#3DBenchy

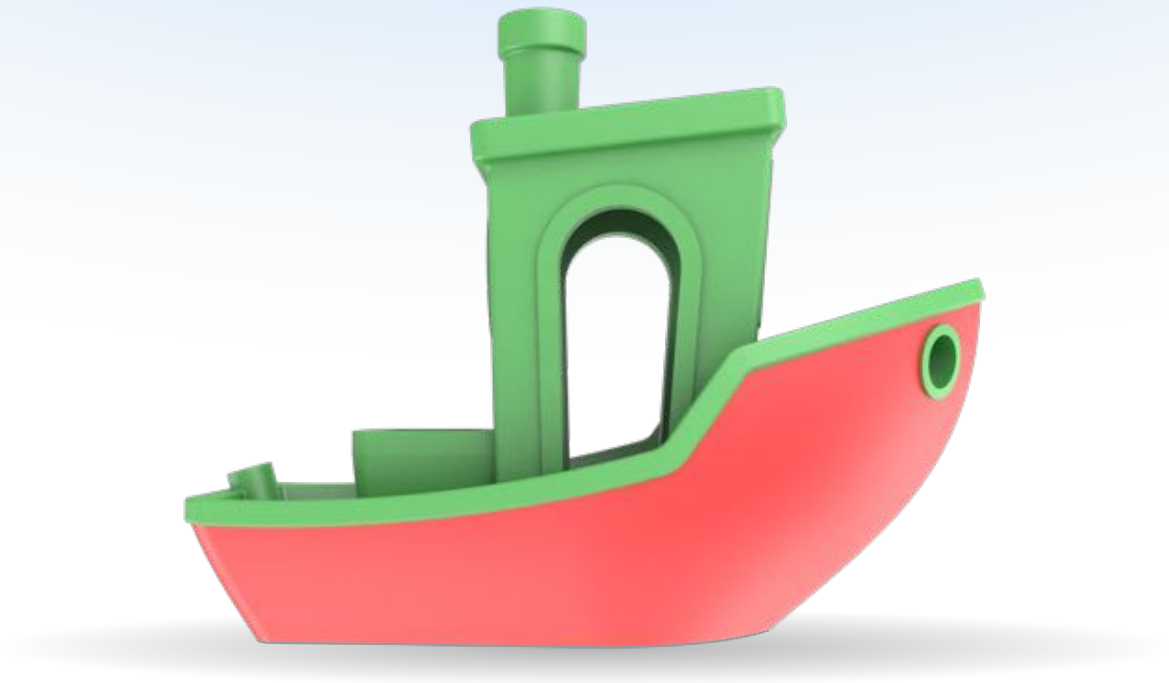
The jolly 3D printing torture-test

DOWNLOAD FROM

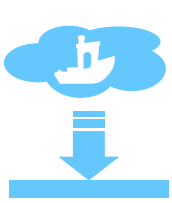
3DBENCHY.COM

A CREATIVE TOOLS PRODUCTION FOR BENCHMARKING 3D PRINTERS

#3DBenchy



#3DBenchy is 3D model specifically designed for testing and benchmarking 3D printers. It is a small recognizable object that you can download for free, make and share.

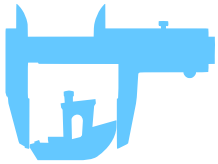


Download

Download the #3DBenchy high-res STL file from *3DBenchy.com/download* and import it into your printer's software.

3D-print

Make #3DBenchy with your 3D printer. Try out different resolutions, software settings and materials.



Analyse

Measure and analyse your #3DBenchy. Compare your print with the reference dimensions and other users' results.

Share

Share your results! Simply tag your images and videos on social media with **#3DBenchy**. Visit *3DBenchy.com/share* for more information.

Follow

See what others are printing and search for **#3DBenchy** on social media. Visit *3DBenchy.com/follow* for more information.

Learn more about 3D printing

Visit www.3DBenchy.com to learn all about 3D printing technologies through tutorials, videos and get free profiles for different 3D printers..

#3DBenchy is designed by Creative-Tools.com as a calibration and torture-test part for 3D printers.
To download the STL-file and read more about 3D printing please visit 3DBenchy.com.

