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Subject: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Sat, 25 Jul 2009 06:55:43 GMT  
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I am trying to upload this model, and no matter what I do to fix it the manifold issue is not resolving itself.

I am modeling in maya 09.

I have a simpler model, that I was having the same error on and I resolved by doing a "cleanup" on it, and there is a checkbox for non-manifold geometry. I tried doing the same on this model, and it's not working.

Now I am sure this model is a complete mess, but it is what it is. It's basically a logo, or I call it a shield, that a bevel/extruded, at various depths.

I actually want it bent around a radius, and I know how to do that, but for complexity sake, I want to get this "flat" version of the file working first.

I would rather know where/what is causing the issue, rather than just having it fixed.

Thanks in advance!

#### File Attachments

1) [be\\_badge\\_flat\\_back\\_flat\\_logo.stl](#), downloaded 128 times

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [WiKKiDWidgets](#) on Sat, 25 Jul 2009 16:56:30 GMT  
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Hi Beeker;

I took a look at the model and the issue(s) are mostly holes all over the mesh.

Meshlab has a function that can help:

Filters >> Remeshing, Simplification, Reconstruction >> Close Holes

You will need to fiddle with the settings a little to get it to recognize the holes.

Alternatively, Blender can fill holes with a facing function.

To use this, First you would select the non-manifold areas by the keyboard command [CTRL+ALT+SHIFT+M].

Then, fill the holes (Or as Blender refers to it, add faces) with the keyboard command [SHIFT+F]

If you are still having issues after a while,.. let me know.

WiKKiD

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Tue, 28 Jul 2009 00:35:32 GMT  
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None of that worked, and when I select non-manifold it basically says 100% of the edges in my model are non-manifold, which doesn't make any sense whatsoever.

My model is made of bevel/extruded curves (with caps on both ends), with some minor boolean differences, to cutout shapes in the extruded objects. It's made of several objects, yes, but they are all closed, at least in maya they are.

I don't know blender well enough to get in there and see what the problem is. I barely know maya, but I know it better than blender.

I think something in my STL exporter is not telling the file format, and blender, and shapeways this.

I have also created a couple of variations of a much simpler model, made of a single shape, but it's made using the same exact techniques as this one and in maya, with the same stl exporter.

I have attached my latest attempt to cleanup the issues, but I still think there are major issues, I just can't see what they are, or how to fix them.

### File Attachments

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1) [be\\_badge\\_flat\\_back\\_flat\\_logo\\_tire\\_fix.stl](#), downloaded 131 times

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Tue, 28 Jul 2009 00:38:07 GMT  
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For reference I also rendered the object in maya, to show how it SHOULD look.

#### File Attachments

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1) [be\\_badge\\_flat\\_back\\_flat\\_logo\\_tire\\_fix.jpg](#), downloaded 151 times

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [WIKKiDWidgets](#) on Tue, 28 Jul 2009 02:07:39 GMT  
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Here ya go mate...

I repaired the model for you. This is uploadable as is, but you may want to address the scale of it.

X:7.143  
Y:5.512  
Z:0.173

It's very thin on the Z axis no matter what unit of measurement you use.

Using Blender and the methods illustrated in the tutorial here:

[Repairing Non-manifold meshes with Blender](#)

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Tue, 28 Jul 2009 08:36:58 GMT  
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Wikkid,

Thanks for doing that work, but I realized the model I uploaded, was the flat version of my final piece of "art". I was also able to fix some oddities with the final artwork, by adding more vertices in one of my beveled curves.

Anyways, until this evening, before reading your PDF, I would have to say I was a complete noob

when it came to blender, and I still am. Except now I can pretty much fix this entire non-manifold issue within blender.

I am having trouble with one little area. I had another problem with another area, and I just merged the vertices. Since it was inside the "object" I didn't care.

I started at 700+ vertices, and now I am down to 400 something. I will probably, but hopefully not have a few unfixed vertices.

One thing that was confusing in your tutorial/pdf was the need to move the area needing fixing to a different layer. I just don't need to do that, so I kind of skipped that step. I also noticed that if I had two sets of vertices close to each other, and tried to fill them, it would fill them incorrectly. So I had to select one set, unselect all, re-select non-manifold, and then eliminate all but those second set of vertices. A little tedious, but when each set of vertices contains 50 vertices, it goes pretty quick.

I can see how you can make quick work of this with some practice.

Thanks again!

I was all but lost, but your PDF has taught me how to fish a little, as much as I appreciate the fish you gave me, it doesn't help me learn the tool.

I will keep you posted. This art really has no general consumption value, since it's for a bicycle shop, and it's very specific, but otherwise I would offer the artwork up for others to purchase.

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [WIKKiDWidgets](#) on Tue, 28 Jul 2009 09:24:08 GMT  
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No problem at all beeker. I'm glad the tutorial was useful.

The reason I did the 'Move to layer' portion of the tutorial was more to help people understand what a non-manifold issue looks like than anything else.

i would much rather folks were able to fix their own models of course, but I don't like the idea of someone spinning they're wheels for days when I can fix it for them in a few minutes. I think from now on I will put the tutorial in front of the user first, and if thye still need help, then I will see what I can do.

Peace...

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Tue, 28 Jul 2009 19:11:23 GMT  
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Wow, I am pretty proud of myself, and thanks for your help and tutorial.

I can get around blender a little better now, and it's pretty intuitive.

I uploaded my fixed manifold model (it had 0 manifold vertices), and then I had a normals issue, so a I re-calculated the outer normals, and bam it worked.

Model looks great, even in the preview, but now I think I have a scaling issue, but maybe my calculations are off.

This thing is cheap! so I would be stupid not to just see what it looks like and have a ball.

I am wondering about getting this made into stainless steel, but that's a different topic.

Thanks again for your help!

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [WiKKiDWidgets](#) on Tue, 28 Jul 2009 19:53:11 GMT  
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You should be! Congrats!

Here is your next mini Tute: Scaling in blender

If you selecct your model, and then hit the [N] key, it will bring up a pop up window that contains your numeric notation. (thats what I call it) Click the button that says [Link Scale] then over where you see [DIMX DIMY DIMZ] change one of those to be the dimensional value in Milimeters.

I.e. If you want it to be 40mm wide then change the DIMX to 40 and hit [Enter] on your keyboard. the entire model will scale relative to the value you input. then just choose Millimeters for your scale when you upload it.

Easy as pie.... and pie is pretty easy.

\*munch munch munch\*

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [beekerstudios](#) on Tue, 28 Jul 2009 20:02:22 GMT  
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Cool thanks, might have to completely redo all this non-manifold stuff, if my calculations are off, which I think they are. I think I bent it around too small of a radius, and therefore not only is the scale off, but a major part of it is off, and not fixable by a simple scaling.

At \$5 I wasn't going to argue, it's just cool that I did all that work, and it's going to be made into something physical.

Stoked!

The issue is that this is a badge for a bicycle head tube, and I think my calculations for the radius/diameter are off.

Either way it's a prototype of what's possible, and going through the process of fixing one of these is a good lesson. If I had to do it again, I know I could do it.

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Subject: Re: Manifold Error on combined multi-object model  
Posted by [WiKKiDWidgets](#) on Tue, 28 Jul 2009 20:16:06 GMT  
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You can do that in Blender as well. (It's called the Warp tool)

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