THORATEC CORP
Form S-3/A
February 12, 2002

AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON FEBRUARY 11, 2002

REGISTRATION NO. 333-72128

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 4 TO

FORM S-3
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

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

CALIFORNIA	94-2340464
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

6035 STONERIDGE DRIVE, PLEASANTON, CALIFORNIA 94588 (925) 847-8600
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

D. KEITH GROSSMAN
PRESIDENT AND CHIEF EXECUTIVE OFFICER
6035 STONERIDGE DRIVE, PLEASANTON, CALIFORNIA 94588 (925) 847-8600
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: As soon as practicable following the effectiveness 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. [ ]

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, check the following box. [ ]

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

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 registration statement number of the earlier effective registration statement for the same offering: [ ]

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box: [ ]

WE HEREBY AMEND THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL WE 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 THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

THE INFORMATION IN THIS PRELIMINARY PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. WE MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PRELIMINARY PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES, AND WE ARE NOT SOLICITING OFFERS TO BUY THESE SECURITIES, IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED FEBRUARY 11, 2002

PROSPECTUS

7,000,000 SHARES

[LOGO]

COMMON STOCK

We are offering 1,055,000 shares of common stock. The selling shareholders are offering 5,945,000 shares, of which Thermo Electron Corporation is offering 5,825,000 shares. We will not receive any of the proceeds from the sale of shares being sold by the selling shareholders.

Our common stock is quoted on the Nasdaq National Market under the symbol "THOR." On February 8, 2002, the last reported sale price of our common stock on the Nasdaq National Market was $15.75 per share.

INVESTING IN THE SHARES INVOLVES RISKS. "RISK FACTORS" BEGIN ON PAGE 8.

	PER SHARE	TOTAL
Public offering price	$	$
Underwriting discounts	$	$
Proceeds to Thoratec	$	$
Proceeds to the selling shareholders	$	$

We and the selling shareholders have granted the underwriters a 30-day option to purchase up to 1,050,000 additional shares of common stock to cover any over-allotments.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY OTHER STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS ACCURATE OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Lehman Brothers expects to deliver the shares on or about , 2002.

LEHMAN BROTHERS
JPMORGAN
MERRILL LYNCH & CO.
BEAR, STEARNS & CO. INC.
ADAMS, HARKNESS & HILL, INC.
FIDELITY CAPITAL MARKETS

, 2002

TABLE OF CONTENTS

FORWARD LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference in this prospectus, includes forward-looking statements. We 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," "will," "may" and 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 approvals of our products in the United States and internationally;
- results and timing of our clinical trials, including the results of the REMATCH trial and publication of those results;
- the other competing therapies that may, in the future, be available to heart failure patients;
- our plans to develop and market new products;
- our ability to improve our financial performance; and
- effects of the merger and integration with Thermo Cardiosystems, Inc., which we refer to as Thermo Cardiosystems or TCA.

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 and elsewhere in this prospectus. We are not obligated to update or revise these forward-looking statements to reflect new events or circumstances.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

PROSPECTUS SUMMARY

This summary highlights selected information contained elsewhere in this prospectus. You should read the entire prospectus carefully, including the "Risk Factors" section and our consolidated financial statements and the related notes that are incorporated by reference into this prospectus. Unless otherwise indicated, the information in this prospectus assumes that the underwriters do not exercise their over-allotment option.

OUR COMPANY

OUR BUSINESS

We are a leading manufacturer of circulatory support products for use by patients with congestive heart failure, or CHF. According to the American Heart Association, 4.7 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 FDA approval to commercially market a ventricular assist device, or VAD, to treat patients with late-stage heart failure, which comprises approximately 5% of the CHF patient population. There is currently only one FDA-approved indication for ventricular assist devices for patients suffering from CHF -- as a bridge to heart transplant. This indication represents a worldwide market of up to 8,000 patients annually.

We develop and market products that are used by physicians and hospitals for cardiac assist, vascular and diagnostic applications. Our three types of products are:

- Circulatory support products. Our circulatory support products include ventricular assist devices for the short-term and long-term treatment of congestive heart failure. Our products address more indications than the products of any other cardiac-assist device company.

- Vascular graft products. We have developed small diameter grafts to address the vascular access and coronary bypass surgery markets. These grafts use our proprietary materials that are designed to improve performance. Our grafts are sold in the United States and internationally for use in hemodialysis patients and are currently in clinical trials for coronary artery bypass applications.

- Blood coagulation testing and skin incision devices. We have a leading market position for devices that monitor blood coagulation and perform blood screening analysis for patients undergoing various surgical procedures. We also offer a family of single-use skin incision devices used to create a blood sample.

OUR MARKETS

The primary markets for our VAD products are those patients suffering from heart failure, and in particular, from CHF. CHF is a chronic disease that occurs when degeneration of the heart muscle reduces the pumping power of the heart, causing the heart to become too weak to pump blood at a level sufficient to meet

the body's demands. CHF can be caused by artery or valve diseases or a general weakening of the heart muscle itself. In addition, other conditions, such as high blood pressure or diabetes, can also lead to CHF. We believe that the number of patients suffering from CHF who could benefit from some form of cardiac assist could be over 200,000 annually.

We estimate that our VADs have treated over 4,700 patients. Our devices are used primarily for patients awaiting a heart transplant or recovering from open heart surgery. However, we are pursuing approval to use our VADs in other indications, including as an alternative to maximum drug therapy for CHF patients who are not eligible for a heart transplant and for therapeutic recovery to partially reverse the complications of late-stage heart failure in certain patients.

OUR STRATEGY

We are a leading developer and manufacturer of medical devices for the CHF, cardiac surgery and vascular graft markets. Our key strategies to maintain and expand this leadership position are to:

- Obtain approval for new indications for our products;

- Increase penetration of existing markets;

- Leverage benefits of our merger with TCA;

- Offer a broad range of product solutions;

- Focus on and partner with leading heart centers; and

- Grow internationally.

THE MERGER WITH THERMO CARDIOSYSTEMS

On February 14, 2001, we completed our merger with Thermo Cardiosystems, a Massachusetts-based manufacturer of cardiac assist, blood coagulation testing and skin incision devices. As a result of the merger, we substantially increased the size of our company and became a leading provider of circulatory support products worldwide. We now sell VADs to virtually every leading heart transplant center worldwide and we market three out of the four VADs approved by the FDA as a bridge to heart transplant. At the time of the merger, we changed our name to Thoratec Corporation. As a consequence of the merger, the parent company of TCA, Thermo Electron Corporation, owned approximately 26% of our outstanding stock on September 29, 2001 and will own approximately 15% after this offering.

RECENT DEVELOPMENTS

On November 12, 2001 the results of a clinical trial called REMATCH, or Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart Failure, were presented at the American Heart Association Scientific Sessions and were published in a website edition of The New England Journal of Medicine. The REMATCH trial, which cost approximately $25 million according to one of the trial sponsors, was a collaboration among the National Institutes of Health, or NIH, as lead sponsor, Columbia University and our company. We were a partial sponsor of the REMATCH trial, providing approximately $3.6 million of financial support and all necessary VAD's and related equipment.

The REMATCH trial results, as published in the New England Journal of Medicine, involved 129 late-stage CHF patients who, because of their ages or

other diseases, were not eligible to receive one of the very limited supply of donor organs for heart transplantation. The study was independently coordinated by Columbia University at 21 prestigious transplant centers in the United States. Patient enrollment for the initial study protocol began in 1998 and concluded in June 2001. The overall purpose of the study was to evaluate the efficacy, safety and cost effectiveness of our HeartMate ventricular assist device versus optimal medical management, which we call "maximum drug therapy." The REMATCH publication provided a detailed evaluation of survivability, device safety and impact on patient quality of life.

Results from the REMATCH trial showed a significant survival benefit and improved quality of life for patients using the HeartMate compared to maximum drug therapy. The study showed the overall probability of one-year survival for those on the HeartMate was 52% versus 25% for patients treated with maximum drug therapy. The one year survival rates for patients younger than 60 years old was 74% for those patients on the HeartMate and 33% for those treated with maximum drug therapy. The one year survival rates for patients 60 to 69 years old was 47% for those patients on the HeartMate and 15% for those treated with maximum drug therapy. Two-year survival rates are estimated to be 23% for patients on the HeartMate and 8% for those treated with maximum drug therapy. The median length of survival was approximately 408 days for those on the HeartMate and 150 days for those treated with maximum drug therapy. The frequency of serious adverse events for patients in the HeartMate group was 2.35 times greater than for patients in the maximum drug therapy group, with a predominance of infection, bleeding

and malfunction of the device. Some of these adverse events experienced by patients on the HeartMate included an ischemic stroke in approximately 10% of the patients, half of which were major.

The overall quality of life, as measured by the patient's emotional state, whether or not they were depressed, and their mobility, was significantly higher at one year for patients on the HeartMate than for those treated with maximum drug therapy. At the time the results of the REMATCH trial were published there were 27 HeartMate patients still alive, versus 7 receiving maximum drug therapy.

Based on a review of these data, the FDA approved an IDE Supplement allowing up to 30 additional non-randomized patients to be implanted with the HeartMate as an alternative to maximum drug therapy. This IDE Supplement also permits patients who were being treated with maximum drug therapy in the original study to be implanted with the HeartMate.

