



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

DIVISION OF  
CORPORATION FINANCE

December 21, 2010

David V. Smith  
Chief Financial Officer  
Thoratec Corporation  
6035 Stoneridge Drive  
Pleasanton, California 94588

**Re: Thoratec Corporation**  
**Form 10-K for the fiscal year ended January 2, 2010**  
**Filed February 24, 2010**  
**Form 10-Q for the period ended October 2, 2010**  
**File No. 0-49798**

Dear Mr. Smith:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Form 10-K for the year ended January 2, 2010

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 38

Contractual Obligations, page 47

1. We note from your disclosures on page 60 that you have recorded a liability for your deferred compensation plan. Please revise future filings to provide details regarding the timing on any future payments under your deferred compensation plan. To the extent that you cannot reasonably estimate such payments, please revise future filings to clearly disclose why you are unable to make such estimates. Refer to Item 303(a)(5) of Regulation S-K.

Note 1. Operations and Significant Accounting Policies, page 57

– Revenue Recognition and Product Warranty, page 60

2. We note your disclosure here that sales to distributors are recorded when title transfers, which is consistent with the first sentence of your revenue recognition disclosure. Please revise future filings to clarify this disclosure by explaining when title transfers on your sales to distributors. Please also revise to clarify how you consider the other criteria for revenue recognition on sales to distributors. Discuss any post-shipment obligations or pricing considerations for any sales to distributors.

Note 10. Long-Term Debt, page 71

3. We note that in accordance with FASB ASC 470-20 (FSP APB 14-1) you revised your accounting for convertible debt instruments that may be settled in cash. As necessary, please ensure that in future filings your Independent Registered Accounting Firm's report describes any material changes in your financial statements that resulted from a change in accounting principle. Refer to paragraph 8 of PCAOB Auditing Standard 6.

Form 10-Q for the quarter ended October 2, 2010

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 25

Critical Accounting Policies, page 27

Valuation of Share-Based Awards, page 29

4. We note your disclosure that in computing your expected volatility in valuing your option awards you use a combination of historical and market-based implied volatility. This appears to be a change from your policy at the end of fiscal year 2009 in which you disclose that you use historical volatility for determining your expected volatility. Please revise your future filings to include a discussion of the basis for your conclusions regarding the extent to which you used historical volatility and implied volatility. Please also summarize your evaluation of the factors in Question 3 and Question 6 of SAB Topic 14.D.1. Refer to Question 5 of SAB Topic 14.D.1.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;

- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Eric Atallah, Staff Accountant at (202) 551-3663 or me at (202) 551-3643 if you have questions regarding comments on the financial statements and related matters. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant at (202) 551-3643 with any questions.

Sincerely,

Kevin L. Vaughn  
Accounting Branch Chief