Head Optimization Wizard

Run this wizard when the condition of print heads is negatively affecting the quality of printed models. You can also run this wizard routinely, to maintain optimum printing.

The Head Optimization wizard includes two procedures:

- Head optimization
- Head replacement

Optimizing Print Heads

The wizard tests the effectiveness of the print heads, then calibrates them. The wizard attempts to optimize the heads - that is, to adjust them to the best working configuration for printing a uniform layer of material. Therefore, you should run the wizard whenever you suspect that there is a problem with one or more of the print heads.

During the optimization process, 32 samples are printed on the build tray. After carefully weighing each of them, you enter the weight in the wizard's data-entry screen. The wizard uses this data to optimize the heads.

If, during the optimization process, the wizard determines that a print head is faulty - or that it is negatively affecting layer uniformity with the current head configuration - the wizard instructs you to replace it. If this happens, you can continue the wizard - to replace the print head - or abort the wizard - to replace the head at another time.

Replacing Print Heads

When you know that you need to replace a print head, you select this option. The wizard guides you in the head-replacement procedure, and then performs the optimization procedure for *all* of the heads. In this way, you are assured that you achieve the best head configuration for printing uniform layers.

After replacing a faulty print head and performing the optimization procedure, there is a slight possibility that the wizard will instruct you to replace another head. This can happen if, after evaluating the new print-head configuration, the wizard determines that replacing a poor-quality head will result in a dramatic improvement in the print-head configuration - enabling you to print better-quality models.

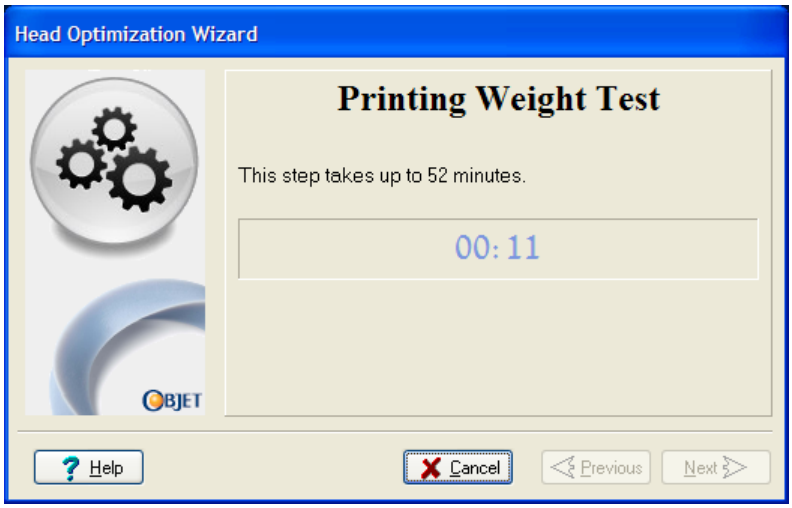
Select Wizard Procedure

Optimize all print heads (1 hour)
Select this option to test the effectiveness of the print heads and calibrate them. The wizard attempts to optimize the heads - that is, to adjust them to the best working configuration for printing models with uniform layers.

During the optimization process, 32 samples are printed on the build tray. After carefully weighing each of them, you enter the weight in the wizard's data-entry screen. The wizard uses this data to optimize the heads .

If, during the optimization process, the wizard determines that a print head is faulty - or that it is negatively affecting the head configuration - the wizard instructs you to replace it. If this happens, you can continue the wizard, to replace the print head, or abort the wizard, to replace it at another time.

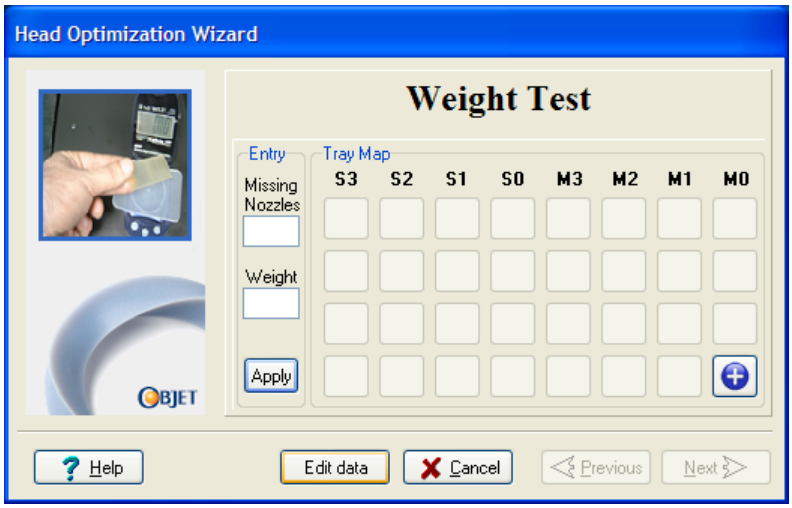
Replace faulty heads and optimize all heads (2.5 hours)
Select this option when you know that you need to replace a print head.
The wizard guides you in the head-replacement procedure, and then performs the optimization procedure for *all* of the heads. In this way, you are assured that you achieve the best working configuration for printing models with uniform layers.