On October 16, 2001, we submitted a PMA Supplement for the HeartMate as an alternative to maximum drug therapy for patients suffering from late-stage CHF. On November 29, 2001, we received notification from the FDA that it will expedite the review of our PMA Supplement. We have been notified that on March 4, 2002 the FDA Circulatory System Devices Advisory Panel will meet to review our PMA Supplement based on the REMATCH trial. We believe that the panel will issue a recommendation to the FDA on the day of its meeting. The panel could recommend approval, disapproval or approval with certain conditions and the FDA typically follows the panel's recommendations, although it is not legally obligated to do so. If approved by the FDA, the HeartMate will become the first ventricular assist device approved for use as an alternative treatment to maximum drug therapy for patients suffering from late-stage CHF. We have already initiated discussions with the Centers for Medicare and Medicaid Services (formerly HCFA) regarding reimbursement coverage for use of the HeartMate in this treatment.

We believe that this new application for our HeartMate device represents a

market opportunity of up to 100,000 additional patients annually in the United States alone, which would represent a significant increase over our existing customer base. For these patients, maximum drug therapy is currently the only treatment available and, even with drug therapy, the 12-month mortality rate for these patients is 75%. We believe that the HeartMate will provide a significant survival benefit for this patient population.

OTHER RECENT DEVELOPMENTS

On January 23, 2002, we announced a plan to redeem all outstanding 4 3/4% convertible subordinated debentures due 2004 originally issued by Thermo Cardiosystems. As of the date of this prospectus the outstanding principal amount of the debentures is $54.8 million. We anticipate that the redemption will be completed by the end of April, 2002.

On January 29, 2002, we announced for the fourth quarter ended December 29, 2001, product sales of $35.0 million compared with $21.5 million in the fourth quarter a year ago. Net income for the fourth quarter of 2001 was $0.4 million, or $0.01 per share, compared to net income of $1.6 million, or $0.05 per share, in the fourth quarter of 2000.

For the fourth quarter of 2001, net income excluding tax benefit of $0.2 million, merger, restructuring and other expenses of $0.6 million, and amortization of goodwill and purchased intangible assets of $4.3 million was $5.1 million, or $0.09 per share. For the fourth quarter of 2000, net income excluding tax expense of $1.1 million and merger, restructuring and other expenses of $0.7 million, was $3.4 million, or $0.11 per share. There was no amortization of goodwill and purchased intangible assets in the fourth quarter of 2000.

Due to the reverse merger accounting treatment for the merger with Thermo Cardiosystems, the number of shares used to compute earnings increased from 32.2 million in the fourth quarter of 2000 to 55.8 million shares in the fourth quarter of 2001.

For fiscal year 2001, we reported product sales of $113.4 million compared with $83.4 million in 2000. Net loss for fiscal year 2001 was $87.9 million, or $1.68 per share, compared with net income of $7.5 million, or $0.23 per share, in 2000.

For fiscal 2001, net income, excluding tax benefit of $3.3 million, merger, restructuring and other expenses of $7.1 million, the write-off of in-process research and development of $76.9 million and amortization of goodwill and purchased intangible assets of $15.7 million, was $8.5 million, or $0.16 per share. For fiscal 2000, net income, excluding tax expense of $4.6 million and merger, restructuring and other expenses of $1.9 million, was $14.0 million, or $0.43 per share. There was no write-off of in-process research and development of amortization of goodwill and purchased intangible assets in fiscal 2000.

We were founded in 1976 and are a California corporation. Our principal offices are located at 6035 Stoneridge Drive, Pleasanton, California 94588. Our telephone number is (925) 847-8600, and our fax number is (925) 847-8625.

Thoratec, the Thoratec logo, Thoralon, TLC-II, Vectra, HeartTouch, HeartMate and HeartPak are registered trademarks, and Aria is a trademark, of Thoratec Corporation.

HEMOCHRON, ProTime, Surgicutt, Tenderlett and Tenderfoot are registered trademarks of International Technidyne Corporation, our wholly-owned subsidiary.

THE OFFERING

Common stock offered by our company.....	1,055,000 shares
Common stock offered by selling shareholders.....	5,945,000 shares
Common stock outstanding after the offering.....	56,397,262 shares
Use of proceeds.....	We intend to use the proceeds from this offering for: - the pursuit of additional regulatory approvals for our products; - research and development; - expansion of sales and marketing; - acquisitions of complementary technologies and businesses; and - working capital and other general corporate purposes.
Nasdaq National Market symbol.....	"THOR"

The common stock outstanding after this offering is based on the number of shares outstanding at September 29, 2001, and excludes 5,817,961 shares of common stock reserved for issuance upon the exercise of outstanding stock options on that date at a weighted average exercise price of $9.97 per share and 1,457,682 shares of common stock reserved for issuance upon the conversion of outstanding debentures issued by TCA at a conversion price of $37.62 per share.

SUMMARY CONSOLIDATED FINANCIAL DATA

The summary consolidated financial data presented below for the three fiscal years ended December 30, 2000 is derived from audited financial statements incorporated by reference in this prospectus. The interim summary consolidated financial data for the nine-month periods ended September 2000 and 2001 have been prepared in accordance with accounting principles generally accepted in the United States without audit and, in our opinion, reflect all adjustments necessary (consisting only of normal recurring adjustments) to present fairly our financial position and results of operations for the periods shown. The data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" appearing elsewhere in this prospectus, the consolidated financial statements of Thoratec filed with the SEC in our Form 10-K on March 29, 2001, the consolidated financial statements of TCA filed with the SEC on Form 8-K/A on March 30, 2001, the interim consolidated financial statements of Thoratec filed with the SEC on Forms 10-Q on May 14, 2001, August 13, 2001 and November 13, 2001, the interim consolidated financial statements of TCA filed with the SEC on Form 10-Q on November 9, 2000, pro forma financial information on Form 8-K filed with the SEC on October 24, 2001, and our other filings made with the SEC. Certain reclassifications have been made to the financial statements previously filed with the SEC to conform to current practice.

The merger of Thoratec with TCA was completed on February 14, 2001. We issued new shares of our common stock to the shareholders of TCA in exchange for all the outstanding common stock of TCA at an exchange ratio of 0.835 shares of Thoratec stock for each share of TCA. The merger with TCA was accounted for as a reverse acquisition because former shareholders of TCA owned a majority of our outstanding stock subsequent to the merger. For accounting purposes, TCA is deemed to have acquired Thoratec and therefore for fiscal years 1998, 1999 and 2000 all financial information presented herein represents the results of operations of TCA. The September 2001 consolidated financial information presented herein includes the financial results of TCA for the full nine-month period ended September 29, 2001 and our financial results for the post-merger period from February 14, 2001 through September 29, 2001. The pro forma columns of the statement of operations data for the fiscal year 2000 and the nine-month period ended September 29, 2001 reflect our operating results as if the merger with TCA had occurred at the beginning of fiscal year 2000. In addition, the pro forma columns of the statement of operations data for fiscal year 2000 and the nine-month period ended September 29, 2001 reflect the assumed retirement of $54.8 million of 4 3/4% convertible subordinated debentures as if it had occurred on the first day of each of the fiscal periods presented. The assumed retirement of debt resulted in a decrease in interest expense of $2.8 million (including interest on the debt of $2.6 million and amortization of capitalized debt issuance costs of $0.2 million) for fiscal year 2000 and of $2.1 million (including interest expense on the debt of $1.9 million and amortization of capitalized debt issuance costs of $0.2 million) for the nine month period ended September 29, 2001. The tax effect of the assumed debt retirement was to increase tax expense for fiscal year 2000 by $1.1 million and to decrease the tax benefit for the nine month period ended September 29, 2001 by $0.8 million. The pro forma statement of operations data is presented for informational purposes only and is not indicative of the operating results that would have occurred had the merger been consummated as of the above dates, nor are they necessarily indicative of future operating results. The weighted average number of common shares previously reported by TCA has been adjusted for all periods to reflect the exchange ratio of 0.835 to 1.

Our fiscal year ends on the closest Saturday to December 31. Accordingly, our fiscal year will periodically contain more or less than 365 days. For example, fiscal 1998 ended on January 1, 1999, fiscal 1999 ended on December 31, 1999 and fiscal 2000 ended on December 30, 2000. Our fiscal quarters are three-month periods that end on the Saturday closest to the end of the

applicable calendar quarter. The first nine months of 2000 ended on September 30, 2000. The first nine months of 2001 ended on September 29, 2001.

	FISCAL YEAR			PRO FORMA FISCAL YEAR	NINE MONTHS EN SEPTEMBER	
	1998	1999	2000	2000	2000	2
				(UNAUDITED)	(UNAUDITED)	(UNA
				(IN THOUSANDS, EXCEPT PER SHARE DATA)		
STATEMENT OF OPERATIONS DATA:						
Product sales	$65,301	$78,611	$83,396	$113,825	$61,928	$ 7
Cost of product sales	27,057	33,326	34,830	45,798	25,858	3
Gross profit	38,244	45,285	48,566	68,027	36,070	4
Research and development	12,277	16,044	16,190	23,454	11,816	1
Selling, general and administrative	18,960	22,018	23,587	34,580	17,601	2
Amortization of goodwill and purchased intangible assets	--	--	--	17,884	--	1
In-process research and development	--	--	--	--	--	7
Merger, restructuring and other costs	--	--	1,831	6,000	1,094	
Total operating expenses	31,237	38,062	41,608	81,918	30,511	13
Other operating income	--	--	--	331	--	
Income (loss) from operations	7,007	7,223	6,958	(13,560)	5,559	(9
Interest and other income -- net	5,432	4,014	5,005	8,544	3,726	
Income (loss) before income taxes	12,439	11,237	11,963	(5,016)	9,285	(9
Income tax expense (benefit)	4,619	2,865	4,630	1,640	3,573	(
Net income (loss) before extraordinary item	$ 7,820	$ 8,372	$ 7,333	$ (6,656)	$ 5,712	$(8
Basic and diluted earnings (loss) per share before extraordinary item	$ 0.24	$ 0.26	$ 0.23	$ (0.12)	$ 0.18	$
Weighted average shares outstanding						
Basic	32,406	32,100	32,193	54,024	32,188	5
Diluted	32,552	32,132	32,209	54,024	32,208	5

The impact of the merger with TCA, which was completed on February 14, 2001, is reflected in the actual column of the balance sheet data at September 29, 2001 and therefore, is not included as a pro forma adjustment below. The pro forma as adjusted column of the balance sheet data at September 29, 2001 reflects our sale of 1,055,000 shares of common stock under this prospectus at

an assumed public offering price of $15.75 per share and the application of the net proceeds, after deducting the estimated fees of the underwriters and our share of estimated offering expenses. The pro forma as adjusted column also reflects the assumed retirement of $54.8 million of 4 3/4% convertible subordinated debentures as if it had occurred on September 29, 2001, the debt (and related accrued interest of $1.0 million) was retired at its carrying amount using restricted investments of $45.8 million and cash of $10.0 million, and the transaction resulted in an extraordinary loss of $0.4 million (net of taxes of $0.2 million) representing unamortized capitalized debt issuance costs at September 29, 2001 which were written off.

