Workflow guide for:

3D printing retainers

With SprintRay 3D printing, you can directly print retainers for a simple, efficient workflow that uses AI design. This guide will walk you through scanning, design, fabrication, preparation, and placement.

Resins compatible with this workflow:

- SprintRay Retainer

Workflow at a glance

1.Capture data

Tools:

- Intraoral scanner

2. Get AI design

Tools:

- Computer with internet
- Patient data
- SprintRay account

3. Create print job

Tools:

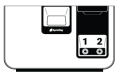
- Computer with internet
- SprintRay account

4. 3D print

Tools:

- SprintRay Pro S or Pro 2 3D printer
- SprintRay Retainer resin

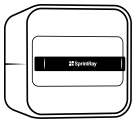
5. Wash



Tools:

- SprintRay wash device

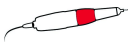
6. Post cure

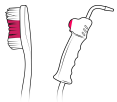


Tools:

- SprintRay NanoCure

7. Process and try-in



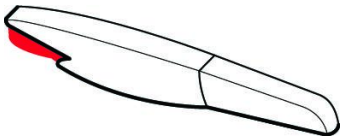


Tools:

- Lab handpiece
- Silicone burr
- Cotton buff wheel
- Mineral oil
- Steamer or soapy water & toothbrush

1. Capture data

Tools



Intraoral scanner

1.1 Capture upper, lower, and bite scan

Perform a full upper and lower scan of the patient to capture their digital anatomy. Ensure there are no holes in your scan and capture as much surrounding tissue as possible.

Export the scans as an STL with the upper and lower arch **in occlusion**. This is the default export style for most scanners and eliminates the need for a separate bite scan file.

> ⚠ *If you're using an **iTero** scanner,* select the option *'File Per Arch (Arches Oriented in Occlusion)'* when exporting, or your scans will not work. Learn How

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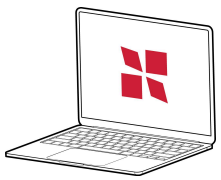
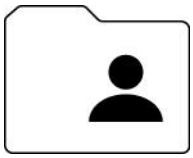
2. Get AI design

Tools



Computer with internet



Patient data

SprintRay account

2.1 Submit treatment request

Visit dashboard.sprintray.com and sign in or sign up for a SprintRay account, then start a new treatment. Select or add your patient, then choose the 'AI Retainer' treatment type. Set the desired parameters, upload the patient files, and submit.

Make sure your scans meet the following requirements:

- Upper and lower scans are required
- Scans must be exported in occlusion
- 2 mm+ of tissue beyond the margin in the anterior buccal area

2.2 Review and approve design

SprintRay AI will design the retainer in a few minutes. You'll receive an email notification when it's ready. Review and approve the file from your Cloud Design dashboard.

If you aren't happy with your design, try rescanning your patient and submitting a new case.

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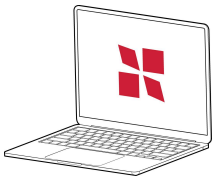
3. Create a print job

Tools



Computer with internet access

SprintRay account

3.1 Import into RayWare

Once the retainer design has been approved, the 'Add To Print Job' button on the Cloud Design treatment page will automatically generate a build platform in RayWare Cloud.

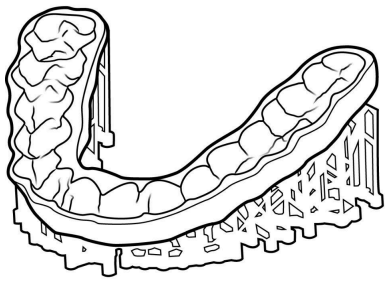
RayWare Setup Details

Job type: Retainer

Material: SprintRay Retainer

Thickness: 170 microns

Orientation: Intaglio facing away from the build platform, oriented at a 20-degree angle from the anterior



Supports: Standard supports

3.2 Queue to printer

Once you're happy with your print setup, select the 'Send to Queue' button, then choose the printer you'd like to use for this print job.

> ⚠ *You can also use the 'Print Now' button, but thoroughly inspect your printer before you start printing.*

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4. 3D print

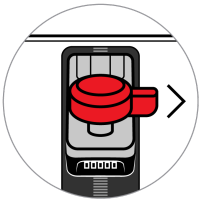
Tools

SprintRay Pro S or Pro 2 3D printer

SprintRay Retainer resin

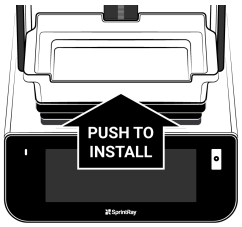
> ⚠ *When you're not using it, remove the resin tank containing Retainer from the printer and store it. If you're using Pro S, Retainer resin may shorten the life of your resin tank.*

4.1 Prepare and start the print job

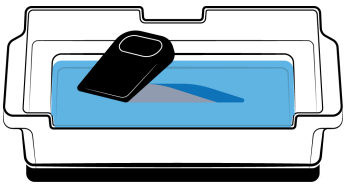


Locked
Ready to print

A) Check that the platform is clean, locked, and ready



B) Install the resin tank and make sure it's fully seated



C) Fill the tank with Retainer resin, then stir

D) Go to the queue and press 'Start Print.' This print job should take less than an hour.

You can monitor the progress on the printer touchscreen or SprintRay Cloud.

