RAPID PROTOTYPING ROBOT PARTS

Martyn Pittuck

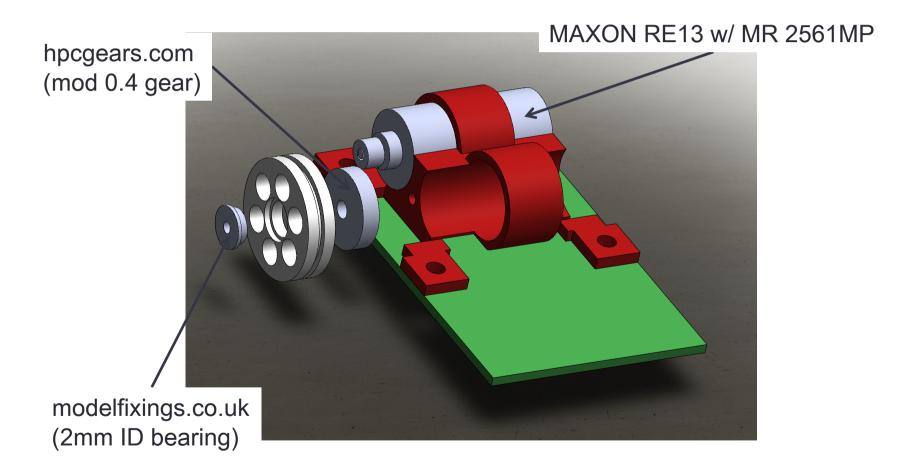
Side 1 of 15

Introduction

- Rapid Prototyping
- Shapeways
- Materials & Processes
- Software

• + Hands on examples

Rapid Prototyping



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Side 3 of 15

Shapeways

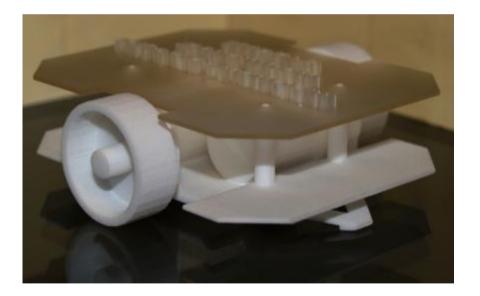
- Wide Range of materials
 - Plastics
 - Stainless Steel
 - Ceramics
 - Glass
- Pricing by volume
- Large community
- There are others!
 - 3dprint-uk.co.uk
 - 3dcreationlab.co.uk
 - (See google/bing/lycos)



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White, Strong and Flexible

- Nylon 12
- Price \$1.50 setup + \$1.40 per cm³
- 0.7mm minimum wall thickness
- 0.2mm minimum detail level
- Max size 660x350x550mm
- *The* engineering materialBUT...



White, Strong and Flexible Process

<u>http://www.youtube.com/watch?</u>
<u>v=aBNGnfoGGfQ&list=UUjq8uE1Ca4q0JDIfZB6VHSA&in</u>
<u>dex=22&feature=plcp</u>

Detail

- VeroWhite FULLCURE 830
- Price \$2.50 setup + \$2.99 per cm³
- 1.0mm minimum wall thickness
- 0.2mm minimum detail



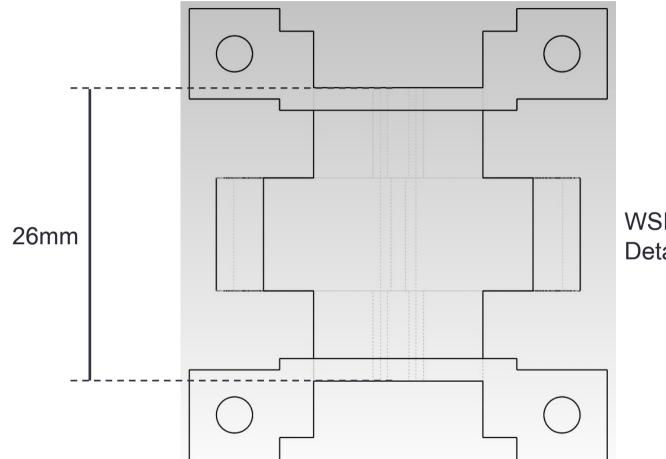
Side 7 of 15

Detail Process

<u>http://www.youtube.com/watch?</u>
<u>v=IM8WU8JfyI8&list=UUjq8uE1Ca4q0JDIfZB6VHSA&ind</u>
<u>ex=21&feature=plcp</u>