	SEPTEMBER 29, 2001	
	ACTUAL	PRO FORMA AS ADJUSTED
	(UNAUDITED) (IN THOUSANDS)	
CONSOLIDATED BALANCE SHEET DATA:		
Cash, cash equivalents and short term investments	$ 89,652	$ 95,136
Restricted investments	45,794	--
Total assets	518,771	477,877
Long-term debt	54,838	--
Total shareholders' equity	362,467	377,635

RISK FACTORS

This offering and an investment in our common stock involve a high degree of risk. You should consider each of the risks and uncertainties described in this section and all of the other information in this prospectus before deciding to invest in our common stock. Our business, financial condition and results of operations could be severely harmed by any of the following risks. The trading price of our common stock could decline if any of these risks and uncertainties develops into actual events. You may lose all or part of the money you paid to buy our common stock.

WE HAVE A HISTORY OF NET LOSSES, AND WE MAY NOT ACHIEVE OR MAINTAIN PROFITABILITY.

We were founded in 1976 and have a history of incurring losses from operations. As of September 29, 2001, our accumulated deficit was approximately $31.2 million. We anticipate that our expenses will increase as a result of increased preclinical and clinical testing, research and development and selling, general and administrative expenses. We could also incur significant additional costs in connection with the merger with TCA and the development and marketing of new products and indicated uses for our existing products. Such costs could prevent us from achieving or maintaining profitability in future periods.

WE COULD FACE SIGNIFICANT CHALLENGES IN INTEGRATING TCA AND, AS A RESULT, MAY NOT REALIZE THE EXPECTED BENEFITS OF THE MERGER.

Thoratec and TCA have different technologies, products and business operations that have operated independently. The ongoing combination of these businesses has been complex and costly. If we fail to integrate the employees and products of both companies, the operating results of the combined company could be adversely affected and we may not achieve the benefits or operating efficiencies that we hoped to obtain from the merger.

PHYSICIANS MAY NOT ACCEPT OR CONTINUE TO ACCEPT OUR 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 and extensive training required for their use or unfavorable reimbursement from health care payors. Also, economic, psychological, ethical and other concerns may limit general acceptance of our ventricular assist, graft and other products.

WE HAVE EXPERIENCED RAPID GROWTH AND CHANGES IN OUR BUSINESS, AND OUR FAILURE TO MANAGE THIS AND ANY FUTURE GROWTH COULD HARM OUR BUSINESS.

As a result of the merger with TCA in February 2001, the number of our employees has increased significantly, from 183 on December 30, 2000 to 667 on September 29, 2001. We expect to continue to grow and we may suffer if we do not integrate and train our new employees quickly and effectively. Our revenues 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. If we do not

timely introduce these new products, product improvements and new indications, or if they are not well-accepted by the market, our future growth may suffer.

AMORTIZATION OF OUR INTANGIBLE ASSETS, WHICH REPRESENTS A SIGNIFICANT PORTION OF OUR TOTAL ASSETS, WILL ADVERSELY IMPACT OUR NET INCOME AND WE MAY NEVER REALIZE THE FULL VALUE OF OUR INTANGIBLE ASSETS.

As of September 29, 2001, we had $298.6 million of net intangible assets, representing 58% of our total assets and 82% of our shareholders' equity. These intangible assets consist primarily of goodwill and other intangible assets arising from our merger with TCA and our trademarks and patented technology. Amortization expense relating to these intangible assets for the nine-month period ended September 2001, was $11.3 million. Of this amount, $3.1 million represented amortization of goodwill, which will no longer be amortized after we adopt Statement of Financial Accounting Standards No. 142 at the beginning of fiscal year 2002. These expenses will reduce our future earnings or increase our

future losses.

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 in the event that the recoverability of these intangible assets is impaired, and in the event of such a charge to earnings, the market price of our common stock could be adversely affected.

WE RELY ON SPECIALIZED SUPPLIERS 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 and materials used in our VAD systems. We do not have long term written agreements with most of our vendors and receive components on a purchase order basis. For example, Arrow International Inc., with whom we have no long term written contract, is the only supplier of the mechanical valves for the Thoratec VADs and an alternative supplier may not be available. Sales of our Thoratec VAD System accounted for approximately 30% of our proforma revenues for the nine months ended September 29, 2001. 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 such components or materials ourselves. Cessation or interruption of sales of ventricular assist 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 need to obtain FDA approval before using new suppliers or manufacturing our own components or materials. Existing suppliers could also be 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 such materials or component parts internally. Any interruption in supply of materials or component parts could seriously harm our ability to manufacture products until we locate a new source of supply.

IF WE FAIL TO COMPETE SUCCESSFULLY AGAINST OUR EXISTING OR POTENTIAL COMPETITORS, OUR REVENUES 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. Competitors for the VAD system include, for example, World Heart Corporation and ABIOMED, Inc. Principal competitors in the vascular graft market include W.L. Gore, Inc., C.R. Bard and Boston Scientific Corporation. The principal competitors in the coagulation monitoring equipment market are the Hemotec division of Medtronic, Inc. and Roche Holding AG. The primary competitors in the skin incision device market are Organon Teknika B.V.; Becton, Dickson and Company; and Owen-Mumford Ltd.

Many of our competitors have substantially greater financial, technical, distribution, marketing and manufacturing resources than we do. 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 speeds with which we can:

- develop products;

- complete clinical testing;

- receive regulatory approval; and

- manufacture and sell commercial quantities of products.

Additionally, our competitors may succeed in developing and marketing technologies and products that are more effective than ours. Any such products may render our technology and products obsolete or noncompetitive. In addition, new surgical procedures and medications could be developed that replace or reduce the importance of current procedures that use our products.

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.

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 premarket approval (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 preclinical and clinical trial data. Preclinical data may need to be obtained in accordance with FDA good laboratory practices.

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 revenue. 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 that we have now modified or for which we wish to use for new indications.

The FDA also requires us to adhere to cGMP 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 cGMP 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 in a device is required to be made in compliance with cGMP regulations, which 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.

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.

WE MAY ENCOUNTER PROBLEMS MANUFACTURING OUR PRODUCTS.

We may encounter difficulties manufacturing our products. We do not have experience in manufacturing 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. If we have difficulties manufacturing 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 WILL BE HARMED.

With the exception of Canada and most 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 IMPRA division of C.R. Bard Corporation, which we refer to as Impra, in the United States, Europe and selected countries in Scandinavia, the Middle East and Northern Africa and through Goodman Co. Ltd. in Japan. Our wholly-owned subsidiary, International Technidyne, had sales through a distributor, Allegiance Healthcare, of approximately $9.8 million for the first nine months of 2001. Our agreement with Allegiance Healthcare expires in June 2002, unless terminated earlier by either party if there is a material breach of the agreement which remains uncured.

To the extent we rely on distributors, our success will depend upon the efforts of others, over which we may have little control. If we lose a distributor or a distributor fails to perform, our revenues will be harmed.

SINCE WE DEPEND ON THIRD PARTY REIMBURSEMENT TO OUR CUSTOMERS, IF THIRD PARTY PAYORS FAIL TO PROVIDE APPROPRIATE LEVELS OF REIMBURSEMENT FOR OUR PRODUCTS, OUR OPERATIONS WILL BE HARMED.

Significant uncertainty exists as to the reimbursement status of newly-approved health care products such as ventricular assist devices and vascular grafts. 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 of 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 that we have dealt with, and Medicare and Medicaid, have determined to reimburse some portion of the costs of our ventricular assist devices and our diagnostic and vascular graft products. We cannot, however, estimate what portion of such costs have been 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 we fail to obtain such reimbursement or if the reimbursement levels are partially or completely reduced, our revenues would be reduced.

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

U.S. Patent and Trademark Office, or the 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.

Aside from the biomaterials patents which are utilized in the Thoratec VAD blood pump and cannulae, and one patent covering aspects of our TLC-II, our Thoratec VAD systems are not protected by any patents. We rely principally on trade secret protection and, to a lesser extent patents, to protect our rights to the HeartMate. We rely principally on patents to protect our coagulation testing equipment and skin incision devices.

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 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.

We own or hold rights in some U.S. patents by virtue of the merger between Thoratec and Thermo Cardiosystems. However, documents transferring ownership of some of these patents have not yet been submitted to the PTO and, while documents have been submitted to the PTO for others, those documents have not yet been recorded by the PTO. Until documents transferring rights to us as a result of the merger are recorded, our rights in the respective patents could be subject to rights of others who purchased those rights from Thoratec or Thermo Cardiosystems without knowledge of the merger.

In addition, we have received correspondence from another company alleging that our HeartMate infringes certain patent rights of that company. We cannot assure you that we will be successful if the matter is litigated.

