
Subject: tube and rod rotation clearance

Posted by [thomashuang.net](#) on Mon, 26 Sep 2011 23:00:52 GMT

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Hello,

i have a design with 2 separate parts that need to rotate freely one inside the other, like a rod and tube, on black strong flexible. I was wondering what is the clearance to allow for this? I can't have too much play, it needs to be tight but rotate without much resistance. I was thinking something like 0.15mm all around? or would i need more?

Thanks

Subject: Re: tube and rod rotation clearance

Posted by [stop4stuff](#) on Tue, 27 Sep 2011 06:24:08 GMT

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If the moving part is to be printed in situ, you're going to be looking at 0.7-0.9mm gap, but using a few design technogies you can bring the gap down to 0.5mm, more info here;

http://www.shapeways.com/tutorials/designing_mechanical_parts_3d_printing_the_whoosh

However, if the parts are to be printed seperately 0.1mm all round gap would allow for print tolerances, but if you're willing to do some post production work, you can make it 0mm and adjust as needed with tools.

Subject: Re: tube and rod rotation clearance

Posted by [thomashuang.net](#) on Tue, 27 Sep 2011 07:38:02 GMT

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These are 2 separately printed parts. I've just submitted a job with 0.2mm, but I'll try 0.1mm next time. thanks

Subject: Re: tube and rod rotation clearance

Posted by [thomashuang.net](#) on Tue, 04 Oct 2011 05:34:55 GMT

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I just got my parts which are seperate with 0.2mm clearance.

In will insert but not turn. There are parallel edges, 90 degree corners, and 270 degree corners. There was enough clearance for the parallel edges and 270 degree corners and probably 0.15mm would have been enough, but the 90 degree corners seem to be expanded, and I might need 0.3mm.

I had to shave the inside corners to get it to rotate but there's still a lot of friction.

File Attachments

1) [IMAG0437.jpg](#), downloaded 138 times
