



ZPRINTER® 350
ZPRINTER® 450

QUICK START GUIDE

Part Number 09569

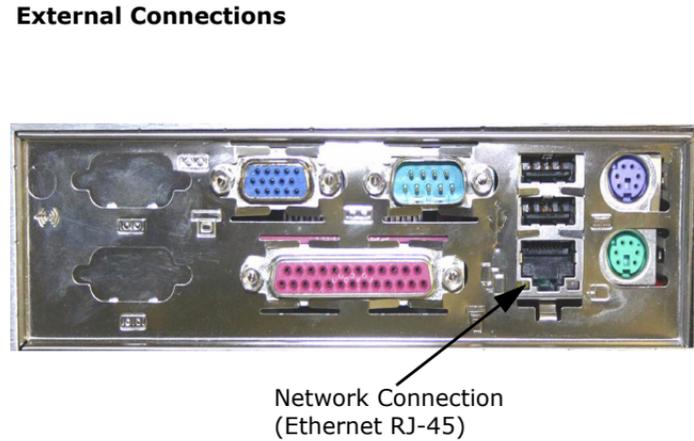
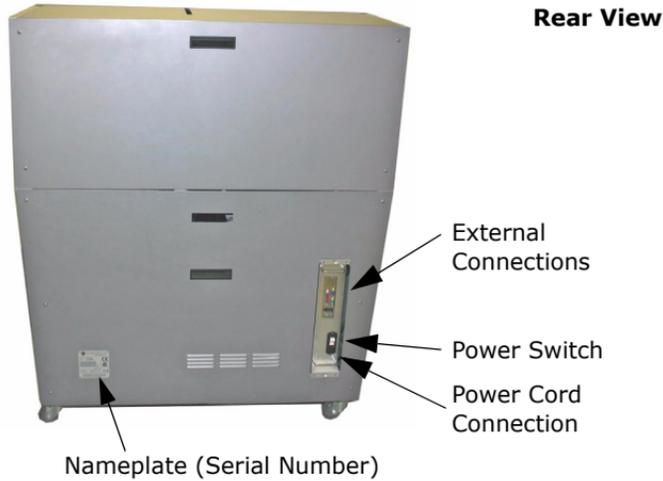
Rev. D



Z CORPORATION®

Overview - ZPrinter 350/ZPrinter 450





Push the Control Knob once to:

- Bring up the printer menu.
- Select a menu command.
- Start/Stop/Cancel a menu function.

Turn the Control Knob left/right to highlight menu items.

When selecting the **Raise/Lower Platform** commands, hold the Control Knob down to raise/lower the platform.

Welcome To The ZPrinter[®] 350/ ZPrinter[®] 450 Quick Start Guide

This Guide is intended as a handy reference for users who are familiar with their 3D printer and just need to print a part. The Guide assumes that:

- The ZPrinter is properly installed and running, and that no errors are displayed on the ZPrinter control panel.
- The ZPrint™ Software is installed and running, and is configured properly for your printer and choice of powder. For ZPrint installation instructions, see the **ZPrint™ Software Manual**.
- The printer is loaded with enough materials to complete the build.
- The printer is up to date on its routine maintenance.
- The printer is connected to the same network as the computer that is running ZPrint.

For more details, please refer to the **ZPrinter 350 Hardware Manual** or the **ZPrinter 450 Hardware Manual**. The Manual is included on the installation CD with your ZPrint software.

We encourage all customers to logon to our 3DP User Web site at zcentral.zcorp.com to learn more about 3D printing, materials, Best Practices, and post-processing techniques.