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 only 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 of, 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 endorsement of our products or expand our business.

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. 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.

THE LONG AND VARIABLE SALES AND DEPLOYMENT CYCLES FOR OUR VAD SYSTEMS MAY CAUSE OUR REVENUE AND OPERATING RESULTS TO VARY SIGNIFICANTLY, WHICH INCREASES THE RISK OF AN OPERATING LOSS FOR ANY GIVEN FISCAL QUARTER.

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. As a result, it is difficult for us to predict the quarter in which our customers may purchase our VAD systems and our revenue and operating results may vary significantly from quarter to quarter, which increases the risk of an operating loss for us for any given quarter.

OUR NON-U.S. SALES PRESENT SPECIAL RISKS.

During 2000, sales originating outside the United States and U.S. export sales accounted for approximately 16% of our total revenues on a pro forma basis. For the nine months ended September 30, 2001, sales originating outside the United States and U.S. export sales accounted for approximately 20% of our total revenues. We anticipate that sales outside the United States and U.S. export sales will continue to account for a significant percentage of our revenues 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;
- 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 may be more difficult to enforce in foreign countries; 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.

ANY CLAIMS RELATING TO IMPROPER HANDLING, STORAGE OR DISPOSAL OF HAZARDOUS CHEMICALS AND BIOMATERIALS COULD BE TIME CONSUMING AND COSTLY.

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 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 may be expensive, and current or future environmental regulations may impair our research, development or production efforts.

OUR STOCK PRICE HAS BEEN VOLATILE, IS LIKELY TO CONTINUE TO BE VOLATILE, AND COULD DECLINE SUBSTANTIALLY.

The price of our common stock has been, and is likely to continue to be, highly volatile. The price of our common stock could fluctuate significantly for the following reasons:

- future announcements concerning us or our competitors;

- timing and reaction to the publication of clinical trial results;

- quarterly variations in operating results;

- charges, amortization and other financial effects relating to our merger;

- introduction of new products or changes in product pricing policies by us or our competitors;

- acquisition or loss of significant customers, distributors or suppliers;

- business acquisitions or divestitures;

- changes in earnings estimates by analysts;

- changes in third party reimbursement practices;

- regulatory developments and disclosure regarding completed ongoing or future clinical trials; or

- fluctuations in the economy or general market conditions.

In addition, stock markets in general, and the market for shares of health care stocks in particular, have experienced extreme price and volume fluctuations in recent years which have frequently been unrelated to the operating performance of the affected companies. These broad market fluctuations may adversely affect the market price of our common stock. The market price of our common stock could decline below its current price and the market price of our stock may fluctuate significantly in the future. These fluctuations may be

unrelated to our performance.

In the past, shareholders have often instituted securities class action litigation after periods of volatility in the market price of a company's securities. If a shareholder files a securities class action suit against us, we would incur substantial legal fees and our management's attention and resources would be diverted from operating our business in order to respond to the litigation.

FUTURE ISSUANCES AND SALES OF OUR STOCK COULD DILUTE YOUR OWNERSHIP AND CAUSE OUR STOCK PRICE TO DECLINE.

We have outstanding debentures issued by TCA prior to our merger. These debentures are convertible into our common stock at $37.62 per share. If all of the debentures are converted, we would issue approximately 1,457,682 shares of common stock. Conversion of these debentures could dilute our existing shareholders.

Future sales of substantial amounts of our stock in the public market, or the perception that such sales could occur, could adversely affect the market price of our stock. For example, upon completion of this offering, Thermo Electron will own 8,735,544 shares of our common stock, which cannot be sold without our permission prior to August 14, 2002. Sale of these shares and any shares issued upon conversion of our debentures, and the potential for such sales, could cause our stock price to decline.

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, 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 facility is located. If any disaster were to occur, we may not be able to operate our business at our facilities, which could seriously harm our business and operations. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions.

MANAGEMENT MAY INVEST OR SPEND THE PROCEEDS OF THE OFFERING IN WAYS YOU MAY NOT AGREE WITH AND IN WAYS THAT MAY NOT YIELD A RETURN.

Our management will have broad discretion as to how the net proceeds of this offering will be used. Investors will be relying on the judgment of management regarding the application of the proceeds of this offering. The results and effectiveness of the application of the proceeds are uncertain.

FLUCTUATIONS IN FOREIGN CURRENCY EXCHANGE RATES COULD RESULT IN DECLINES IN OUR REPORTED SALES AND EARNINGS.

Since 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 do not engage in

hedging transactions to protect against uncertainty in future exchange rates between particular foreign currencies and the U.S. dollar.

THE COMPETITION FOR QUALIFIED PERSONNEL IS PARTICULARLY INTENSE IN OUR INDUSTRY AND IN NORTHERN CALIFORNIA. 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 with numerous companies, as well as universities and nonprofit research organizations in the highly competitive Northern California business area. 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.

USE OF PROCEEDS

We estimate net proceeds to our company from the sale of the 1,055,000 shares of common stock of approximately $15.5 million, assuming a public offering price of $15.75 per share and after deducting the estimated underwriting discounts and a portion of the offering expenses paid by us. We will not receive any proceeds from the sale of 5,945,000 shares by the selling shareholders. We intend to use the net proceeds as follows:

- approximately $1 million to $2 million for the pursuit of additional regulatory approvals for our products;
- approximately $1 million to $2 million for research and development;
- approximately $2 million to $3 million for the expansion of sales and marketing;
- approximately $4 million to $5 million for acquisitions of complementary technologies and businesses; and
- approximately $3 million to $4 million for working capital and other general corporate purposes.

We may use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, although no acquisitions are planned or being negotiated as of the date of this prospectus, and no portion of the net proceeds have been allocated for any specific acquisition. Pending these uses, the net proceeds will be invested in investment-grade interest-bearing securities.

The principal purposes of the offering are to provide partial liquidity for our principal shareholders, and to increase our capitalization, financial flexibility and the liquidity for our common stock. As of the date of this prospectus, we cannot specify with certainty all of the particular uses for the net proceeds we will have upon completion of the offering. Accordingly, our management will have broad discretion in the application of net proceeds.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock and do not plan to pay any cash dividends in the foreseeable future. Our current policy is to retain all of our earnings to finance future growth.

PRICE RANGE OF COMMON STOCK

Our common stock is traded on the Nasdaq National Market under the symbol "THOR." The following table sets forth, for the periods indicated, the high and low closing sales prices per share of our common stock, as reported by the Nasdaq National Market.

	HIGH	LOW
Fiscal Year 1999		
First Quarter	$ 8.63	$ 6.25
Second Quarter	11.00	6.50
Third Quarter	11.63	6.38
Fourth Quarter	9.75	5.50
Fiscal Year 2000		
First Quarter	$19.88	$ 8.50
Second Quarter	18.63	8.50
Third Quarter	24.75	15.13
Fourth Quarter	20.56	7.75
Fiscal Year 2001		
First Quarter	$12.88	$ 7.09
Second Quarter	15.55	6.56
Third Quarter	20.02	13.77
Fourth Quarter	20.85	15.67
Fiscal Year 2002		
First Quarter (through February 8, 2002)	$19.32	$15.75

The last reported sale price of common stock on the Nasdaq National Market on February 8, 2002 was $15.75 per share. At September 29, 2001, there were approximately 956 holders of record of our common stock, including multiple beneficial holders at depositories, banks and brokers listed as a single holder in the "street" name of each respective depository, bank or broker.

CAPITALIZATION

The following table sets forth our capitalization at September 29, 2001 on an actual basis, and on an as adjusted basis to reflect our receipt of the estimated net proceeds of $15.5 million from the sale of common stock in this offering, after deducting estimated fees of the underwriters and the portion of the estimated offering expenses that will be paid by us. The pro forma as adjusted column also reflects the assumed retirement of $54.8 million of 4 3/4%

convertible subordinated debentures as if it had occurred on September 29, 2001. The debt (and related accrued interest of $1.0 million) was retired at its carrying amount using restricted investments of $45.8 million and cash of $10.0 million. The transaction resulted in an extraordinary loss of $0.4 million (net of taxes of $0.2 million) representing unamortized capitalized debt issuance costs at September 29, 2001 which were written off. This table should be read in conjunction with our financial statements and accompanying notes incorporated by reference into this prospectus.

The outstanding share information in the table excludes:

- 5,817,961 shares of common stock reserved for issuance upon the exercise of stock options outstanding on September 29, 2001 at a weighted average exercise price of $9.97 per share; and

- 1,457,682 shares of common stock reserved for issuance upon conversion of the outstanding 4 3/4% convertible debentures issued by TCA at a conversion price of $37.62 per share.

	SEPTEMBER 29, 2001	
	ACTUAL	PRO FORMA AS ADJUSTED
	(IN THOUSANDS)	
Cash, cash equivalents and short-term investments	$ 89,652	$ 95,136
Restricted investments	45,794	--
4 3/4% convertible subordinated debentures due 2004	54,838	--
Preferred stock, 2,500,000 shares authorized; no shares issued and outstanding	--	--
Common stock, 100,000,000 shares authorized; 55,342,262 shares issued and outstanding; and 56,397,262 shares issued and outstanding as adjusted	394,267	409,786
Deferred compensation	(586)	(586)
Accumulated deficit	(31,226)	(31,577)
Accumulated translation adjustment	12	12
Total shareholders' equity	$362,467	$377,635
Total capitalization	$417,305	$377,635

On January 23, 2002, we announced a plan to redeem all outstanding 4 3/4% convertible subordinated debentures due 2004 originally issued by Thermo Cardiosystems. As of the date of this prospectus the outstanding principal amount of the debentures is $54.8 million. We anticipate that the redemption will be completed by the end of April, 2002.

