

About 3D Systems

In 1986, 3D Systems founded the rapid prototyping industry and became the world leader in this field. Since 1999, the company has moved to expand the horizons of its technology into direct manufacturing. 3D Systems, the solid imaging companySM, provides digital imaging solutions that transform virtual computer designs into physical models. As a result, manufacturers are able to condense the time it takes to bring new products to market, while improving quality and reducing costs. Compared to traditional handcrafting or machining methods, solid imaging enables users to develop and maintain a critical competitive edge.

3D Systems' solid imaging technologies are used worldwide to generate product concept models, functional prototypes, master patterns for tooling and end-use production parts for direct and indirect manufacturing. The company's systems utilize patented stereolithography, selective laser sintering, direct composite manufacturing and 3-D printing processes to fabricate physical objects using input from computer-aided design and manufacturing software, or 3-D scanning and sculpting devices.

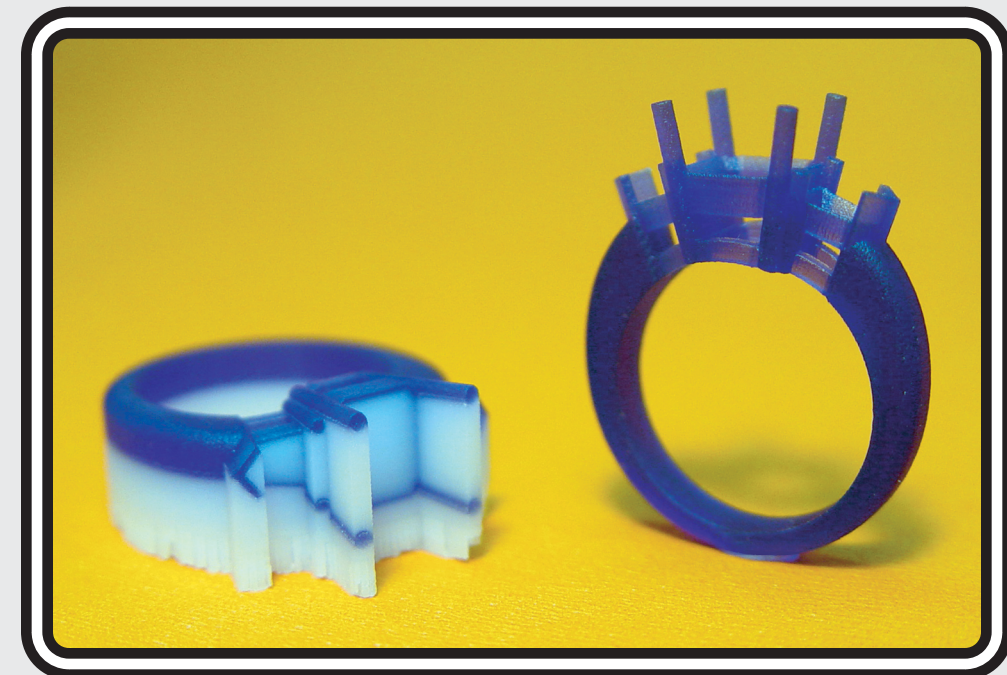
A tightly integrated package combining hardware, software, materials and process gives 3D Systems one of the broadest ranges of solid imaging solutions in the world. Its comprehensive range of products consist of the SLA[®] (stereolithography) product line, the SLS[®] (selective laser sintering) product line, the MJM (multi-jet modeling) product line, and the Accura[®] material line which provides a breadth of prototype and manufacturing materials for all 3D Systems solid imaging systems.

Based in Valencia, California, 3D Systems (Nasdaq:TDSC) was founded in 1986 by Charles Hull, the inventor of stereolithography. The company serves customers in 80 countries, with offices in the United States, United Kingdom, Germany, France, Italy, China and Japan and maintains a 67,000 square-foot manufacturing facility in Grand Junction, Colorado.

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Part Finishing Guide

Removing supports from models printed with the InVision™ HR 3-D printer.