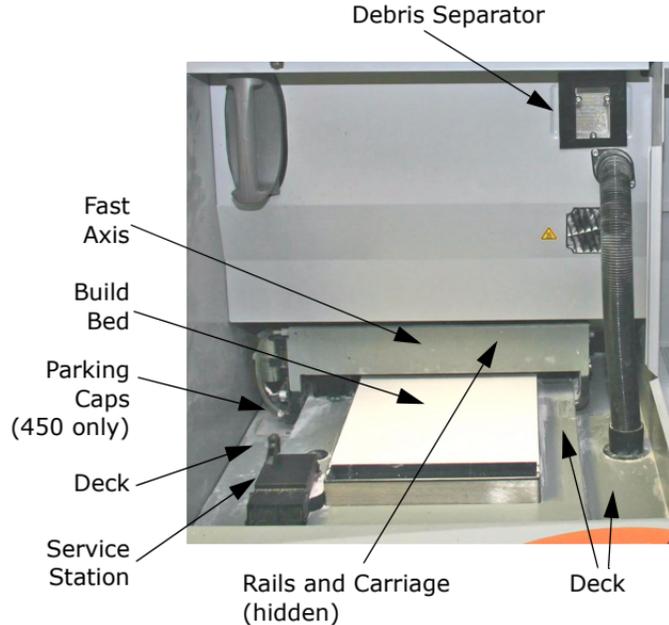
1. Steps To Print

Follow the steps outlined in the sections below to print your part.

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2. Check The Printer

Before you start your print job, it's important that you check the printer. ***A clean, well-maintained printer produces better parts, has less downtime, and needs fewer service calls.***



1. Check for loose powder in or around the Build Bed, Fast Axis, and Deck. If you need to clean these areas, follow the steps in **Section 6.1, "Vacuum Up Excess Powder"**.
2. Check that the Debris Separator, the Rails and Carriage, the Service Station and Parking Caps are clean. If any of these need cleaning, follow the procedures in these sections:
 - **Section 6.2, "Empty The Debris Separator"**
 - **Section 6.3, "Clean The Rails and Carriage"**
 - **Section 6.4, "Clean The Service Station"**
 - **Section 6.5, "Clean the Parking Caps (ZPrinter 450 only)"**

3. Setup Your Build And Print

Now that your printer is clean, you need to open up the 3D file using ZPrint, and select your printing parameters.

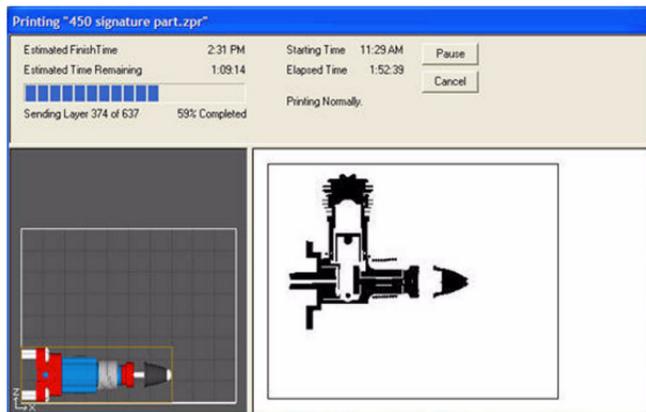
1. Open your file in ZPrint.
2. Select **File > 3D Print Setup**, or click  on the Toolbar, to open the 3D Print Setup dialog.
3. Check your printer settings to be sure the correct printer and powder are displayed.
 - If you need to change any settings, refer to the **Setup and Print the Build** section of the *Hardware Manual* for your printer.

4. Select **File > 3D Print**, or click  on the Toolbar, to open the **Printer Status** dialog.
5. Check the Printer Status window. If all the **Print Head**, **Powder**, and **General** items display **OK**, the **Print** button is enabled.
If any items need attention, the **Print** button is disabled.

- If the printer only needs a new print head, and you are comfortable performing the steps required, see the **Replace a Print Head** section of this Guide.
- Otherwise, refer to the **Additional Operations** section of the *Hardware Manual* for your printer. There you'll

find details on how to get the printer ready and clear any messages.

6. Select any Print Options for this build. If the part has delicate features, deselect the option for **Empty Build Piston After Printing** (ZPrinter 450 only).
7. Click **Print** to start your build.
8. The **Printing** dialog opens and reports the status of the print job for as the build progresses.
 - Click the **Pause** button to pause the current print job, Click again to resume printing.
 - Click the **Cancel** button to cancel printing this job.