DILUTION

If you invest in our common stock, your interest will be diluted to the

extent of the difference between the public offering price per share of our common stock and the as adjusted net tangible book value per share of our common stock after this offering.

Our net tangible book value at September 29, 2001 was $63.9 million, or $1.15 per share of common stock. Net tangible book value per share represents total tangible assets less total liabilities divided by the number of outstanding shares of common stock on September 29, 2001. Our net tangible book value at September 29, 2001 after giving effect to the sale of the 1,055,000 shares of common stock by our company at an assumed public offering price of $15.75 per share, and after deducting estimated underwriting discounts and the portion of estimated offering expenses that will be paid by us, would be $79.4 million or $1.41 per share. This represents an immediate increase in the tangible book value of $0.26 per share to existing shareholders and an immediate dilution of $14.34 per share to new investors, or approximately 91% of the assumed offering price of $15.75 per share. The following table illustrates this per share dilution:

Assumed public offering price per share.....		$15.75
Net tangible book value per share at September 29, 2001...	$1.15	
Increase in net tangible book value per share attributable to this offering.....	0.26	
Net tangible book value per share after this offering.....		1.41
Dilution in net tangible book per share to new investors....		$14.34

The following table shows, at September 29, 2001, the number of shares of common stock purchased from us, the total consideration paid to us and the average price paid per share by previous investors and by new investors purchasing common stock in this offering at an assumed public offering price of $15.75 per share, before deducting estimated underwriting discounts and the portion of estimated offering expenses that will be paid by us.

	SHARES PURCHASED		TOTAL CONSIDERATION		AVERAGE
	NUMBER	PERCENTAGE	AMOUNT	PERCENTAGE	PER SH
			(IN THOUSANDS)		
Previous investors.....	55,342,262	98%	$394,267	96%	$ 7.1
New investors.....	1,055,000	2%	16,616	4%	15.7
Total.....	56,397,262	100%	$410,883	100%	$ 7.2

The computations in the table above assume no exercise of any outstanding

stock options or conversion of outstanding debentures after September 29, 2001. At September 29, 2001, there were options outstanding to purchase a total of 5,817,961 shares of common stock at a weighted average exercise price of $9.97 per share and 1,457,682 shares of common stock reserved for issuance upon conversion of outstanding debentures issued by TCA at a conversion price of $37.62 per share and, if any of these options or debentures are exercised or converted, there will be further dilution to new investors.

SELECTED CONSOLIDATED FINANCIAL DATA

The selected consolidated financial data presented below for the three fiscal years ended December 30, 2000 is derived from audited financial statements incorporated by reference in this prospectus. The interim selected consolidated financial data for the nine-month periods ended September 2000 and 2001 has been prepared in accordance with accounting principles generally accepted in the United States without audit and, in our opinion, reflect all adjustments necessary (consisting only of normal recurring adjustments) to present fairly our financial position and results of operations for the periods shown. The data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" appearing elsewhere in this prospectus, the consolidated financial statements of Thoratec filed with the SEC in our Form 10-K on March 29, 2001, the consolidated financial statements of TCA filed with the SEC on Form 8-K/A on March 30, 2001, the interim consolidated financial statements of Thoratec filed with the SEC on Forms 10-Q on May 14, 2001, August 13, 2001 and November 13, 2001, the interim consolidated financial statements of TCA filed with the SEC on Form 10-Q on November 9, 2000, pro forma financial information on Form 8-K filed with the SEC on October 24, 2001, and our other filings made with the SEC. Certain reclassifications have been made to the financial statements previously filed with the SEC to conform to current practice.

The merger of Thoratec with TCA was completed on February 14, 2001. We issued new shares of our common stock to the shareholders of TCA in exchange for all the outstanding common stock of TCA at an exchange ratio of 0.835 shares of Thoratec stock for each share of TCA. The merger with TCA was accounted for as a reverse acquisition because former shareholders of TCA owned a majority of our outstanding stock subsequent to the merger. For accounting purposes, TCA is deemed to have acquired Thoratec and therefore for fiscal years 1998, 1999 and 2000 all financial information presented herein represents the results of operations of TCA. The September 2001 consolidated financial information presented herein includes the financial results of TCA for the full nine-month period ended September 29, 2001 and our financial results for the post-merger period from February 14, 2001 through September 29, 2001. The pro forma columns of the statement of operations data for the fiscal year 2000 and the nine-month period ended September 29, 2001 reflect our operating results as if the merger with TCA had occurred at the beginning of fiscal year 2000. In addition, the pro forma columns of the statement of operations data for fiscal year 2000 and the nine-month period ended September 29, 2001 reflect the assumed retirement of $54.8 million of 4 3/4% convertible subordinated debentures as if it had occurred on the first day of each of the fiscal periods presented. The assumed retirement of debt resulted in a decrease in interest expense of $2.8 million (including interest on the debt of $2.6 million and amortization of capitalized debt issuance costs of $0.2 million) for fiscal year 2000 and of $2.1 million (including interest expense on the debt of $1.9 million and amortization of capitalized debt issuance costs of $0.2 million) for the nine month period ended September 29, 2001. The tax effect of the assumed debt retirement was to increase tax expense for fiscal year 2000 by $1.1 million and to decrease the tax benefit for the nine month period ended September 29, 2001 by $0.8 million. The pro forma statement of operations data is presented for informational

purposes only and is not indicative of the operating results that would have occurred had the merger been consummated as of the above dates, nor are they necessarily indicative of future operating results. The weighted average number of common shares previously reported by TCA has been adjusted for all periods to reflect the exchange ratio of 0.835 to 1.

Our fiscal year ends on the closest Saturday to December 31. Accordingly, our fiscal year will periodically contain more or less than 365 days. For example, fiscal 1998 ended on January 1, 1999, fiscal 1999 ended on December 31, 1999 and fiscal 2000 ended on December 30, 2000. Our fiscal quarters are three-month periods that end on the Saturday closest to the end of the applicable calendar quarter. The first nine months of 2000 ended on September 30, 2000. The first nine months of 2001 ended on September 29, 2001.

	FISCAL YEAR			PRO FORMA FISCAL YEAR	NINE MONTHS EN SEPTEMBER	
	1998	1999	2000	2000	2000	2
				(UNAUDITED)	(UNAUDITED)	(UNA
				(IN THOUSANDS, EXCEPT PER SHARE DATA)		
STATEMENT OF OPERATIONS DATA:						
Product sales	$65,301	$78,611	$83,396	$113,825	$61,928	$ 7
Cost of product sales	27,057	33,326	34,830	45,798	25,858	3
Gross profit	38,244	45,285	48,566	68,027	36,070	4
Research and development	12,277	16,044	16,190	23,454	11,816	1
Selling, general and administrative	18,960	22,018	23,587	34,580	17,601	2
Amortization of goodwill and purchased intangible assets	--	--	--	17,884	--	1
In-process research and development	--	--	--	--	--	7
Merger, restructuring and other costs	--	--	1,831	6,000	1,094	
Total operating expenses	31,237	38,062	41,608	81,918	30,511	13
Other operating income	--	--	--	331	--	
Income (loss) from operations	7,007	7,223	6,958	(13,560)	5,559	(9
Interest and other income -- net	5,432	4,014	5,005	8,544	3,726	
Income (loss) before income taxes	12,439	11,237	11,963	(5,016)	9,285	(9
Income tax expense (benefit)	4,619	2,865	4,630	1,640	3,573	(
Net income (loss) before extraordinary item	$ 7,820	$ 8,372	$ 7,333	$ (6,656)	$ 5,712	$(8
Basic and diluted earnings (loss) per share before extraordinary item	$ 0.24	$ 0.26	$ 0.23	$ (0.12)	$ 0.18	$
Weighted average shares						

outstanding						
Basic	32,406	32,100	32,193	54,024	32,188	5
Diluted	32,552	32,132	32,209	54,024	32,208	5

The impact of the merger with TCA, which was completed on February 14, 2001, is reflected in the actual column of the balance sheet data at September 29, 2001 and therefore, is not included as a pro forma adjustment below. The pro forma as adjusted column of the balance sheet data at September 29, 2001 reflects our sale of 1,055,000 shares of common stock under this prospectus at an assumed public offering price of $15.75 per share and the application of the net proceeds, after deducting the estimated fees of the underwriters and our share of estimated offering expenses. The pro forma as adjusted column also reflects the assumed retirement of $54.8 million of 4 3/4% convertible subordinated debentures as if it had occurred on September 29, 2001, the debt (and related accrued interest of $1.0 million) was retired at its carrying amount using restricted investments of $45.8 million and cash of $10.0 million, and the transaction resulted in an extraordinary loss of $0.4 million (net of taxes of $0.2 million) representing unamortized capitalized debt issuance costs at September 29, 2001 which were written off.

	SEPTEMBER 29, 2001	
	ACTUAL	PRO FORMA AS ADJUSTED
	(UNAUDITED) (IN THOUSANDS)	
CONSOLIDATED BALANCE SHEET DATA:		
Cash, cash equivalents and short-term investments	$ 89,652	$ 95,136
Restricted investments	45,794	--
Total assets	518,771	477,877
Long-term debt	54,838	--
Total shareholders' equity	362,467	377,635

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The statements in "Management's Discussion and Analysis of Financial Condition and Results of Operations" that relate to future plans, events or performance are forward-looking statements which involve risks and uncertainties. Actual results, events or performance may differ materially from those anticipated in these forward-looking statements as a result of a variety of factors, including those set forth under "Risk Factors" and elsewhere in this prospectus. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. We undertake no obligation to publicly release the result of any revisions to these forward-looking statements that may be needed to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

OVERVIEW

We are a leading manufacturer of circulatory support products for use by patients with congestive heart failure, or CHF. According to the American Heart Association, 4.7 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 FDA approval to commercially market a ventricular assist device, or VAD, to treat patients with late-stage heart failure, which comprises approximately 5% of the CHF patient population. Our VADs are used primarily by these 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 also develop and sell products that are used by physicians and hospitals for vascular and diagnostic applications that include vascular grafts, blood coagulation testing and skin incision devices. We conduct business both domestically and internationally.