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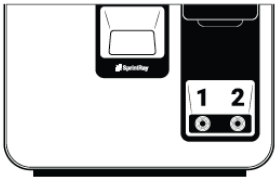
5. Wash

Tools



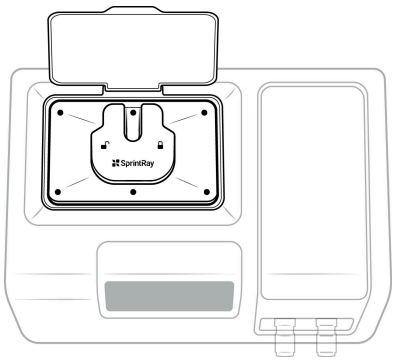
SprintRay wash device

5.1 Wash in SprintRay wash device

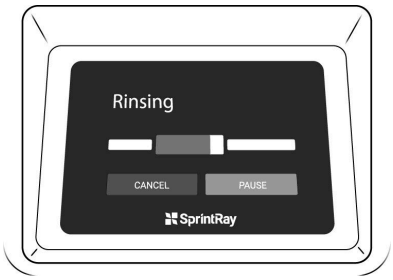
If you're using ProWash S, run a standard cleaning cycle.

If you're using Pro Wash/Dry, run the following custom cycle:

Wash 1 - 3 mins **Wash 2** - 3 mins **Dry** - 3 mins



A) Place the build platform and run a standard cycle



B) Run a wash cycle

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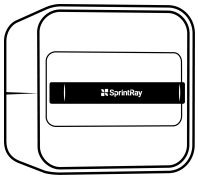
6. Post cure

Tools



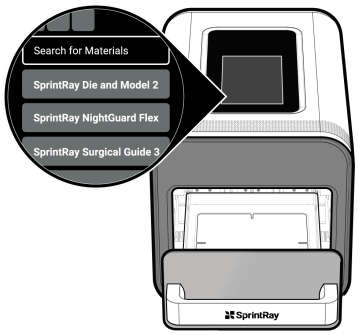
SprintRay NanoCure

> ⚠ *SprintRay Retainer is only compatible with NanoCure. Attempting to use another curing device may result in an unsafe appliance.*

6.1 Cure and cool

Place the retainer in your NanoCure and select your resin from the list. Follow onscreen instructions. The LEDs will turn on and off during the curing process.

Once the retainer has finished curing, remove the appliance and let it cool for 6 minutes.

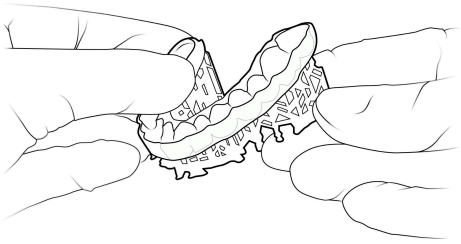


> ⚠ *Make sure the retainer has fully cooled before removing the supports. If you remove the supports before it has cooled down, you may ruin the retainer.*

6.2 Remove supports

Twist the supports away from the retainer to remove them. Don't worry if small support nubs are left on the retainer; you'll remove them in the next step.

If you remove the supports before curing, be careful not to deform or rip the retainer.



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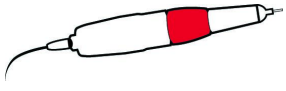
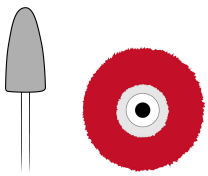
7. Post process and deliver

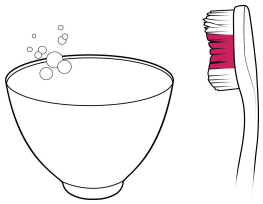
Tools



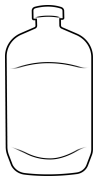
Lab handpiece



Silicone burr & cotton buff wheel



Bowl of soapy water & toothbrush

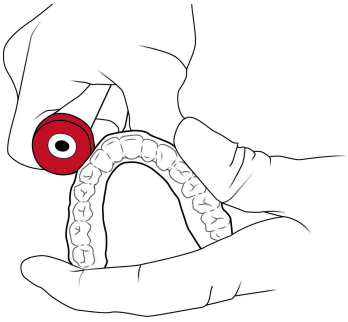


Mineral oil

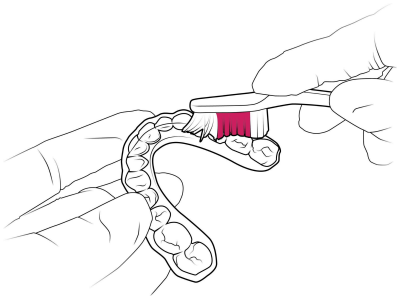
7.1 Remove supports and polish

A) Use low RPM with a silicone burr or carbide burr to remove any stumps from supports

B) Use mineral oil and a cotton buff wheel to restore the retainer’s natural shine

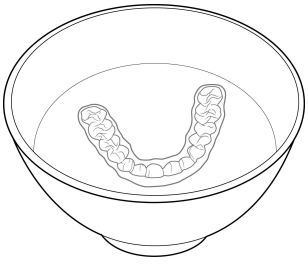


C) Rinse the retainer with warm, soapy water. Brush with a toothbrush to remove residue



7.2 Heat set delivery

A) Before chairside placement, place the retainer in a bowl of warm water at ~50°C and let it soak for about a minute.



B) Place the retainer in the patient’s mouth, ensuring a proper fit. Leave it in for a few minutes to allow it to set.

Instruct your patient to rinse the retainer in hot water immediately before wearing the appliance.