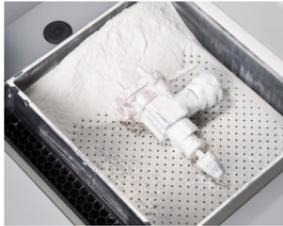


4. Gross Powder Removal

When the build is finished, you will need to remove the powder around the part.

4.1 Automatic Powder Removal (ZPrinter 450 only)

When the build is finished, the printer starts an automatic, heated drying cycle. A counter on the printer LCD counts down the time remaining before the part is dry.



After the drying cycle completes, the printer automatically removes excess powder by vibrating the Build Bed and vacuuming through the bottom of the Build Bed.

Remove the part and carefully transfer it to the Fine Powder Removal Chamber.

4.2 Manual Powder Removal

When the build is finished, the printer starts an automatic drying cycle (heated on the ZPrinter 450; unheated on the ZPrinter 350). A counter on the printer LCD counts down the time remaining before the part is dry.

1. Close the top cover, then select **VACUUM & DEPOWDER** on the LCD menu. Open the cover. The vacuum starts.

2. Vacuum powder from around the part. Be careful around delicate sections. Use the Control Knob to move the Build Platform up as needed.
3. Carefully move the part to the Fine Powder Removal Chamber.



5. Fine Powder Removal

Any loose powder on the part must be removed before proceeding with the post-processing steps.

1. Close the top cover, then select **VACUUM & DEPOWDER** on the LCD menu. The vacuum and compressor start.
2. Test the air flow against your hand and adjust as needed. Turn the Control Knob left to decrease pressure, or right to increase pressure.
3. Using the Air Wand, remove all remaining powder on the part.
4. Push the Control Knob once to turn the air compressor off. Return the Air Wand to its clip.
5. Allow the part to dry longer in the Fine Powder Removal Chamber while you perform the **Routine Cleaning** described in [Section 6](#).



6. Routine Cleaning After Every Build

After every build, it is important to clean your printer following the steps below.

A clean, well-maintained printer produces better parts, has less downtime, and needs fewer service calls.

Routine cleaning includes the following steps:

- Vacuum Up Excess Powder
- Empty The Debris Separator
- Clean The Rails and Carriage
- Clean The Service Station
- Clean the Parking Caps (ZPrinter 450 only)

6.1 Vacuum Up Excess Powder

Vacuum the Build Bed, the Fast Axis, and the Deck.

1. Close the top cover, then select **VACUUM & DEPOWDER** on the LCD menu. Open the cover. The vacuum starts.
2. Vacuum the following areas:
 - The top of the Fast Axis; also reach inside to vacuum the Rails and the Printhead Carriage.
 - The Build Bed (but not the Feeder side).
 - The deck around the Build Bed.
Note: Be careful not to vacuum inside the service station itself.
3. Press the Control Knob once to turn off the vacuum.

6.2 Empty The Debris Separator



1. Pull the Debris Separator out of its holder on the printer.
2. Empty the contents into a trash receptacle.
3. Use the soft brush found in the Accessory Kit to brush caked on powder from the screen.
4. Return the empty Debris

Separator to its holder. Be sure to push the Separator flat against the panel for a secure fit.

6.3 Clean The Rails and Carriage

1. Pull the Fast Axis out toward you.
2. Using a paper towel dampened with distilled water, wipe the top and bottom Rails. Move the Carriage back and forth as needed to clean the entire length of both rails.
3. Using a clean, dry paper towel, thoroughly dry both Rails.
4. Using a fresh paper towel, wipe the Carriage to remove any powder. Also clean the Build Bed and Deck.

