the challenges and costs associated with building an effective direct sales force.

If we fail to build an effective direct sales force for our hospital point-of-care product lines, our revenues may fail to increase as expected or could decrease, which could adversely affect our results of operations and financial condition.

***Our inability to protect our proprietary technologies or an infringement of others patents could harm our competitive position.***

We rely on patents, trade secrets, copyrights, know-how, trademarks, license agreements and contractual provisions to establish our intellectual property rights and protect our products. These legal means, however, afford only limited protection and may not adequately protect our rights. In addition, we cannot assure you that any of our pending patent applications will issue. The Patent and Trademark Office, or PTO, may deny or significantly narrow claims made under patent applications and the issued patents, if any, may not provide us with commercial protection. We could incur substantial costs in proceedings before the PTO or in any future litigation to enforce our patents in court. These proceedings could result in adverse decisions as to the validity and/or enforceability of our patents. In addition, the laws of some of the countries in which our products are or may be sold may not protect our products and intellectual property to the same extent as U.S. laws, if at all. We may be unable to protect our rights in trade secrets and unpatented proprietary technology in these countries.

Our commercially available VAD products, which account for a majority of our sales, generally are not protected by any patents. We rely principally on trade secret protection and, to a lesser extent, patents to protect our rights to our HeartMate product line. We rely principally on patents to protect our coagulation testing equipment, skin incision devices, Hemochron disposable cuvettes, IRMA analyzer, IRMA disposable cartridges, and Hgb Pro disposable test strips.

We seek to protect our trade secrets and unpatented proprietary technology, in part, with confidentiality agreements with our employees and consultants. Although it is our policy to require that all employees and consultants sign such agreements, we cannot assure you that every person who gains or has gained access to such information has done so. Moreover, these agreements may be breached and we may not have an adequate remedy.

Our products may be found to infringe prior or future patents owned by others. We may need to acquire licenses under patents belonging to others for technology potentially useful or necessary, and such licenses may not be available to us. We could incur substantial costs in defending suits brought against us on such patents or in bringing suits to protect our patents or patents licensed by us against infringement.

For example, in 2003, a patent infringement claim was filed against us by Bodycote Materials Testing Canada, Inc. and David C. MacGregor, M.D. related to materials used in the HeartMate LVAS. On February 3, 2004, we settled the claim and recorded a charge of $2.3 million in the fourth quarter of 2003 for the settlement and related legal costs.

***Product liability claims could damage our reputation and hurt our financial results.***

Our business exposes us to an inherent risk of potential product liability claims related to the manufacturing, marketing and sale of human medical devices. We maintain a limited amount of product liability insurance. Our insurance policies generally must be renewed on an annual basis. We may not be able to maintain or increase such insurance on acceptable terms or at reasonable costs, and such insurance may not provide us with adequate coverage against potential liabilities. A successful claim brought against us in excess, or outside, of our insurance coverage

could seriously harm our financial condition and results of operations. Claims against us, regardless of their merit or potential outcome, may also reduce our ability to obtain physician acceptance of our products or expand our business.

***Identified quality problems can result in substantial costs and write-downs.***

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FDA regulations require us to track materials used in the manufacture of our products, so that any problems identified in a finished product can easily be traced back to other finished products containing the defective materials. In some instances, identified quality issues require scrapping or expensive rework of the affected lot(s), not just the tested defective product, and could also require us to stop shipments.

In addition, since some of our products are used in situations where a malfunction can be life threatening, identified quality issues can result in the recall and replacement, generally free of charge, of substantial amounts of product already implanted or otherwise in the marketplace.

Any quality issue identified can therefore result in substantial costs and write-offs, which could materially harm our financial results.

***If we make acquisitions or divestitures, we could encounter difficulties that harm our business.***

We may acquire companies, products or technologies that we believe to be complementary to our business. If we do so, we may have difficulty integrating the acquired personnel, operations, products or technologies and we may not realize the expected benefits of any such acquisition. In addition, acquisitions may dilute our earnings per share, disrupt our ongoing business, distract our management and employees and increase our expenses, which could harm our business. We may also sell businesses or assets as part of our strategy or if we receive offers from third parties. If we do so, we may sell an asset or business for less than its full value.