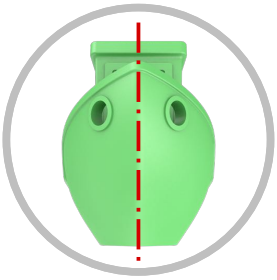
Features

#3DBenchy is designed to offer a large array of challenging geometrical features for 3D printers, and touch on different issues related to additive manufacturing.

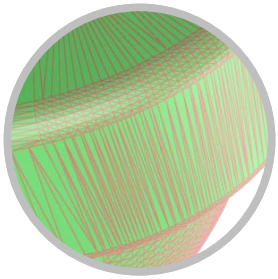
The 3D model is designed to print at 1:1 scale without support materials. It is challenging for most 3D printers but the small volume (15.55 cm^3) typically prints in well under two hours and does not require much material.

Read all about #3DBenchy's features at www.3DBenchy.com.

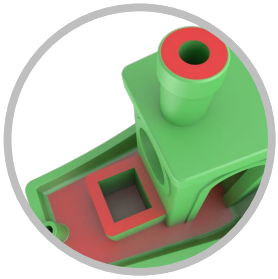
The hull is a large, smooth overhanging curved surface that is challenging to 3D-print and clearly reveals any surface deviations.



#3DBenchy is perfectly symmetrical which makes any skewness and warping easy to detect.



The STL file is triangulated at a very high resolution which yields smooth surfaces. The maximum deviation from the original CAD file is set to 0.001 mm.



The top surfaces of the deck, box and chimney are planar, horizontal and parallel to the bottom plane.

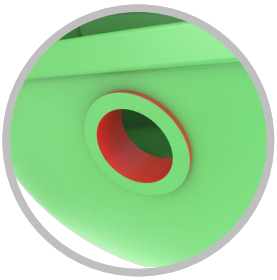
If you have a high-resolution 3D printer, this is where you can shine! The letters on the stern are less than 2 mm tall and the thickness of #3DBenchy's nameplate is just 0.1 mm.

The chimney is designed to define concentrical cylindrical shapes with inner and outer diameters. These clearly show deviations in roundness.

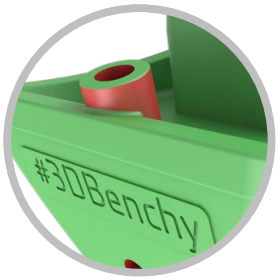
Overhang issues are the Achilles' heel of 3D printing. #3DBenchy offers several challenging areas such as in the difficult-to-reach inside of the bridge.

Low-slope-surfaces clearly show the layered structure of 3D printing. If printed horizontally, #3DBenchy's gunwale and roof of the bridge will reveal the layer-steps.

The rear window offers a large circular horizontal hole and the boat's wheel offers a round difficult-to-reach secluded feature.



The hawsepipe represents a small short horizontal hole and has a very thin flange against the hull.



The fishing-rod-holder provides a very small slightly-slanted blind hole.

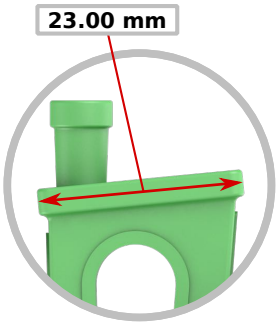
The shallow letters at the bottom of the boat clearly reveal typical first-layer-squashing.

Measure and calibrate

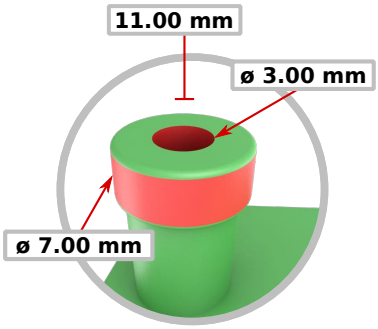
Use **#3DBenchy** to test and calibrate your 3D printer by adjusting hardware and software settings for optimal results.

The shape and size of this 3D model is designed to challenge 3D printers. Compare your #3DBenchy results with the dimensions illustrated below. These are easy to measure with a caliper.

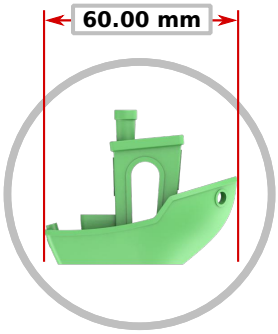
Print and check your 3D-printer's result for dimensional accuracy, tolerances, warping and deviations related to changes in printing parameters and material types.