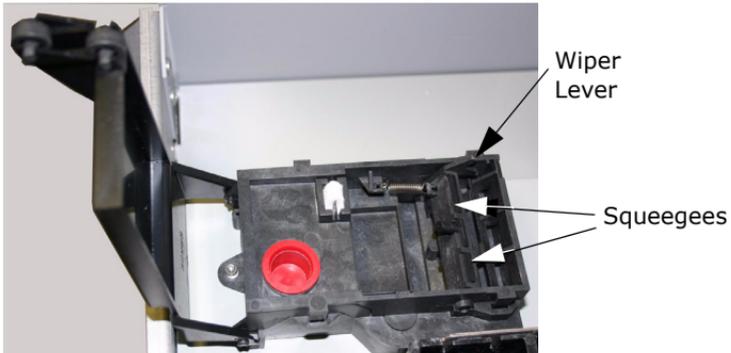


6.4 Clean The Service Station

Before you begin:

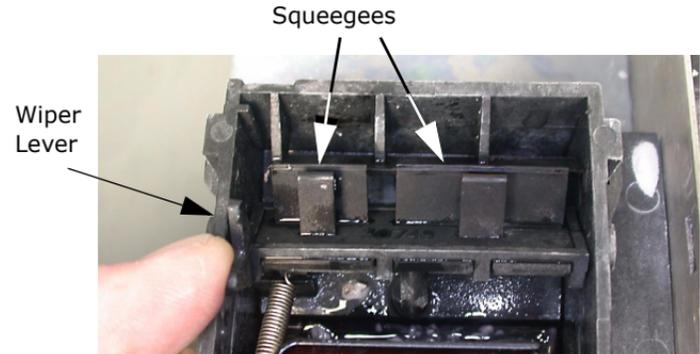
- Get several dry paper towels and a cotton swab.
- Get the squirt bottle filled with distilled water.
- Wear disposable gloves.
- Get the Pick and Syringe from the Accessories Kit.

1. Open the printer top cover and the Service Station cover.



2. Place paper towels around the Service Station. Also cover the front overflow and the Build Bed.

3. Pull the Service Station wiper lever all the way forward until the rubber squeegees are fully exposed. Hold the lever in this position while you clean the squeegees.



4. Squirt water on and around the squeegees.
Important: Don't get water in the front overflow or on the build bed.

5. Wipe the front and back of the squeegees clean. Use the Pick to scrape away any excess powder.

6. Thoroughly clean and dry the

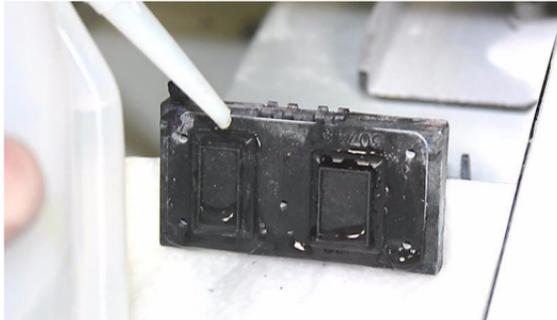
- Service Station
- Deck
- Build Bed
- Front Overflow.

7. Push the wiper lever back to its original position.

6.5 Clean the Parking Caps (ZPrinter 450 only)

Before you begin:

- Get several dry paper towels and a cotton swab.
 - Get the squirt bottle filled with distilled water.
 - Wear disposable gloves.
 - Get the Pick and Syringe from the Accessories Kit.
1. Lift the Parking Cap cover to a horizontal position and place dry paper towels underneath.
 2. Squirt the distilled water onto the caps. Do not squirt water onto the Build Bed.



3. Use a cotton swab and dry paper towel to wipe the caps clean. Use the pick if needed to remove any powder.



4. Remove the paper towels from under the caps and wipe up any excess water on the deck.
5. Be sure the Parking Caps are completely dry before starting your next build.

7. Post-Processing With Z-Bond

For complete instructions, refer to the **Hardware Manual** for your printer, or to our 3D User Web site at zcentral.zcorp.com.