The Merger with Thermo Cardiosystems

On February 14, 2001, we completed our merger with TCA. Pursuant to the merger agreement between Thoratec and TCA dated October 3, 2000, we issued 32,226,074 shares of our common stock to the shareholders of TCA in exchange for all the outstanding common stock of TCA (38,594,281 shares outstanding as of February 14, 2001) at an exchange ratio of 0.835 to 1. Immediately following the transaction, TCA's shareholders owned 59% of our then outstanding common stock and our former shareholders owned the remaining shares of our common stock. Thermo Electron Corporation, which we refer to as Thermo Electron, the majority shareholder of TCA prior to the merger, received 19,312,959 shares of the 32,226,074 newly issued shares. Immediately following the merger, Thermo Electron owned 35% of our then outstanding shares of common stock. Pursuant to the terms of a Registration Rights Agreement between us and Thermo Electron dated October 3, 2000, we filed a Registration Statement on Form S-3 with the SEC, which became effective on June 15, 2001, to register for resale 4,828,240 shares of our common stock held by Thermo Electron. Subsequent to that filing, Thermo Electron sold substantially all of the 4,828,240 registered shares. As of September 29, 2001, Thermo Electron owned 14,560,544 of our shares, representing approximately 26% of our total outstanding shares. After completion of this offering, Thermo Electron will own approximately 15% of our outstanding common stock.

The merger with TCA was accounted for under the purchase method of accounting and was treated as a reverse acquisition because the shareholders of TCA owned the majority of our common stock after the merger. TCA was deemed the acquiror for accounting and financial reporting purposes. Accordingly, all historic financial information included in this prospectus reflects TCA's results prior to the completion of the merger on February 14, 2001.

Due to the reverse acquisition, Thoratec's assets and liabilities were recorded based upon estimated fair values at the date of acquisition. As of September 29, 2001, $309.5 million of the purchase price of $346.2 million has been allocated to goodwill and other purchased intangible assets. As a result of the merger, $76.9 million relating to in-process research and development was expensed upon completion of

the merger. The goodwill and other intangibles will be amortized over their estimated useful lives of six to twenty years until we adopt Statement of Financial Accounting Standards (SFAS) No. 142, "Goodwill and Other Intangible Assets." SFAS No. 142 requires companies to cease amortizing goodwill that

existed at June 30, 2001 and also establishes a new method of testing goodwill for impairment on an annual basis or on an interim basis if an event occurs or circumstances change that would reduce the fair value of a reporting unit below its carrying value. We will adopt SFAS No. 142 at the beginning of fiscal year 2002 and we will stop amortizing goodwill and begin testing goodwill for impairment under the new standard. If an impairment occurs, such impairment could harm our future results of operations. Currently, amortization of goodwill is $5.0 million per year.

Restructuring Plan

In June 2001, we approved a restructuring plan to consolidate all of our ventricular assist device manufacturing operations to our manufacturing facilities and headquarters in Pleasanton, California. The restructuring initiatives, which have already commenced, are related to our desire to provide maximum value to customers through achievement of operating efficiencies. We estimate that annual savings of approximately $2.0 million will result upon completion of this plan. This plan specifically provides for the reduction of approximately 90 of our manufacturing and related workforce at our Woburn and Chelmsford, Massachusetts facilities, both of which were acquired in the merger with TCA in February 2001. We notified the affected employees during the second quarter of 2001 both through direct personal contact and written notification. Our HeartMate family of products, which are currently manufactured at the two Massachusetts facilities, will be transitioned to the Pleasanton facility. This plan is estimated to take 18 months because of FDA certification requirements for the new manufacturing activities in Pleasanton. Through September 29, 2001, we have accrued $1.0 million of restructuring charges, in accordance with Emerging Issues Task Force (EITF) 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity," and Staff Accounting Bulletin (SAB) 100, "Restructuring and Impairment Charges." These charges represent estimated severance costs and stock option acceleration charges.

RESULTS OF OPERATIONS

NINE MONTHS ENDED SEPTEMBER 29, 2001 AND SEPTEMBER 30, 2000

Product Sales

Product sales in the first nine months of 2001 were $78.4 million compared to $61.9 million in the first nine months of 2000, an increase of $16.5 million or 27%. This increase was attributable primarily to the addition of Thoratec product sales of $22.6 million, partially offset by a $6.2 million reduction in sales of HeartMate products due principally to significant distractions and uncertainties among Thermo Cardiosystems' sales force during the first and second quarters while the merger was being closed and the companies were being integrated. The impact was principally in the domestic market because we use employees to sell the HeartMate products domestically compared to the international markets where distributors are primarily used. Domestic sales of the HeartMate in 2001 were $7.3 million lower than the previous year, partially offset by a $1.1 million increase in sales of the HeartMate internationally. The decrease in domestic HeartMate sales was also attributable, in part, to normal fluctuations in the ventricular assist device market as customers used existing inventories to address their implantation needs.

On a pro forma basis, as if the merger had occurred at the beginning of our 2000 fiscal year, product sales in the first nine months of 2001 were $81.9 million compared to $83.0 million in the first nine months of 2000, a decrease of $1.1 million or 1%. However, for the three months ended September 29, 2001, product sales were $28.7 million compared to $25.6 million on a pro forma basis for the three months ended September 30, 2000, representing an increase of $3.1 million or 12%. This 12% growth in revenue for the quarter was comprised of a

21% increase in revenues from our circulatory support products offset by a 6% reduction in sales of our blood coagulation testing and skin incision devices.

Gross Profit

Gross profit in the first nine months of 2001 was $42.1 million, or 54% of product sales, compared to gross profit of $36.1 million in the first nine months of 2000, or 58% of product sales. This decrease in gross profit as a percentage of sales was primarily due to a lower proportion of domestic sales to total product sales. Ventricular assist devices that are sold in the United States have a higher gross margin than those sold in the rest of the world. In addition, production costs for the HeartMate product line were higher in the first nine months of 2001 due to $1.0 million of employee retention costs related to manufacturing and $0.4 million of write-offs of product inventory related to the HeartMate pneumatic driver which was discontinued in the second half of 2001. In addition, we incurred $0.3 million of manufacturing costs associated primarily with the introduction of new products. Without these charges, gross profit for the first nine months of 2001 would have been $43.8 million, or 56% of product sales. In addition, approximately 1% of the decrease in gross profit as a percentage of sales was attributable to lower gross profit on our other medical equipment product line. This decrease was attributable principally to lower average selling prices of our skin incision products due to increased market competition.

On a pro forma basis, gross profit in the first nine months of 2001 was $44.2 million, or 54% of product sales, compared to gross profit in the first nine months of 2000 of $49.4 million, or 60% of product sales. The decrease in gross profit as a percentage of sales was attributable to a lower proportion of domestic sales to total product sales, and the above-mentioned charges. Without these charges, gross profit for the first nine months of 2001 would have been $45.9 million, or 56% of product sales.

Research and Development

Research and development expenses in the first nine months of 2001 were $17.0 million, or 22% of product sales, compared to $11.8 million, or 19% of product sales in the first nine months of 2000, an increase of $5.2 million or 44%. This increase resulted from combining Thoratec's research and development expenses of $5.4 million with TCA's expenses after the merger.

On a pro forma basis, research and development expenses in the first nine months of 2001 were $18.0 million, or 22% of product sales, compared to $17.3 million, or 21% of product sales, for the first nine months of 2000, an increase of $0.7 million or 4%. This increase was attributable to increased spending of $1.3 million for improvements to the HeartMate and the Thoratec VAD system, partially offset by reduced spending of $0.5 million for the HeartMate II and HeartMate III projects.

Selling, General and Administrative

Selling, general and administrative expenses in the first nine months of 2001 were $24.0 million, or 31% of product sales, compared to $17.6 million, or 28% of product sales, in the first nine months of 2000, an increase of $6.4 million or 36%. This increase resulted from combining Thoratec's selling, general and administrative expenses with TCA's selling, general and administrative expenses, partially offset by lower overall employee related expenses.

On a pro forma basis, selling, general and administrative expenses in the

first nine months of 2001 were $25.6 million, or 31% of product sales, compared to $25.4 million, or 31% of product sales, for the first nine months of 2000, an increase of $0.2 million or 1%. This increase was attributable to $0.4 million for higher corporate and patent legal costs, $0.4 million for higher employee costs related to the promotion, recruiting and relocation of personnel as well as overall higher employee salary costs and $0.3 million for higher audit and financial consulting services. Partially offsetting the increase was a $1.0 million reduction in selling and marketing costs associated with staffing reductions after the completion of the merger with Thermo Cardiosystems.

Amortization of Goodwill and Purchased Intangible Assets

Amortization of purchased intangibles and goodwill in the first nine months of 2001 was $11.3 million. There was no such amortization in the first nine months of 2000. All purchased intangibles and goodwill resulted from the merger with Thermo Cardiosystems. Our goodwill and other intangibles will be amortized over their estimated useful lives of six to twenty years until we adopt SFAS No. 142 at the

beginning of fiscal year 2002. Thereafter, we will stop amortizing goodwill and will begin testing our goodwill for impairment under the new standard contained in SFAS No. 142.