Printing Weight Test

32 samples are being printed on the build tray. This can take up to 55 minutes.

By weighing each of the samples, the wizard will determine how to calibrate the print heads.



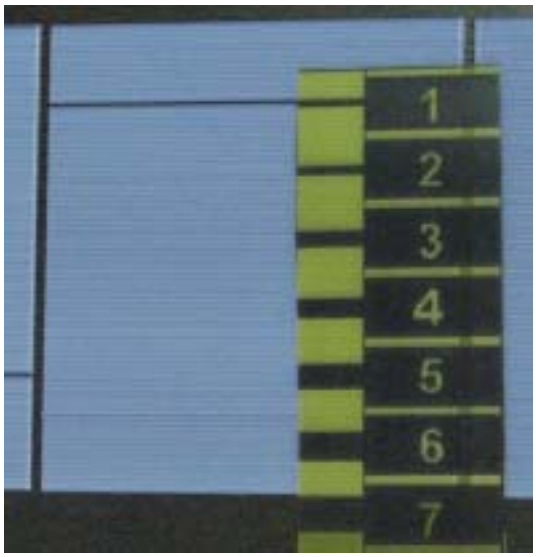
Weight Test Data Entry

In this step, you enter the data that describes the condition of each print head, after inspecting the printed samples.

Important: Enter the data for one sample at a time, as indicated by the  on the wizard screen.

1. Enter the number of faulty ("missing") nozzles.

Faulty nozzles are seen in Weight Test samples as a missing row of printed material.
Compare the height of the missing row with the lines printed on the "missing nozzles" ruler. Enter the number next to the line that most closely matches the height of the missing row.



2. **Carefully remove the sample, weigh it, and enter the weight in the wizard screen.**

   Be sure to remove and weigh the entire sample, even if it breaks into several pieces.

3. **Click Apply or press Enter.**

   The data-entry-indicator  moves to the next position.

4. **Repeat these steps for all 32 samples.**

To correct an entry:

1. Click **Edit data**.

2. Enter the correct data for the relevant print head.

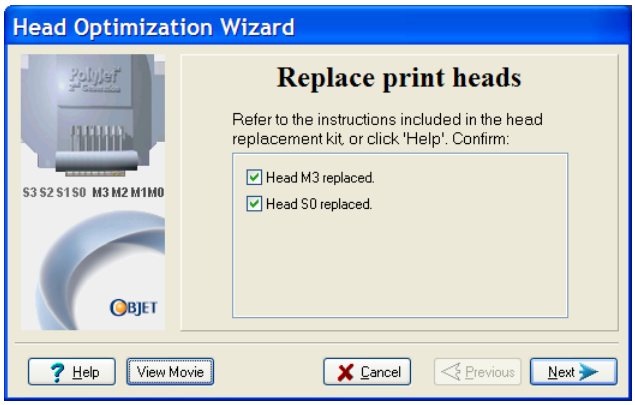
3. Click **Save**.

Weight Test Results

Based on the data you entered, the wizard has determined that you must replace a print head to ensure quality printing.

If you select **Replace defective head(s)**, the wizard continues by preparing the printer for print-head replacement.

Select **Abort wizard** if you want to replace print-head at another time.



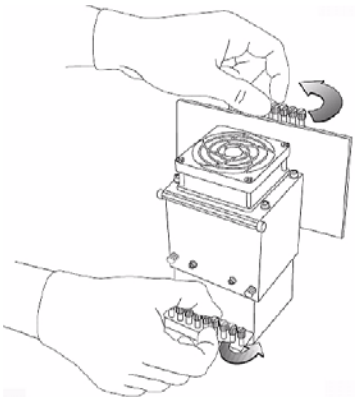
Print Head Replacement

To prevent damage to the print block, install the new head immediately after removing the defective one.

