From:	Andy Moskowitz <andymoskow@gmail.com>
Sent:	Thursday, May 19, 2011 9:20 AM CDT
To:	Eric Sugalski <eric@bostondevice.com>
Subject:	Re: Fusion Device - Prototype Design & Fabrication

Dear Eric,

With regards to the device

1) there should be more space and more of a cavity for bone
2) try to reduce the dimensions of the width of the box you can do this by
   a) reducing the diameter of the screw head (should reduce at least 2mm)
   b) Using the side indentations – that are on some of the solidwork files I sent should (reduce at least 2mm)
   c) Where possible try and cutting out unneeded space
3) this should be tapered inward – look at the other solidwork files (without the expansible mechanism)this means that the part with the entry of the screws is 11 or 12 mm the rest should be 10x10 width and height
4) make sure all surgical angles are 25 degrees are less
5) the depth should be 17 or 18 mm
6) the end part should be bullet shaped

with regards to prototyping. You should try http://www.rpdg.com/ I don't know what their price would be on a single part but I had complex parts prototyped in titanium an it was $180 times 10 so you should try their. . you can get quotes in deffirent materials if you need to.
Another one you can try is http://quickparts.com/ I never got a quote from them but they look OK.
If you can not get a reasonable quote then you can go with SLS

On Thu, May 19, 2011 at 8:21 AM, Eric Sugalski <eric@bostondevice.com> wrote:

Hi Nathan -

Thanks for the feedback. I believe we can reproduce the thru hole on both wedge pieces. There is a trade-off between the size of the hole and the mechanical strength of the wedge pieces. We'll try to find the optimal size. Originally, I thought only small pockets were needed for the bone paste, which are illustrated on the top and bottom of the wedge pieces. I understand now that the hole needs to go through the entire device for the biological bond. We'll make these updates and resend to you and Andy for review.

If there are any other geometric changes required, please let me know.

Also, do you have any thoughts related to the fabrication materials / methods? What will be your intended use with the prototype? Merely a fit / finish check, or are you looking to conduct more extensive testing? This may impact the materials, processes and associated fabrication costs. Please let me know your thoughts here when you get a chance.

Thanks,

Eric

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Eric Sugalski
Boston Device Development, Inc
office - (617) 279-0057 x703
mobile - (617) 852-6622
www.bostondevice.com

On Wed, May 18, 2011 at 9:30 PM, Nathan Moskowitz <nmosk@hotmail.com> wrote:

Hi Eric,

The device , if you look at our original design, has a central cavity which can be filled with bone. The bone must be able to fuse with the vertebrae above and below thus establishing a biological bridge. This device has a cavity on one side. The blue shaded area has no opening for bone. This renders the device useless in that it will not allow for biological fusion. Thus a central cavity must exist, just like our original design, which will enable bone contact from one vertebral body to the othe, above and below the devicer. The bigger the cavity the more functional.

With respect to the dimensions, Andy will e-mail you separately.

Thanks,
Nathan

From: eric@bostondevice.com
Date: Wed, 18 May 2011 14:24:37 -0400
Subject: Fusion Device - Prototype Design & Fabrication
To: nmosk@hotmail.com; andymoskow@gmail.com
CC: dschoon@bostondevice.com

Hi Nathan & Andy -

Attached is an e-drawing of the Fusion Device and drawings for the custom machined parts. We are getting a number of quotations on these parts, and we hope to have these back within a day or two. Due to the undercuts on the parts and the contour milling that will be required, we are anticipating that the machining costs may be on the high side. For evaluation purposes, do you think it would make sense to rapid prototype the parts through SLS rather than machining? There are a few grades of SLS that are very rigid (using glass / aluminum fill). Of course, the textures and appearance would be very different than you would have with a metal, but it may be sufficient for evaluation at a much lower cost than the machining. Please let me know your thoughts on the design and the fabrication when you have a moment.

Thanks,

Eric

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