7.1 Preparation

- Ensure the part is both completely dry and completely free of loose powder.
- Wear a lab coat or smock, safety glasses, and a pair of high quality gloves (supplied with the Z-Bond Dipping Kit) or 2 pairs of lightweight disposable gloves (supplied with the Starter Kit).
- Use a container large enough to fully submerge your part.
- Have paper towels ready for absorbing excess fluid.
- Work in a well-ventilated area.
- Place a piece of cardboard down in your work area and place a piece of wax paper over the cardboard for the part to dry on.

7.2 Dipping Method

Be sure the part is dry and completely free of loose powder before infiltrating.

1. Pour enough Z-Bond into the container to completely submerge the part.

2. Gently submerge your part into the liquid for several seconds.
3. Remove the part and quickly and thoroughly wipe off any excess liquid. Place the part on the wax paper.
Note: The part will get very warm and may emit visible vapor. These are normal by-products of the curing process.
4. Let the part dry and cool 15 - 30 minutes before handling.
5. Return any unused Z-Bond to its bottle for reuse.



7.3 Drizzle Method

Be sure the part is dry and completely free of loose powder before infiltrating.



1. Drizzle Z-Bond onto the part. Start with the most delicate areas first. Wet as much of the part as you can easily reach.
2. Reposition the part and repeat this process until the entire part is infiltrated.
3. Quickly and thoroughly wipe off any excess liquid. Place the part on the wax paper.
4. Let the part dry and cool 15 - 30 minutes before handling.

8. Replace a Print Head

For more details on performing these steps, refer to the **Additional Operations** section of the *Hardware Manual* for your printer.

1. On the Control Panel select **BUILD CHAMBER**, then **LOWER PLATFORM**. Lower the build platform about 6 inches below the top.
2. Select **PRINT HEAD** then **CHANGE PRINT HEAD** on the LCD menu. The fast axis moves to the service position.



3. Open the printer top cover. Open the carriage cover and lift the print head out of its slot. Properly recycle or dispose of the empty cartridge.

4. Using a paper towel dampened with distilled water, clean the carriage as appropriate for your printer. Dry with a clean paper towel.

5. Using an alcohol snap swab, clean the pogo pins for that head. Use additional swabs if needed.
6. Remove the new printhead from its packaging. *Be sure to pull the tape tab off of the new printhead.*



7. Insert the new printhead. Press down firmly on the top of the printhead, on the same side as the pogo pins, to securely fit the printhead into its slot.

8. Close the carriage cover by pressing down until you hear it click shut. Be sure the latch is

engaged.

9. Close the printer top cover. Select **CONTINUE** then **EXIT** on the LCD.

Where To Go For More Information

About Your Printer

For additional information, consult the **ZPrinter® 350 (or 450) Hardware Manual**. These are found on the CD that was shipped with your printer. They are also available through the **Help** function of ZPrint.

About ZPrint Software

For additional information, consult the **ZPrint™ Software Manual**. This is found on the CD that was shipped with your printer. It is also available through the **Help** function of ZPrint

All the printer and software manuals are also available on the **Support** section of our **3DP User Web site** at zcentral.zcorp.com.

About Post-Processing

Learn more about the different post-processing products that are available to use with your printer on the **Materials** section of our Web site at zcentral.zcorp.com.

About Materials and Consumables

Learn more about the various powders and binders that are compatible with your printer on the **Materials** section of our Web site at zcentral.zcorp.com.

Shop Online

To order consumable and materials, visit **ZShop** on our Web site at zshop.zcorp.com. If you are an international customer, you can order consumables/materials directly from your local service provider or reseller.

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This ZPrinter is covered by both US and foreign patents and patents pending. See a complete listing in the **Hardware Manual** for your printer.

Z Corporation Contact Information:

If you have any questions about your 3D Printer or the ZPrint/ZEdit Software, please contact your local Reseller/ Service Provider. If they are unable to help, contact us directly.

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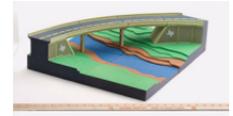
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