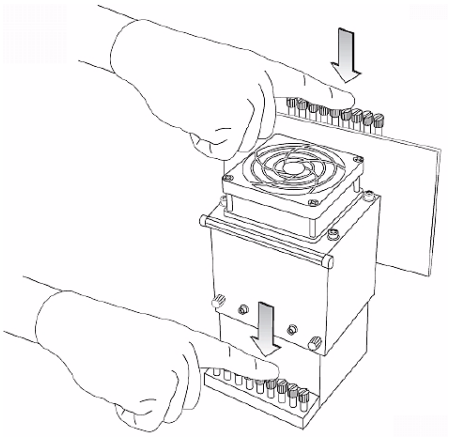
Removing the Defective Head

1. Put on safety gloves.
2. Open the printer cover.

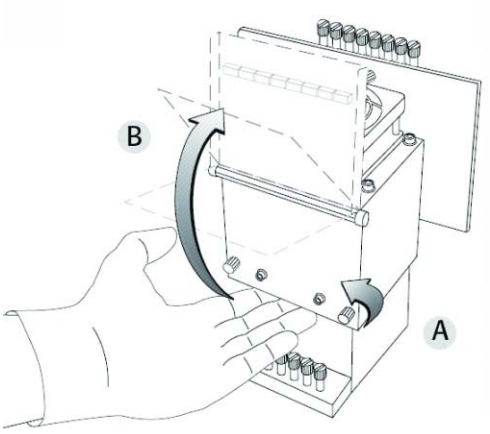
   Note: The printer disconnects power to the heads for your safety.
3. On the print block, release the upper and lower screws that secure the print head in the block. (If necessary, you may use a screwdriver to loosen the screws.)



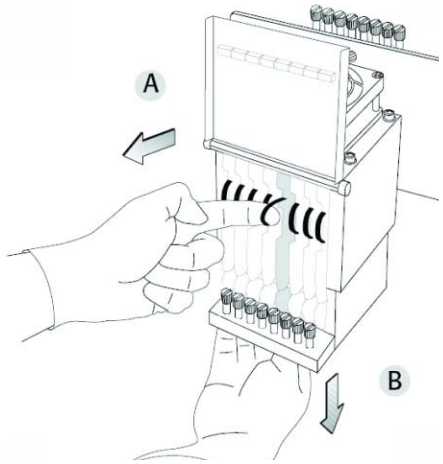
4. Press down on the upper and lower locking screws to release the print head.



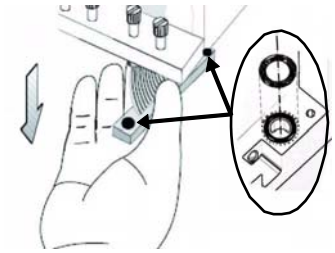
5. Loosen the screws on the door of the compartment protecting the print-head driver cards (A), then pull and lift up the door (B).



6. Pull the print-head driver card out of its socket so that the head is free (A), and remove it from the bottom of the print block (B).

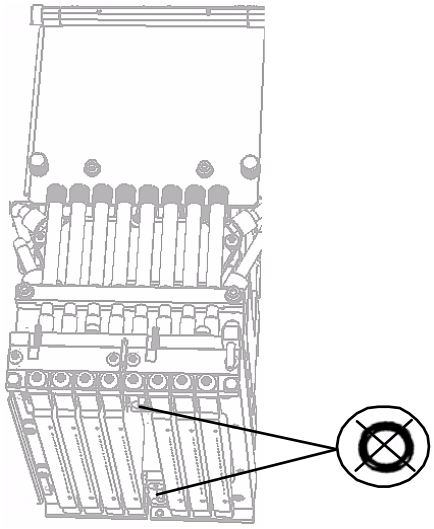


7. Make sure that along with the head, you remove the two rubber O-ring seals.



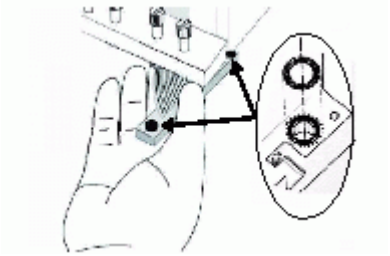
O-ring seals on the print head

Important: If the seals are not removed with the head, they are probably stuck to the print block housing. If so, remove them.