The following instructions provide the suggested methods of removing support material from models produced on the InVision™ HR 3-D printer.



Remove Print

When the build has completed, the display will read "REMOVE PRINT." Lift open the chamber door, unlatch the platform, and remove it from the machine. Install a clean, room temperature platform in the machine and close the chamber door. Next, push the Online button on the front panel and follow the prompts.



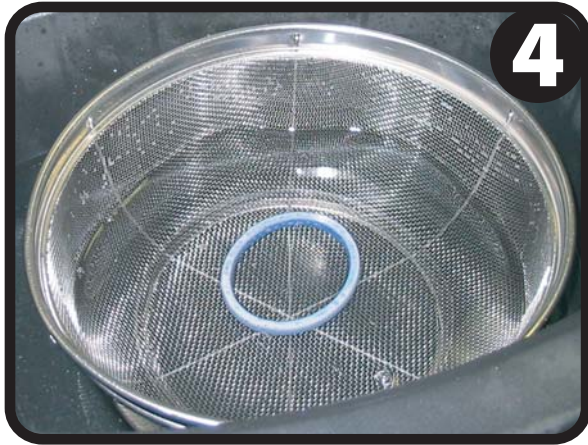
Chill Models/Patterns

Put the platform in a refrigerator for 5-10 minutes. Chilling the platform causes the models/patterns to release without the need of mechanical force. Carefully remove any remaining support material left on the platform with a razor blade or plastic scraper. Chilled platforms must warm to room temperature before being placed back into the InVision HR 3-D Printer.



Support Removal: InVision Finisher

Place models/patterns on absorbent towels in the InVision Finisher. Set the finisher to 70 °C (158 °F) and allow wax support material to melt. This generally takes 5 to 45 minutes depending upon the size of the models/patterns and the amount of support material. Proceed to step #5.



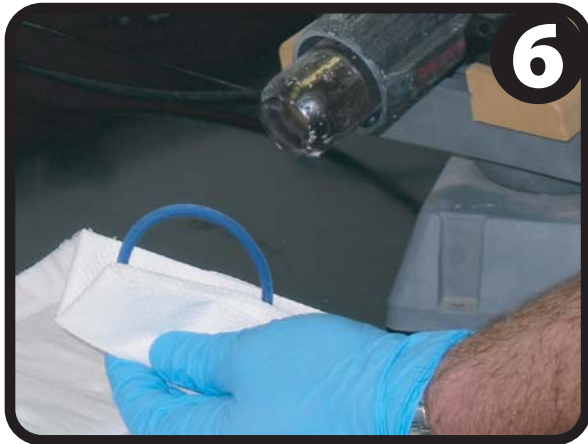
Support Removal: Wax Tank

This method uses low melting point paraffin wax which is available at most hobby stores. Preheat the wax tank to 105 °C (220 °F). Place the model/pattern into the basket and carefully lower basket into wax. Allow support material to completely melt away then promptly remove model/pattern from the wax tank. This generally takes 45 to 90 seconds.



Wax Removal: Blotting

Use a paper towel to absorb any wax which may have pooled or that has not dripped from the model/pattern. If all support material has been removed from the pattern proceed to step #8.



Wax Removal: Heat Gun

Some models/patterns may need to have the remaining wax removed using a variable temperature heat gun. Set heat gun to approximately 80 °C (175 °F). Hold model/pattern in front of the heat gun with a paper towel to absorb wax as it melts. For small models/patterns, use locking jewelers tongs to keep hands away from the heat gun.



Wax Removal: Air

While holding the model/pattern in front of the heat gun use low pressure compressed air (< 20psi) to remove any wax which may have become trapped in intricate details or internal cavities. Using high pressure air will chill the support material on the surface of the model/pattern before it can be removed.



Inspection

Inspect model/pattern for any residual wax that may need to be removed. If residual support wax is found, repeat steps 6 and 7 until the model/pattern is clean. Allow model/pattern to cool to room temperature.