

# ♥ HG3D Broken Gravestones ♥

Gravestone  
1

Gravestone  
2

Gravestone  
3



Estimated Print time: 5 Hours 52 Minutes  
Estimated Filament Used: 2797.61mm

## ♥ Contents ♥

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- ✦ Print Settings
- ✦ Tools Required

# ♥ Recommended Settings ♥

## Speed for print moves

Perimeters:	42	mm/s
Small perimeters:	22	mm/s or %
External perimeters:	32	mm/s or %
Infill:	62	mm/s
Solid infill:	42	mm/s or %
Top solid infill:	22	mm/s or %
Support material:	52	mm/s
Support material interface:	100%	mm/s or %
Bridges:	22	mm/s
Gap fill:	42	mm/s

## Speed for non-print moves

Travel: 128 mm/s

## Modifiers

First layer speed: 80% mm/s or %

## Acceleration control (advanced)

Perimeters:	0	mm/s <sup>2</sup>
Infill:	0	mm/s <sup>2</sup>
Bridge:	0	mm/s <sup>2</sup>
First layer:	0	mm/s <sup>2</sup>
Default:	0	mm/s <sup>2</sup>

## Autospeed (advanced)

Max print speed:	100	mm/s
Max volumetric speed:	0	mm <sup>3</sup> /s
Max volumetric slope positive:	0	mm <sup>3</sup> /s <sup>2</sup>
Max volumetric slope negative:	0	mm <sup>3</sup> /s <sup>2</sup>

## Infill

Fill density:	5% ▾	%
Fill pattern:	Rectilinear ▾	
Top/bottom fill pattern:	Rectilinear ▾	

## Reducing printing time

Combine infill every: 1 layers  
Only infill where needed: ☐

## Advanced

Solid infill every: 0 layers  
Fill angle: 45 °  
Solid infill threshold area: 0 mm<sup>2</sup>  
Only retract when crossing perimeters: ☐  
Infill before perimeters: ☐

## Layer height

Layer height: 0.05 mm  
First layer height: 0.2 mm or %

## Vertical shells

Perimeters: 3 (minimum)  
Spiral vase: ☐

## Horizontal shells

Solid layers: Top: 6 Bottom: 6

## Quality (slower slicing)

Extra perimeters if needed: ☐  
Ensure vertical shell thickness: ☒  
Avoid crossing perimeters: ☐  
Detect thin walls: ☐  
Detect bridging perimeters: ☒

## Advanced

Seam position: Rear ▾  
External perimeters first: ☐

## Support material

Generate support material: ☐  
Overhang threshold: 0 °  
Enforce support for the first: 0 layers

## Raft

Raft layers: 0 layers

## Options for support material and raft

Contact Z distance: 0.05 mm  
Pattern: rectilinear ▾  
With sheath around the support: ☒  
Pattern spacing: 2.5 mm  
Pattern angle: 0 °  
Interface layers: 2 layers  
Interface pattern spacing: 0.2 mm  
Interface loops: ☐  
Support on build plate only: ☐  
XY separation between an object and its support: 60% mm or %  
Don't support bridges: ☒  
Synchronize with object layers: ☐

## Skirt

Loops (minimum): 1  
Distance from object: 2 mm  
Skirt height: 1 layers  
Minimum extrusion length: 4 mm

## Brim

Brim width: 0 mm



# ♥ Recommended Settings ♥

**Infill**

Fill density: 5% %

Fill pattern: Rectilinear

Top/bottom fill pattern: Rectilinear

**Reducing printing time**

Combine infill every: 1 layers

Only infill where needed: ☐

**Advanced**

Solid infill every: 0 layers

Fill angle: 45 °

Solid infill threshold area: 0 mm<sup>2</sup>

Only retract when crossing perimeters: ☐

Infill before perimeters: ☐

**Layer height**

Layer height: 0.05 mm

First layer height: 0.2 mm or %

**Vertical shells**

Perimeters: 2 (minimum)

Spiral vase: ☐

**Horizontal shells**

Solid layers: Top: 6 Bottom: 6

**Quality (slower slicing)**

Extra perimeters if needed: ☐

Ensure vertical shell thickness: ☐

Avoid crossing perimeters: ☐

Detect thin walls: ☐

Detect bridging perimeters: ☒

**Advanced**

Seam position: Rear

External perimeters first: ☐

**Support material**

Generate support material: ☒

Overhang threshold: 0 °

Enforce support for the first: 0 layers

**Raft**

Raft layers: 2 layers

**Options for support material and raft**

Contact Z distance: 0.05 mm

Pattern: rectilinear

With sheath around the support: ☒

Pattern spacing: 2.5 mm

Pattern angle: 0 °

Interface layers: 2 layers

Interface pattern spacing: 0.2 mm

Interface loops: ☐

Support on build plate only: ☐

XY separation between an object and its support: 60% mm or %

Don't support bridges: ☒

Synchronize with object layers: ☐

**Speed for print moves**

Perimeters:	42	mm/s
Small perimeters:	22	mm/s or %
External perimeters:	32	mm/s or %
Infill:	62	mm/s
Solid infill:	42	mm/s or %
Top solid infill:	22	mm/s or %
Support material:	52	mm/s
Support material interface:	100%	mm/s or %
Bridges:	22	mm/s
Gap fill:	42	mm/s