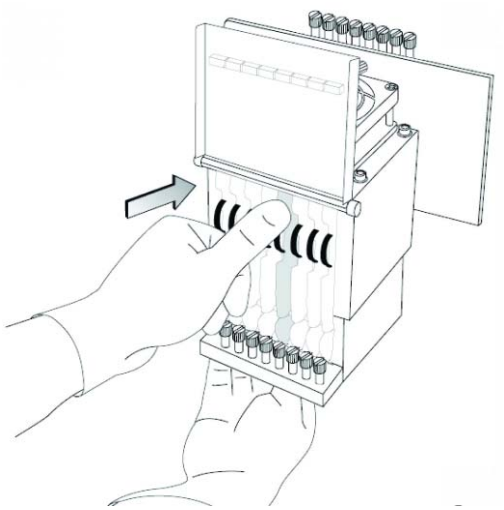
Installing the New Head

1. Make sure that the O-ring seals are in place in the new head, and gently insert it into the empty slot in the print block.

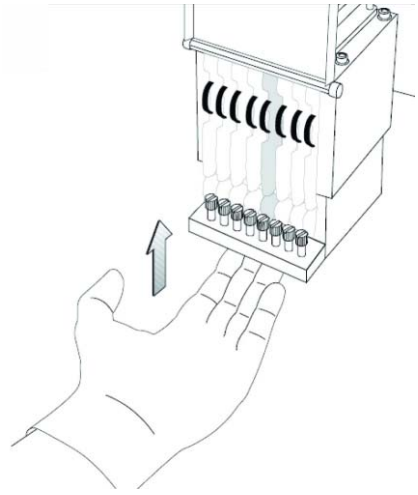


Note: Make sure to insert the head with driver card facing its socket, in the rear of the print block.

2. Push the print-head driver card into its socket.



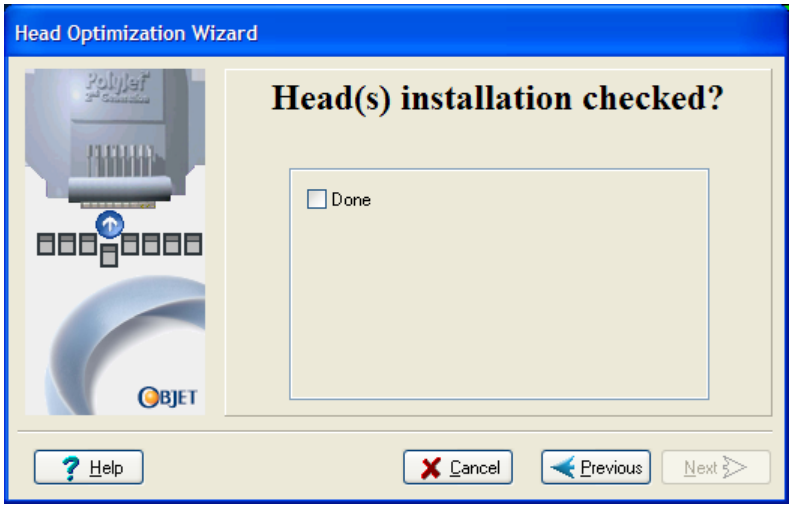
3. Push the head up until you hear it click into place, in both front and rear holders.



4. Lower the door of the print head compartment, and tighten the screws to lock it in place.
5. Tighten the upper and lower screws that secure the print head in the print block.

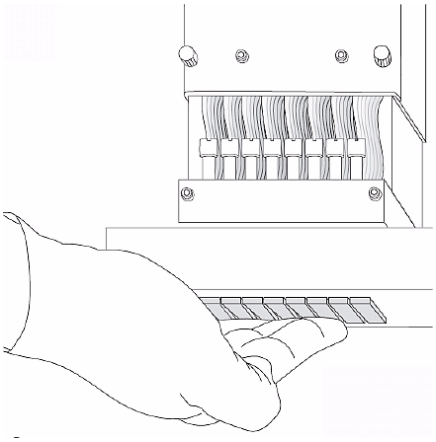
   Note: Hand-tighten these screws. Do *not* use a screwdriver.

6. In the wizard screen, select the check box to confirm that you have replaced the head, and click **Next**.



Installation Check

With your fingers, make sure that the new head is level and even with the other heads.



In the wizard screen, select the check box to confirm that the heads are level and even.