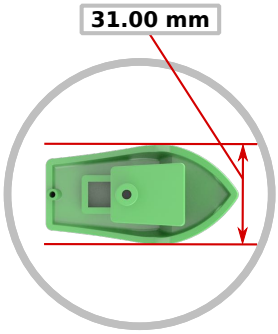
The front and rear surfaces of the roof are parallel at a distance of 23.00 mm.



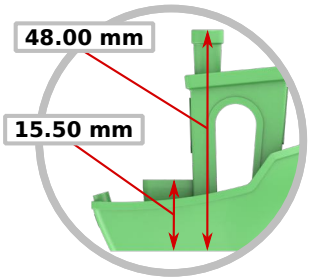
The cylindrical hole and outer top part of the chimney measure 3.00 and 7.00 mm in diameter. The depth of the blind hole measures 11.00 mm.



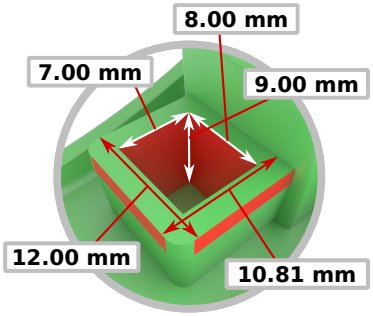
#3DBenchy's horizontal overall-length from bow to stern measures 60.00 mm.



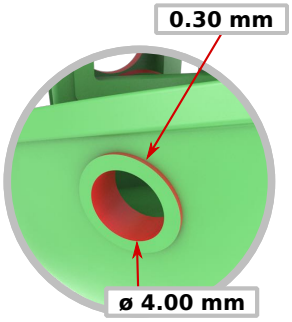
#3DBenchy's horizontal overall-width from port to starboard measures 31.00 mm.



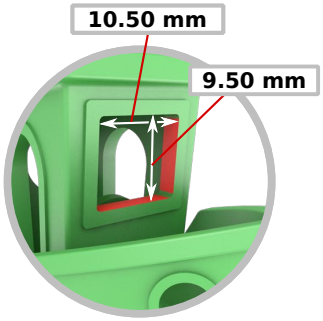
#3DBenchy's vertical overall-height from top to bottom measures 48.00 mm. The top of the box measures 15.50 mm above the bottom surface.



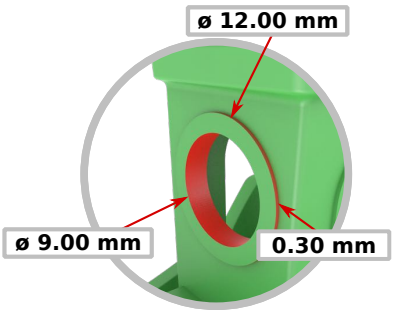
The box on #3DBenchy's deck measures 12.00 x 10.81 mm on the outside and 8.00 x 7.00 mm on the inside. The depth measures 9.00 mm.



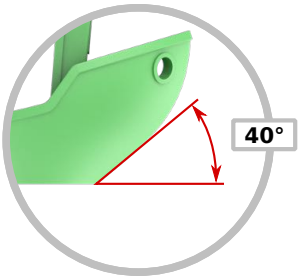
The inner diameter of #3DBenchy's hawsepipe measures 4.00 mm. The depth of the flange against the hull is 0.30 mm.



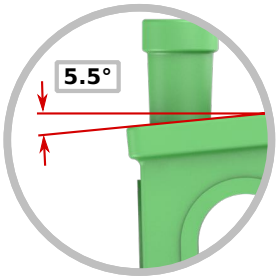
The rectangular front window measures 10.50 x 9.50 mm. Its parallel inner surfaces are horizontally cut into the bridge.



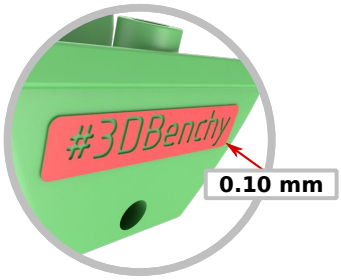
The inner diameter of the cylindrical stern window measures 9.00 mm. Its outer diameter measures 12.00 mm. The flange's depth is 0.30 mm.



#3DBenchy's high-cain spoon bow has a 40° overhang angle to the horizontal plane.



The roof of the bridge slopes at a 5.5° angle to the horizontal plane.



The sign and small letters at the stern are extruded at 0.10 mm.