Merger, Restructuring and Other Costs

Merger, restructuring and other costs in the first nine months of 2001 were $6.6 million compared to $1.1 million in the first nine months of 2000, an increase of $5.5 million or 500%. This increase was caused by employee severance and pre-merger retention costs of $2.4 million, consulting, accounting and legal expenses of $1.4 million, restructuring costs of $1.0 million, which represented estimated severance costs related to the consolidation of ventricular assist device manufacturing operations, and costs of $0.7 million related to the events of September 11, 2001.

In-process Research and Development

In-process research and development expense in the first nine months of 2001 was $76.9 million. There was no such expense in the first nine months of 2000. All in-process research and development was related to the merger with Thermo Cardiosystems, representing a one-time charge related to acquired in-process research and development that had not yet reached technological feasibility and had no alternative future uses.

Interest and Other Income - Net

Interest and other income - net in the first nine months of 2001 was $2.3 million compared to $3.7 million in the first nine months of 2000, a decrease of $1.4 million or 39%. This decrease was due to a $1.3 million reduction in interest income caused by both lower cash balances and a reduction in interest rates.

Income Taxes

Our effective tax benefit rate in the first nine months of 2001 was 3% compared to an effective tax provision rate of 38% in the first nine months of 2000. Our effective tax benefit rate for 2001 differed from the statutory federal income tax rate due to our net loss position before income taxes in the first nine months of 2001. For the first nine months of 2000, our effective tax provision rate exceeded the federal statutory income tax rate due to the impact

of state income taxes.

Net Income (Loss) Before Extraordinary Item

As a result of the foregoing factors, net loss before extraordinary item was $88.3 million in the first nine months of 2001 compared to net income before extraordinary item of $5.7 million in the first nine months of 2000.

FISCAL YEARS 2000 AND 1999

Product Sales

Product sales in 2000 were $83.4 million compared to $78.6 million in 1999, an increase of $4.8 million or 6%. Ventricular assist device revenues increased to $43.1 million in 2000 from $39.8 million in 1999, due to an increase in revenues from our HeartMate products, principally due to higher demand. Product sales from blood coagulation testing and skin incision devices increased to $40.3 million in 2000 from $38.8 million in 1999 due to a $2.0 million increase in revenues from blood coagulation testing systems due to increased demand and the introduction of new products, offset in part by a decrease in revenues from skin incision devices due to lower demand caused by competitive pricing pressures.

Gross Profit

Gross profit in 2000 was $48.6 million, or 58% of product sales, compared to $45.3 million, or 58% of product sales in 1999. An increase in the average sales price for the HeartMate, and improved overhead absorption were offset by a decrease in gross profit margin for blood coagulation testing and skin incision devices during fiscal year 2000.

Research and Development

Research and development expenses in 2000 were $16.2 million, or 19% of product sales, compared to $16.0 million, or 20% of product sales, in 1999, an increase of $0.2 million or 1%. This increase was due to increased expenses relating to ventricular assist products for the development of the HeartMate II and continuing expenses related to the REMATCH trial.

Selling, General and Administrative

Selling, general, and administrative expenses in 2000 were $23.6 million, or 28% of product sales, compared to $22.0 million, or 28% of revenues, in 1999, an increase of $1.6 million or 7%. This increase was due to an increase in selling and marketing expenses in support of increased product sales.

Merger, Restructuring and Other Costs

Merger, restructuring and other charges in 2000 were $1.8 million. All merger, restructuring and other charges were due to employee retention costs in connection with the merger. There were no such charges in 1999.

Interest and Other Income - Net

Interest and other income - net in 2000 was $5.0 million compared to $4.0 million in 1999, an increase of $1.0 million or 25%. Interest income increased to $7.6 million in 2000 from $7.1 million in 1999, due to an increase in interest rates. Interest expense decreased to $2.9 million in 2000 from $3.6 million in 1999, due to our purchase of $15.2 million principal amount of our

4.75% subordinated convertible debentures due 2004.

Income Taxes

The effective tax rate in 2000 was 39% compared to 25% in 1999. Our effective tax rate exceeded the statutory federal income tax rate in 2000 due to the impact of state income taxes. Our effective tax rate was lower than the statutory federal income tax rate in 1999 as a result of a favorable resolution of our claim for prior-year research and development tax credits. The effect of the credit decreased the tax provision recorded in 1999 by $1.5 million.

Net Income (Loss) Before Extraordinary Item

As a result of the foregoing factors, net income before extraordinary item was $7.3 million for 2000 compared to $8.4 million for 1999.

FISCAL YEARS 1999 AND 1998

Product Sales

Product sales in 1999 were $78.6 million compared to $65.3 million in 1998, an increase of $13.3 million or 20%. Our ventricular assist device sales increased to $39.8 million in 1999 from $28.8 million in 1998. The increase in VAD sales was due to a $9.7 million increase in sales from our HeartMate products due to an increase in demand as a result of an additional FDA approval for commercial sale, which was granted in September 1998 and, to a lesser extent, a 13% price increase for the HeartMate, effective November 1998. Product sales from blood coagulation testing and skin incision devices increased to $38.8 million in 1999 from $36.5 million in 1998, primarily due to a $2.0 million increase in sales from our skin incision devices and ProTime Microcoagulation System, due to an increase in demand.

Gross Profit

Gross profit in 1999 was $45.3 million, or 58% of product sales, compared to $38.2 million, or 59% of product sales, in 1998. Gross profit margin for blood coagulation testing and skin incision devices decreased primarily due to changes in product mix and pricing strategies. This decrease was offset in part

by an increase in gross profit margin of ventricular assist devices due to an increase in demand resulting in higher overhead absorption.

Research and Development

Research and development expenses in 1999 were $16.0 million, or 20% of product sales, compared to $12.3 million, or 19% of product sales, in 1998, an increase of $3.7 million or 30%. This increase was due to a $2.7 million increase in expenses for ventricular assist devices relating to the REMATCH trial. To a lesser extent, research and development expenses increased due to increased product development activities for blood coagulation testing and skin incision devices.

Selling, General and Administrative

Selling, general, and administrative expenses in 1999 were $22.0 million, or 28% of product sales, compared to $19.0 million, or 29% of product sales, in 1998, an increase of $3.0 million or 16%. This increase was due to a $1.5 million increase in costs for sales and marketing staff for ventricular assist devices and, to a lesser extent, higher advertising costs relating to the

HeartMate, which was approved by the FDA for commercial sale in September 1998.

Interest and Other Income - Net

Interest and other income - net in 1999 was $4.0 million compared to $5.4 million in 1998, a decrease of $1.4 million or 26%. Interest income decreased to $7.1 million in 1999 from $7.4 million in 1998, due to a decrease in interest rates and, to a lesser extent, lower average invested balances. Interest expense was $3.6 million in both periods. Other income decreased by $1.1 million due to the expiration of several government research and development contracts.

Net Income (Loss) Before Extraordinary Item

As a result of the foregoing factors, net income before extraordinary item was $8.4 million in 1999 compared to $7.8 million for 1998.

Income Taxes

Our effective tax rate in 1999 was 25% compared to 37% in 1998. The effective tax rate of 25% in 1999 resulted from a favorable resolution of our claim for prior-year research and development tax credits. The effect of the credit decreased the tax provision recorded in 1999 by $1.5 million. The effective tax rate of 37% in 1998 exceeded the statutory federal income tax rate due to the impact of state income taxes.

LIQUIDITY AND CAPITAL RESOURCES

At the end of September 2001, we had working capital of $125.6 million compared with $149.2 million at the end of December 2000. Cash, cash equivalents and short-term investments at the end of September 2001 were $89.7 million compared to $128.9 million at the end of December 2000, a decrease of $39.2 million. This decrease was due principally to pledging $45.0 million in short-term investments as collateral for a letter of credit guarantee to Thermo Electron related to Thermo Electron's guarantee of our outstanding subordinated debentures which are due in 2004. These investments are classified as restricted investments on the September 29, 2001 balance sheet. As of September 29, 2001, the outstanding principal amount of our subordinated debentures was $54.8 million and our restricted investments increased to $45.8 million due to interest earned. For the nine-month period ended September 29, 2001, we received interest payments of $3.8 million on our cash and short-term and restricted investments and made interest payments of $1.3 million on our subordinated debentures.

On January 23, 2002, we announced a plan to redeem all outstanding 4 3/4% convertible subordinated debentures due 2004 originally issued by Thermo Cardiosystems. As of the date of this prospectus the outstanding principal amount of the debentures is $54.8 million. We anticipate that the redemption will be completed by the end of April, 2002. We intend to redeem these debentures using restricted investments of $45.8 million and cash of $9.0 million.

During the nine months ended September 29, 2001, we made cash payments of $5.0 million for merger, restructuring and other costs. These payments consisted mainly of employee retention and severance costs and legal and accounting costs related to the merger transaction. During the nine months ended September 29, 2001, TCA incurred $5.8 million of merger transaction costs, consisting principally of banking, legal and accounting costs, which were paid and capitalized in the purchase consideration (now a component of goodwill).

On April 12, 2001, we announced a stock repurchase program under which our common stock with a market value up to $20 million may be acquired in the open market or in privately negotiated transactions. The number of shares to be purchased and the timing of purchases is based on several conditions, including the price of our stock, general market conditions and other factors. Through September 29, 2001, $1.7 million in common stock repurchases have been made, representing 192,700 shares. These repurchased shares were subsequently retired.

During the nine months ended September 29, 2001, we have made purchases of $4.7 million for capital equipment, including rental and support equipment used by our customers to operate the ventricular assist devices.

During the first nine months of 2001, we received cash of $6.3 million from the exercise of employee stock options.