***Our non-U.S. sales present special risks.***

During fiscal 2004 and 2003, sales originating outside the United States and U.S. export sales accounted for approximately 21% and 18%, respectively, of our total product sales. We anticipate that sales outside the United States and U.S. export sales will continue to account for a significant percentage of our product sales and we intend to continue to expand our presence in international markets. Non-U.S. sales are subject to a number of special risks. For example:

- we generally sell many of our products at a lower price outside the United States;
- sales agreements may be difficult to enforce;
- receivables may be difficult to collect through a foreign country s legal system;
- foreign customers may have longer payment cycles;
- foreign countries may impose additional withholding taxes or otherwise tax our foreign income, impose tariffs or adopt other restrictions on foreign trade;
- U.S. export licenses may be difficult to obtain;
- intellectual property rights may be more difficult to enforce in foreign countries;
- terrorist activity or war may interrupt distribution channels or adversely impact our customers or employees; and
- fluctuations in exchange rates may affect product demand and adversely affect the profitability, in U.S. dollars, of products sold in foreign markets where payments are made in local currencies.

Any of these events could harm our operations or operating results.

***Any claims relating to improper handling, storage or disposal of hazardous chemicals and biomaterials could be time consuming and costly.***

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Producing our products requires the use of hazardous materials, including chemicals and biomaterials. We cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials.

We could be subject to both criminal liability and civil damages in the event of an improper or unauthorized release of, or exposure of individuals to, hazardous materials. In addition, claimants may sue us for injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our total assets. Compliance with environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development or production efforts or harm our operating results.

***The occurrence of a catastrophic disaster or other similar events could cause damage to our facilities and equipment, which would require us to cease or curtail operations.***

We are vulnerable to damage from various types of disasters, including earthquake, fire, terrorist acts, flood, power loss, communications failures and similar events. For example, in October 1989, a major earthquake that caused significant property damage and a number of fatalities struck near the area in which our Pleasanton, California facility is located. If any such disaster were to occur, we may not be able to operate our business at our facilities, in particular because our premises require FDA approval, which could result in significant delays before we can manufacture product from a replacement facility. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Therefore, any such catastrophe could seriously harm our business and results of operations.

***If we are unable to favorably assess the effectiveness of our internal control over financial reporting, or if our independent auditors are unable to provide an unqualified attestation report on our assessment, our stock price could be adversely affected.***

Under the Sarbanes-Oxley Act of 2002, or the Act, beginning in 2004 we are now required to annually assess the effectiveness of our internal controls for financial reporting and assert that such internal controls are effective. Our independent auditors must evaluate management s assessment of the effectiveness of our internal controls over financial reporting and render an opinion on management s assessment and the effectiveness of our internal controls over financial reporting. The Act has resulted in and is likely to continue to result in increased expenses, and has required and is likely to continue to require significant efforts by management and other employees. Although we believe that our efforts will enable us to remain compliant under the Act, we can give no assurance that in the future such efforts will be successful. Our business is complex and involves significant judgments and estimates as described in our Critical Accounting Estimates. If we have material weaknesses in internal controls, we will not be able to assert that our internal controls over financial reporting are effective, which could adversely effect investor confidence in us and the market price of our common stock.

***Fluctuations in foreign currency exchange rates could result in declines in our reported sales and earnings.***

Because some of our international sales are denominated in local currencies and not in U.S. dollars, our reported sales and earnings are subject to fluctuations in foreign exchange rates. At present, we use forward foreign currency contracts to hedge the gains and losses created by the remeasurement of non-functional currency denominated assets and liabilities. However, we do not engage in hedge exposures that will arise from future sales. As a result, sales occurring in the future that are denominated in foreign currencies may be translated into U.S. dollars at a less favorable rate than our current exchange rate environment resulting in reduced revenues and earnings.

***The competition for qualified personnel is particularly intense in our industry. If we are unable to retain or hire key personnel, we may not be able to sustain or grow our business.***

Our ability to operate successfully and manage our potential future growth depends significantly upon retaining key research, technical, sales, marketing, managerial and financial personnel, and attracting and retaining additional highly qualified personnel in these areas. We face intense competition for such personnel, and we may not be able to attract and retain these individuals. We compete for talent with numerous companies, as well as

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universities and nonprofit research organizations, throughout all our locations. The loss of key personnel for any reason or our inability to hire and retain additional qualified personnel in the future could prevent us from sustaining or growing our business. Our success will depend in large part on the continued services of our research, managerial and manufacturing personnel. We cannot assure you that we will continue to be able to attract and retain sufficient qualified personnel.