**Speed for non-print moves**

Travel: 128 mm/s

**Modifiers**

First layer speed: 80% mm/s or %

**Acceleration control (advanced)**

Perimeters:	0	mm/s <sup>2</sup>
Infill:	0	mm/s <sup>2</sup>
Bridge:	0	mm/s <sup>2</sup>
First layer:	0	mm/s <sup>2</sup>
Default:	0	mm/s <sup>2</sup>

**Autospeed (advanced)**

Max print speed:	100	mm/s
Max volumetric speed:	0	mm <sup>3</sup> /s
Max volumetric slope positive:	0	mm <sup>3</sup> /s <sup>2</sup>
Max volumetric slope negative:	0	mm <sup>3</sup> /s <sup>2</sup>

**Skirt**

Loops (minimum): 1

Distance from object: 2 mm

Skirt height: 1 layers

Minimum extrusion length: 4 mm

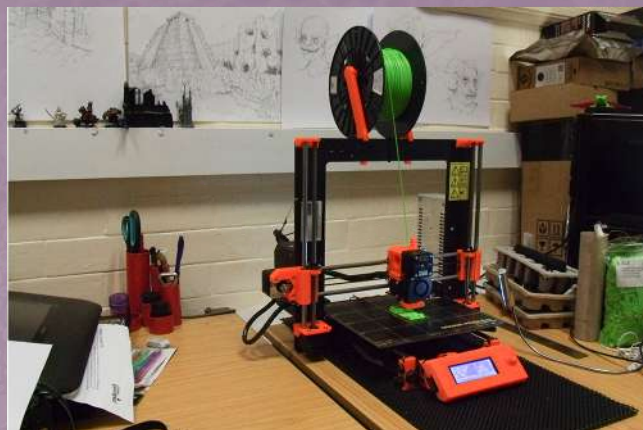
**Brim**

Brim width: 0 mm



## ♥ 3D Printer ♥

All Hobgoblin 3D Ltd products were test printed on a number of printers but have been optimised for use with the Original Prusa i3 Mk2. Printing information found later in this document will refer to the Original Prusa i3 Mk2 and related software, therefore settings may not be the same if the product is printed using a different system. It is recommended to always adhere to your 3D printer manufacturer's instructions. You should never leave a printer unattended, and never leave children under the age of 16 unsupervised with a 3D printer.



## ♥ Filament ♥

To print the files, filament will be required. The Original Prusa i3 Mk2 can print in a range of materials, at Hobgoblin 3D Ltd we tend to print using 1.75 PLA filament. This can be purchased in a range of styles and colours and can be readily sourced online.



## ♥ Bed Adhesive ♥

Most Hobgoblin 3D Ltd products will not require adhesive to be applied to the print bed, however it is advisable that the customer purchase some form of bed adhesive in case a print fails and extra adhesion is required. Hobgoblin 3D Ltd uses Pritt Stick glue for adhesion, however Blue painters Tape can also be used to provide a print surface for other printers, again always refer to you manufacturer's instructions





## ♥ Scraper ♥

A number of Hobgoblin 3D Ltd products will be difficult to remove from the print bed. For this reason it is suggested that the customer purchase a scraper so that they can get under the product and remove it from the print bed.



## ♥ Isopropyl alcohol or window cleaner ♥

The print bed will require intermittent cleaning in order to remove any applied glue. To achieve this without damaging the surface of the print bed it is suggested that Isopropyl alcohol is purchased. If you cannot source Isopropyl alcohol, window cleaner can be used in its place as per Prusa recommendations. If using a different printer you should refer to your manufacturers instructions.



## ♥ Allen Keys and Wrenches ♥

If you are printing using an Original Prusa i3 Mk2, then it is recommended that you have a range of Allen Keys and Wrenches. These will be used to tighten and re-align parts of the machine should they become loose or require adjustments. Other printers may require different tools to ensure adequate upkeep.





# Necessary Materials

## ♥ Craft knife and files ♥

Some products will require the removal of support material or general clean-up of printing errors. For this reason, a range of files and a craft knife may prove useful. Adult supervision is strongly advised should children under 16 be involved in the process.



## ♥ Super Glue ♥

A few Hobgoblin 3D Ltd products will need to be constructed from several separate parts. To assemble these files, Super Glue or an adhesive of similar strength will have to be utilised. Again adult supervision is highly recommended.