We believe that cash on-hand, short-term investments, proceeds from this offering and expected cash flow from operations will be sufficient to fund our operations and capital requirements for the foreseeable future. We expect that our operating expenses will increase in future periods as we spend more on product manufacturing, marketing and research and development of new product lines as well as incur substantial costs associated with the consolidation of our VAD manufacturing operations.

The impact of inflation on our financial position and results of operations was not significant during the nine-month periods ended September 2001 and September 2000.

QUANTITATIVE AND QUALITATIVE DISCLOSURE OF MARKET RISK

We do not currently use derivative financial instruments in our operations or investment portfolio. We do not have material exposure to market risk associated with changes in interest rates. Our subordinated debentures carry a fixed rate of interest and are currently callable at par value. Our investment portfolio at the end of the third quarter 2001 consisted of short-term state and municipal government bonds and money market funds that are classified as available-for-sale and have maturities of less than 90 days. We do not expect to be subject to material interest rate risk with respect to our short-term investments. We do not believe we have any other material exposure to market risk associated with interest rates.

We conduct business in foreign countries. Our international operations consist primarily of sales and service personnel for our ventricular assist products. These employees report into our U.S. sales and marketing group and are internally reported as part of that group. All assets and liabilities of our non-U.S. operations are translated into U.S. dollars at the fiscal period-end exchange rates. The resulting translation adjustments are included in comprehensive income. The period-end translation of the non-functional currency balances (the result of foreign sales, foreign expenses, and intercompany transactions) in our wholly owned subsidiary in the United Kingdom at the fiscal period-end exchange rate into the functional currency of our subsidiary results in foreign currency exchange gains and losses. These foreign currency exchange gains and losses are included in interest and other income-net. Net foreign currency exchange loss was approximately $74,000 for the first nine months of 2001. There were no such gains or losses in the first nine months of 2000 as Thoratec's United Kingdom subsidiary became a part of our operations upon the completion of our merger with TCA on February 14, 2001.

Currently, we do not expect to be subject to material foreign currency risk with respect to future costs or cash flows from our foreign operations and, to date, we have not entered into any significant foreign currency forward exchange contracts or other derivative financial instruments to hedge the effects of adverse fluctuations in foreign currency exchange.

BUSINESS

OVERVIEW

We are a leading manufacturer of circulatory support products for use by patients with congestive heart failure, or CHF. According to the American Heart Association, 4.7 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 FDA approval to commercially market a ventricular assist device, or VAD, to treat patients with late-stage heart failure, which comprises approximately 5% of the CHF patient population. Our VADs are used primarily by these 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 develop and market products that are used by physicians and hospitals for cardiac assist, vascular and diagnostic applications. Our three types of products are:

- Circulatory support products. Our circulatory support products include ventricular assist devices for the short-term and long-term treatment of congestive heart failure. Our products address more indications than the products of any other cardiac assist device company.

- Vascular graft products. We have developed small diameter grafts to address the vascular access and coronary bypass surgery markets. These grafts use our proprietary materials that are designed to improve performance. Our grafts are sold in the United States and internationally for use in hemodialysis patients and are currently in clinical trials for coronary artery bypass applications.

- Blood coagulation testing and skin incision devices. We have a leading market position for devices that monitor blood coagulation and perform blood screening analysis for patients undergoing various surgical procedures. We also offer a family of single-use skin incision devices used to create a blood sample.

Our ventricular assist devices are regarded as the most versatile and widely used circulatory support systems for patients with late-stage CHF. We currently market devices that may be implanted or worn outside the body and that are suitable for treatments of different durations for patients of varying sizes and ages. We estimate that our VADs have treated over 4,700 patients, or more than 3.5 times as many patients as our nearest competitor. Our devices are used primarily for patients awaiting a heart transplant or recovering from open heart surgery. However, we are pursuing approval to use our VADs in other indications, including as an alternative to maximum drug therapy for CHF patients who are not eligible for a heart transplant and for therapeutic recovery to partially reverse the complications of late-stage heart failure in certain patients. We estimate the combined market size for these indications could be over 200,000 patients annually in the United States alone. We have submitted PMA Supplements for both these indications and expect to receive FDA approvals for each by the end of 2002.

On February 14, 2001, we completed our merger with Thermo Cardiosystems, a Massachusetts-based manufacturer of cardiac assist, blood coagulation testing

and skin incision devices. As a result of the merger, we substantially increased the size of our company and became a leading provider of circulatory support products worldwide. We now sell VADs to virtually every leading heart transplant center worldwide and we market three out of the four VADs approved by the FDA as a bridge to heart transplant. At the time of the merger, we changed our name to Thoratec Corporation. As a consequence of the merger, the parent company of TCA, Thermo Electron, today owns approximately 26% of our outstanding stock and will own approximately 15% after this offering.

THE REMATCH TRIAL

On November 12, 2001 the results of a clinical trial called REMATCH, or Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart Failure, were presented at the American

Heart Association Scientific Sessions and the results were published in a website edition of The New England Journal of Medicine. The REMATCH trial, which cost approximately $25 million according to one of the trial sponsors, was a collaboration among the National Institutes of Health, or NIH, as lead sponsor, Columbia University and our company. We were a partial sponsor of the REMATCH trial, providing approximately $3.6 million of financial support and all necessary VADs and related equipment.

The REMATCH trial results, as published in the New England Journal of Medicine, involved 129 late-stage CHF patients who, because of their ages or other diseases, were not eligible to receive one of the very limited supply of donor organs for heart transplantation. The study was independently coordinated by Columbia University at 21 prestigious transplant centers in the United States. Patient enrollment for the initial study protocol began in 1998 and concluded in June 2001. The overall purpose of the study was to evaluate the efficacy, safety and cost effectiveness of our HeartMate ventricular assist device versus optimal medical management, which we call "maximum drug therapy." The REMATCH publication provided a detailed evaluation of survivability, device safety and impact on patient quality of life.

Results from the REMATCH trial showed a significant survival benefit and improved quality of life for patients using the HeartMate compared to maximum drug therapy. The study showed the overall probability of one-year survival for those on the HeartMate was 52% versus 25% for patients treated with maximum drug therapy. The one year survival rates for patients younger than 60 years old was 74% for those patients on the HeartMate and 33% for those treated with maximum drug therapy. The one year survival rates for patients 60 to 69 years old was 47% for those patients on the HeartMate and 15% for those treated with maximum drug therapy. Two-year survival rates are estimated to be 23% for patients on the HeartMate and 8% for those treated with maximum drug therapy. The median length of survival was approximately 408 days for those on the HeartMate and 150 days for those treated with maximum drug therapy. The frequency of serious adverse events for patients in the HeartMate group was 2.35 greater than for patients in the maximum drug therapy group, with a predominance of infection, bleeding and malfunction of the device. Some of these adverse events experienced by patients on the HeartMate included an ischemic stroke in approximately 10% of the patients, half of which were major.

The overall quality of life, as measured by the patient's emotional state, whether or not they were depressed, and their mobility, was significantly higher at one year for patients on the HeartMate than for those treated with maximum drug therapy. For example, as measured by the Medical Outcomes Study Short-Form General Health Survey, on a variable score from 0-100, the physical function mean score of patients on the HeartMate was approximately 45 compared to

approximately 20 for patients on maximum drug therapy. This survey also showed that the emotional state mean score of patients on the HeartMate was approximately 65 compared to 18 for patients on maximum drug therapy. At the time the results of the REMATCH trial were published there were 27 HeartMate patients still alive, versus 7 patients receiving maximum drug therapy.

Based on a review of these data, the FDA approved an IDE Supplement allowing up to 30 additional non-randomized patients to be implanted with the HeartMate as an alternative to maximum drug therapy. This IDE Supplement also permits patients who were being treated with maximum drug therapy in the original study to be implanted with the HeartMate.

On October 16, 2001, we submitted a PMA Supplement for the HeartMate as an alternative to maximum drug therapy for patients suffering from late-stage CHF. On November 29, 2001 we received notification from the FDA that it will expedite the review of our PMA Supplement. We have been notified that on March 4, 2002 the FDA Circulatory System Devices Advisory Panel will meet to review our PMA Supplement based on the REMATCH trial. We believe that the panel will issue a recommendation to the FDA on the day of its meeting. The panel could recommend approval, disapproval or approval with certain conditions and the FDA typically follows the panel's recommendations although it is not legally obligated to do so. If approved by the FDA, the HeartMate will become the first ventricular assist device approved for use as an alternative treatment to maximum drug therapy for patients suffering from late-stage CHF. We have already initiated discussions with the Centers for Medicare and Medicaid Services (formerly HCFA) regarding reimbursement coverage for use of the HeartMate in this treatment.

We believe that this new application for our HeartMate device represents a market opportunity of up to 100,000 additional patients annually in the United States alone, which would represent a significant increase over our existing customer base. For these patients, maximum drug therapy is currently the only treatment available and, even with drug therapy, the 12-month mortality rate for these patients is 75%. We believe that the HeartMate will provide a significant survival benefit for this patient population.

OTHER RECENT DEVELOPMENTS

On January 23, 2002, we announced a plan to redeem all outstanding 4 3/4% convertible subordinated debentures originally issued by Thermo Cardiosystems. As of the date of this prospectus the outstanding principal amount of the debentures is $54.8 million. We anticipate that the redemption will be completed by the end of April, 2002.

On January 29, 2002, we announced for the fourth quarter ended December 29, 2001, product sales of $35.0 million compared with $21.5 million in the fourth quarter a year ago. Net income for the fourth quarter of 2001 was $0.4 million, or $0.01 per share, compared to net income of $1.6 million, or $0.05 per share, in the fourth quarter of 2000.

For the fourth quarter of 2001, net income excluding tax benefit of $0.2 million, merger, restructuring and other expenses of $0.6 million, and amortization of goodwill and purchased intangible assets of