**Risks Related to the Notes and Our Common Stock**

***Our debt obligations expose us to risks that could adversely affect our business, operating results and financial condition, and prevent us from fulfilling our obligations under the notes.***

We have a substantial level of debt. As of January 1, 2005, we had $143.8 million of outstanding indebtedness. The level of our indebtedness, among other things, could:

make it difficult for us to make payments on our debt as described below;

make it difficult for us to obtain any necessary financing in the future for working capital, capital expenditures, debt service, acquisitions or general corporate purposes;

limit our flexibility in planning for or reacting to changes in our business;

reduce funds available for use in our operations;

impair our ability to incur additional debt because of financial and other restrictive covenants proposed for any such additional debt;

make us more vulnerable in the event of a downturn in our business or an increase in interest rates; or

place us at a possible competitive disadvantage relative to less leveraged competitors and competitors that have better access to capital resources.

If we experience a decline in product sales due to any of the factors described in this Risk Factors section or otherwise, we could have difficulty paying interest or principal amounts due on our indebtedness. If we are unable to generate sufficient cash flow or otherwise obtain funds necessary to make required payments, or if we fail to comply with the various requirements of our indebtedness, including the notes, we would be in default, which would permit the holders of our indebtedness to accelerate the maturity of the indebtedness and could cause defaults under our other indebtedness. Any default under our indebtedness could have a material adverse effect on our business, operating results and financial condition.

***The notes are unsecured and rank pari passu with our other senior subordinated debt; the notes are subordinated to our senior debt and structurally subordinated to all liabilities of our subsidiaries.***

The notes are unsecured (except to the limited extent described under Description of Notes Security ) and subordinated in right of payment in full to all of our senior indebtedness (including secured indebtedness). As a result, in the event of any liquidation, dissolution, bankruptcy or upon acceleration of the notes due to an event of default under the indenture governing the notes and in certain other events, our assets will be available to pay obligations on the notes only after all such senior indebtedness has been paid in full. As of January 1, 2005, excluding trade payables, we had $143.8 million of indebtedness outstanding.

None of our subsidiaries has guaranteed our obligations under, or has any obligation to pay any amounts due on, the notes. As a result, the notes are effectively subordinated to all liabilities of our subsidiaries. Our rights and the rights of our creditors, including holders of the notes, to participate in the assets of any of our subsidiaries upon their liquidation or recapitalization will generally be subject to the prior claims of those subsidiaries creditors. The ability of our subsidiaries to pay dividends and make other payments to us may be restricted by, among other things, applicable corpora

Auto-Callable Contingent Coupon Barrier Notes
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Royal Bank of Canada

INFORMATION REGARDING THE REFERENCE STOCK ISSUERS

The Reference Stocks are registered under the Securities Exchange Act of 1934 (the "Exchange Act"). Companies with securities registered under that Act are required to file periodically certain financial and other information specified by the SEC. Information provided to or filed with the SEC can be inspected and copied at the public reference facilities maintained by the SEC or through the SEC's website at www.sec.gov. In addition, information regarding the Reference Stocks may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents.

The following information regarding the issuers of the Reference Stocks is derived from publicly available information.

We have not independently verified the accuracy or completeness of reports filed by the issuers of the Reference Stocks with the SEC, information published by it on its website or in any other format, information about it obtained from any other source or the information provided below.

We obtained the information regarding the historical performance of the Reference Stocks set forth below from Bloomberg Financial Markets.

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of the Reference Stocks should not be taken as an indication of their future performance, and no assurance can be given as to the market prices of any Reference Stock at any time during the term of the Notes. We cannot give you assurance that the performance of any Reference Stock will not result in the loss of all or part of your investment.

Costco Wholesale Corporation ("COST")

Costco Wholesale Corporation operates wholesale membership warehouses in multiple countries. The company sells all kinds of food, automotive supplies, toys, hardware, sporting goods, jewelry, electronics, apparel, health, and beauty aids, as well as other goods.

The company's common stock is listed on the Nasdaq Global Select Market ("NASDAQ") under the ticker symbol "COST."

Nike, Inc. ("NKE")

NIKE, Inc. designs, develops, and markets athletic footwear, apparel, equipment, and accessory products for men, women, and children. The company sells its products worldwide to retail stores, through its own stores, subsidiaries, and distributors.

The company's common stock is listed on the New York Stock Exchange ("NYSE") under the ticker symbol "NKE."

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HISTORICAL INFORMATION

The graphs below set forth the information relating to the historical performance of the Reference Stocks. In addition, below the graphs are tables setting forth the intra-day high, intra-day low and period-end closing prices of the Reference Stocks. The information provided in these tables is for the four calendar quarters of 2013, 2014, 2015 and 2016, the first two calendar quarters of 2017 and the period from July 1, 2017 through July 21, 2017.

