

THORATEC CORP  
Form 424B3  
November 12, 2004

**Filed under Rule 424(b)(3) of the Securities Act of 1933,  
relating to Registration No. 333-118274**

**Prospectus Supplement No. 1  
to Prospectus Dated October 25, 2004  
of**

**THORATEC CORPORATION**

**Relating to**

**\$247,427,000 Senior Subordinated Convertible Notes due 2034  
and  
Shares of Common Stock Issuable upon Conversion of the Notes**

This prospectus supplement no. 1 relates to the resale by selling securityholders of Thoratec Corporation's Senior Subordinated Convertible Notes Due 2034 and the shares of Thoratec common stock issuable upon conversion of the notes.

You should read this prospectus supplement no. 1 in conjunction with the prospectus dated October 25, 2004, which should be delivered in conjunction with this prospectus supplement. This prospectus supplement is not complete without, and may not be delivered or used except in conjunction with, the prospectus, including any amendments or supplements to it. This prospectus supplement is qualified by reference to the prospectus, except to the extent that the information provided by this prospectus supplement supercedes information contained in the prospectus.

**Investing in the notes and the common stock issuable upon conversion of the notes involves risk. See the discussion entitled Risk Factors beginning on page 6 of the prospectus dated October 25, 2004.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the prospectus dated October 25, 2004. Any representation to the contrary is a criminal offense.**

The table under the caption Selling Securityholders beginning on page 51 of the prospectus is hereby supplemented and amended by updating information as to certain selling securityholders identified in the table below. We prepared this table based on information supplied to us by the selling securityholders named in the table below on or prior to November 12, 2004. Information about the selling securityholders may change over time. If required, any changed or new information given to us will be set forth in supplements to the prospectus or amendments to the registration statement of which this prospectus is a part, if and when necessary.

We have assumed for purposes of the table below that the selling securityholders will sell all of the notes and all of the common stock issuable upon conversion of the notes pursuant to this prospectus supplement and the prospectus, and that any other shares of our common stock beneficially owned by the selling securityholders will continue to be beneficially owned.

Except as set forth below, none of the selling securityholders has, or within the past three years has had, any position, office or other material relationship with us or any of our predecessors or affiliates.

The selling securityholders identified below may have sold, transferred or otherwise disposed of, pursuant to transactions exempt from the registration requirements of the Securities Act of 1933, as amended, all or a portion of their notes since the date on which they provided the information regarding their notes.

Name of Selling Securityholder	Principal Amount of Notes Beneficially Owned and Offered (USD)(4)	Percentage of Notes Outstanding(%)	Number of Shares of Common Stock Beneficially Owned(1)(2)	Number of Shares of Common Stock Offered (1)	Number of Shares of Common Stock Beneficially Owned after the Offering(2)(3)	Natural Person(s) with Voting or Investment Power
Grace Convertible Arbitrage Fund Ltd. (5)	8,500,000	3.44	250,454	250,454	0	Bradford Whitmore & Michael Brailov
KBC Financial Products USA, Inc. (#) (6)	9,540,000	3.86	281,098	281,098	0	(7)

\* Less than one percent (1%).

# The selling securityholder is a registered broker-dealer.

+ The selling securityholder is an affiliate of a registered broker-dealer.

(1) Assumes conversion of all of the holder's notes at a conversion rate of 29.4652 shares of common stock per \$1,000 principal amount at maturity of the notes. This conversion rate is subject to adjustment as described under "Description of Notes Conversion Rights." As a result, the number of shares of common stock issuable upon conversion of the notes may increase or decrease in the future. Excludes shares of common stock that may be issued by us upon the repurchase of the notes as described under "Description of Notes Repurchase of the Notes by Us at the Option of Holders Upon a Fundamental Change" and fractional shares. Holders will receive a cash adjustment for any fractional share amount resulting from conversion of the notes, as described under "Description of Notes Conversion Rights." in the prospectus.

(2) The number of shares of common stock beneficially owned by each holder named above is less than 1% of our outstanding common stock, calculated based on 49,663,384 shares of common stock outstanding as of September 13, 2004. In calculating this amount for each holder, we treated as outstanding the number of shares of common stock issuable upon conversion of all of that holder's notes, but we did not assume conversion of any other holder's notes.

(3) For the purposes of computing the number and percentage of notes and shares to be held by the selling shareholders after the conclusion of the offering, we have assumed for purposes of the table above that the selling securityholders named above will sell all of the notes and all of the common stock issuable upon conversion of the notes offered by this prospectus supplement and the prospectus, and that any other shares of our common stock beneficially owned by these selling securityholders will continue to be beneficially owned.

(4) The sum of the listed principal amounts of notes beneficially owned by the selling securityholders named in the table above combined with those previously listed in the prospectus dated October 25, 2004, exceeds \$247,427,000 because certain selling securityholders may have transferred notes or otherwise reduced their position prior to selling

pursuant to this prospectus, and as a result we received beneficial ownership information from additional selling securityholders. However, the maximum principal amount of notes that may be sold under this prospectus will not exceed \$247,427,000.

(5) This selling securityholder was previously listed as holding \$6,500,000 of the notes. This information supercedes all prior information concerning Grace Convertible Arbitrage Fund Ltd.

(6) This selling securityholder was previously listed as holding \$8,290,000 of the notes. This information supercedes all prior information concerning KBC Financial Products USA, Inc..

(7) KBC Financial Products USA, Inc. exercises voting and investment control over any shares of common stock issuable upon conversion of the notes owned by this selling holder. Mr. Luke Edwards, Managing Director, exercises voting and investment control on behalf of KBC Financial Products USA, Inc.

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The date of this prospectus supplement is November 12, 2004.