

Mail Stop 6010

August 4, 2006

W. Bruce Comer, Chief Executive Officer
Diametrics Medical, Inc.
6245 Bristol Parkway #263
Culver City, California

Via U S Mail and FAX [(310) 670-4107]

Re: Diametrics Medical, Inc.
Form 10-KSB for the fiscal year ended December 31, 2005
Form 10-QSB for the fiscal quarter ended March 31, 2006
File No. 0-21982

Dear Mr. Comer:

We have reviewed your filings and have the following comments. We have limited our review to only your financial statements and related disclosures, and do not intend to expand our review to other portions of your documents. Where indicated, we think you should revise your documents in response to these comments in all future filings with the Commission. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Form 10-KSB for fiscal year ended December 31, 2005

Financial Statements

Statements of Cash Flows, page 16

1. Please tell us about the income on liquidation of discontinued operations in fiscal 2004 and why this is included as an addition to arrive at net cash used in operating activities.

General

2. We note that you filed your interim reports on Form 10-Q for the interim periods in fiscal 2005 but changed to file your annual report on Form 10-KSB. Please tell us how you comply with the requirements of Item 10(a)(2) of Regulation S-B with regard to entering and exiting the small business system.
3. We see you are reporting as a development-stage company. In future filings please revise to disclose the inception date of your development stage and present cumulative since inception information in the statements of operations and the statements of cash flows. In addition, each issuance should be separately disclosed in the statements of stockholders' equity. Please refer to SFAS 7.

Note 2 – Restatement, page 18

4. Please tell us why fiscal 2004 amounts in the statements of operations and statements of cash flows were not restated. In addition, clarify the specific conversion features that resulted in the convertible senior secured notes not being considered conventional and being accounted for as a derivative liability. Tell us the assumptions and methodologies you used to value this liability. In addition, clarify why the derivative liabilities were removed from the balance sheet at December 31, 2005.

Note 5 – Borrowings, page 24

5. Please tell us how you determined the loss to be recognized from the amendments and modifications of the terms related to the \$7.3 million notes and warrants under EITF 96-19. Provide details of the assumptions and methodologies used in the valuation. In addition, tell us how you determined the amount of the significant discount that was amortized to interest expense for fiscal 2005.

Note 11- Fourth Quarter Adjustments, page 28

6. Please tell us about the \$6.8 million first quarter adjustment for the amortization of discount on convertible notes and how this amount was determined.

Note 12- Supplemental Disclosures, page 28

7. Tell us where you have disclosed the accounting for the exchange offering that resulted in the net increase to additional paid in capital of \$12,325,209. Tell us how this increase to additional paid in capital was determined.

Item 8.A. Controls and Procedures, page 30

8. We reference the disclosures in Note 2 about the restatement of your previously issued financial statements. Please tell us the remediation efforts that enabled you to conclude that your disclosures controls and procedures were effective as of December 31, 2005.

Form 10-QSB for March 31, 2006

9. In future filings clarify the difference between the term "Accumulated Deficit" on the balance sheet and the term "Deficit Accumulated...." on the statements of operations and of cash flows.

Mr. W. Bruce Comer

Diametrics Medical, Inc.

August 4, 2006

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a response letter that keys your responses to our comments and provides the requested information. Confirm that you will comply with these comments in all future filings with the Commission. Detailed response letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your responses to our comments and the requested information.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing reviewed by the staff to be certain that the filing includes all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed decision. 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 connection with responding to our comments, please provide, in writing, a 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Jeanne Bennett at (202) 551-3606, or me at (202) 551-3676, if you have questions regarding our comments. In our absence you may contact Martin F. James, Senior Assistant Chief Accountant at (202) 551-3671.

Sincerely,

Brian R. Cascio
Accounting Branch Chief