We obtained the information regarding the historical performance of the Reference Stocks in the graphs and tables below from Bloomberg Financial Markets.

We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets. The historical performance of any Reference Stock should not be taken as an indication of its future performance, and no assurance can be given as to the prices of the Reference Stocks at any time. We cannot give you assurance that the performance of the Reference Stocks will not result in the loss of all or part of your investment.

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Historical Information for Costco Wholesale Corporation ("COST")
Below is a table setting forth the intra-day high, intra-day low and period-end closing prices of this Reference Stock. The information provided in the table is for the period from January 1, 2013 through July 21, 2017.

| Period-Start Date | Period-End Date | High Intra-Day Price of this Reference Stock ($) | Low Intra-Day Price of this Reference Stock ($) | Period-End Closing Price of this Reference Stock ($) |
|---|---|---|---|---|
| 1/1/2013 | 3/31/2013 | 107.03 | 98.96 | 106.11 |
| 4/1/2013 | 6/30/2013 | 115.75 | 103.20 | 110.57 |
| 7/1/2013 | 9/30/2013 | 120.20 | 110.06 | 115.12 |
| 10/1/2013 | 12/31/2013 | 126.11 | 110.16 | 119.01 |
| 1/1/2014 | 3/31/2014 | 119.30 | 109.50 | 111.68 |
| 4/1/2014 | 6/30/2014 | 118.85 | 110.36 | 115.16 |
| 7/1/2014 | 9/30/2014 | 127.78 | 114.90 | 125.32 |
| 10/1/2014 | 12/31/2014 | 146.80 | 122.08 | 141.75 |
| 1/1/2015 | 3/31/2015 | 156.85 | 138.22 | 151.50 |
| 4/1/2015 | 6/30/2015 | 152.95 | 134.74 | 135.06 |
| 7/1/2015 | 9/30/2015 | 147.59 | 117.04 | 144.57 |
| 10/1/2015 | 12/31/2015 | 169.70 | 142.19 | 161.50 |
| 1/1/2016 | 3/31/2016 | 161.22 | 141.63 | 157.58 |
| 4/1/2016 | 6/30/2016 | 159.07 | 138.60 | 157.04 |
| 7/1/2016 | 9/30/2016 | 169.56 | 147.20 | 152.51 |
| 10/1/2016 | 12/31/2016 | 164.94 | 142.12 | 160.11 |
| 1//1/2017 | 3/31/2017 | 178.66 | 158.51 | 167.69 |
| 4/1/2017 | 6/30/2017 | 183.17 | 156.56 | 159.93 |
| 7/1/2017 | 7/21/2017 | 161.33 | 150.00 | 150.44 |

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.
The graph below illustrates the performance of this Reference Stock from January 1, 2013 to July 21, 2017, reflecting its Initial Stock Price of $150.44. The red line represents its Coupon Barrier and Trigger Price of $112.83, which is equal to 75.00% of its Initial Stock Price.

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Historical Information for Nike, Inc. (“NKE”)
Below is a table setting forth the intra-day high, intra-day low and period-end closing prices of this Reference Stock. The information provided in the table is for the period from January 1, 2013 through July 21, 2017.

| Period-Start Date | Period-End Date | High Intra-Day Price of this Reference Stock ($) | Low Intra-Day Price of this Reference Stock ($) | Period-End Closing Price of this Reference Stock ($) |
|---|---|---|---|---|
| 1/1/2013 | 3/31/2013 | 30.12 | 25.70 | 29.51 |
| 4/1/2013 | 6/30/2013 | 33.03 | 28.99 | 31.84 |
| 7/1/2013 | 9/30/2013 | 37.61 | 30.97 | 36.32 |
| 10/1/2013 | 12/31/2013 | 40.13 | 34.98 | 39.32 |
| 1/1/2014 | 3/31/2014 | 40.04 | 34.93 | 36.93 |
| 4/1/2014 | 6/30/2014 | 39.56 | 35.30 | 38.78 |
| 7/1/2014 | 9/30/2014 | 45.14 | 37.97 | 44.60 |
| 10/1/2014 | 12/31/2014 | 49.88 | 42.05 | 48.08 |
| 1/1/2015 | 3/31/2015 | 51.90 | 45.35 | 50.17 |
| 4/1/2015 | 6/30/2015 | 55.17 | 49.08 | 54.01 |
| 7/1/2015 | 9/30/2015 | 62.97 | 47.25 | 61.49 |
| 10/1/2015 | 12/31/2015 | 68.05 | 60.22 | 62.50 |
| 1/1/2016 | 3/31/2016 | 65.44 | 53.64 | 61.47 |
| 4/1/2016 | 6/30/2016 | 61.84 | 51.48 | 55.20 |
| 7/1/2016 | 9/30/2016 | 60.32 | 52.12 | 52.65 |
| 10/1/2016 | 12/31/2016 | 53.32 | 49.04 | 50.83 |
| 1/1/2017 | 3/31/2017 | 58.99 | 51.63 | 55.73 |
| 4/1/2017 | 6/30/2017 | 59.71 | 50.79 | 59.00 |
| 7/1/2017 | 7/21/2017 | 60.00 | 57.00 | 59.95 |