4/22/12

Rulers

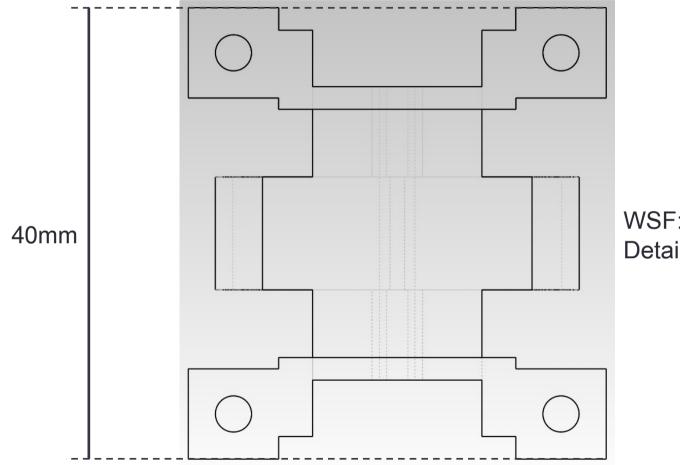


WSF: 26.22mm Detail: 26.10mm

Side 9 of 15

4/22/12

Rulers

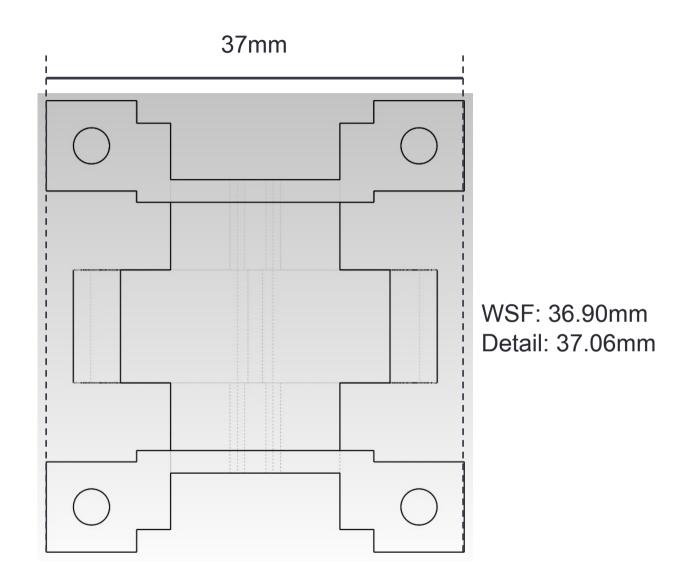


WSF: 40.20mm Detail: 40.02mm

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Side 10 of 15

Rulers

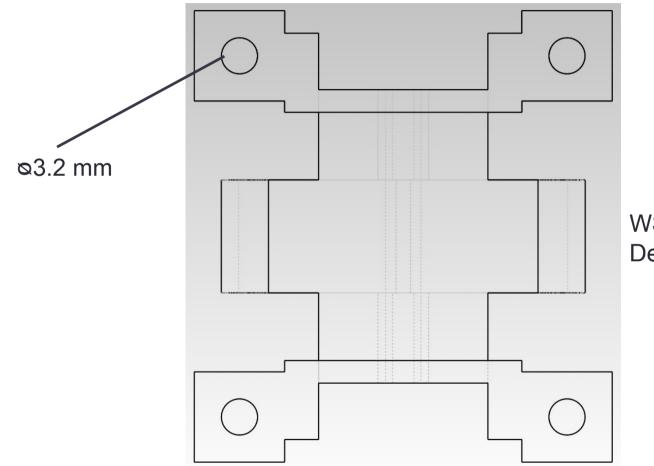


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Side 11 of 15

4/22/12

Rulers



WSF: 2.96, 3.22mm Detail: 3.10, 3.12mm

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Side 12 of 15

Software

- Solidworks (Many Monies)
- Alibre (\$200+)
- ViCAD (\$99+)
- Google Sketchup (Free)
- Blender (Free)

Conclusions

- Detail is king... Use CAD software...
 - More next year?

Questions?



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Side 15 of 15