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.
The graph below illustrates the performance of this Reference Stock from January 1, 2013 to July 21, 2017, reflecting its Initial Stock Price of $59.95. The red line represents its Coupon Barrier and Trigger Price of $44.96, which is equal to 75.00% of its Initial Stock Price, rounded to two decimal places.

Auto-Callable Contingent Coupon Barrier Notes
Linked to the Lesser Performing of Two
Equity Securities, Due July 25, 2019
Royal Bank of Canada

SUPPLEMENTAL DISCUSSION OF
U.S. FEDERAL INCOME TAX CONSEQUENCES

The following disclosure supplements, and to the extent inconsistent supersedes, the discussion in the product prospectus supplement dated January 8, 2016 under "Supplemental Discussion of U.S. Federal Income Tax Consequences."

Under Section 871(m) of the Code, a "dividend equivalent" payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments ("ELIs") that are "specified ELIs" may be treated as dividend equivalents if such specified ELIs reference an interest in an "underlying security," which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, U.S. Treasury Department regulations provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2018. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Reference Stocks or the Notes, and following such occurrence the Notes could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the Reference Stocks or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

Delivery of the Notes will be made against payment for the Notes on July 26, 2017, which is the third (3rd) business day following the Trade Date (this settlement cycle being referred to as "T+3"). See "Plan of Distribution" in the prospectus dated January 8, 2016. For additional information as to the relationship between us and RBCCM, please see the section "Plan of Distribution—Conflicts of Interest" in the prospectus dated January 8, 2016.

In the initial offering of the Notes, they were offered to investors at a purchase price equal to par, except with respect to certain accounts as indicated on the cover page of this document.

The value of the Notes shown on your account statement may be based on RBCCM's estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately three months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM's estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may initially be a higher amount, reflecting the addition of RBCCM's underwriting discount and our estimated costs and profits from hedging the Notes. This excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value.

We may use this pricing supplement in the initial sale of the Notes. In addition, RBCCM or another of our affiliates may use this pricing supplement in a market-making transaction in the Notes after their initial sale. Unless we or our agent informs the purchaser otherwise in the confirmation of sale, this pricing supplement is being used in a

market-making transaction.

Auto-Callable Contingent Coupon Barrier Notes
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STRUCTURING THE NOTES

The Notes are our debt securities, the return on which is linked to the performance of the Reference Stocks. As is the case for all of our debt securities, including our structured notes, the economic terms of the Notes reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these Notes at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. Using this relatively lower implied borrowing rate rather than the secondary market rate, is a factor that reduced the initial estimated value of the Notes at the time their terms were set. Unlike the estimated value included in this pricing supplement, any value of the Notes determined for purposes of a secondary market transaction may be based on a different funding rate, which may result in a lower value for the Notes than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the Notes, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of the Reference Stocks, and the tenor of the Notes. The economic terms of the Notes and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate is a factor that reduced the economic terms of the Notes to you. The initial offering price of the Notes also reflects the underwriting commission and our estimated hedging costs. These factors resulted in the initial estimated value for the Notes on the Trade Date being less than their public offering price. See “Selected Risk Considerations—The Initial Estimated Value of the Notes Is Less than the Price to the Public” above.

VALIDITY OF THE NOTES

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the Notes has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the Notes have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Notes will be validly issued and, to the extent validity of the Notes is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the Notes or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors’ rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee’s authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated January 8, 2016, which has been filed as Exhibit 5.1 to Royal Bank’s Form 6-K dated January 8, 2016.

In the opinion of Morrison & Foerster LLP, when the Notes have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Notes will be valid, binding and enforceable obligations of Royal Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors’ rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York.

This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated January 8, 2016, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated January 8, 2016.