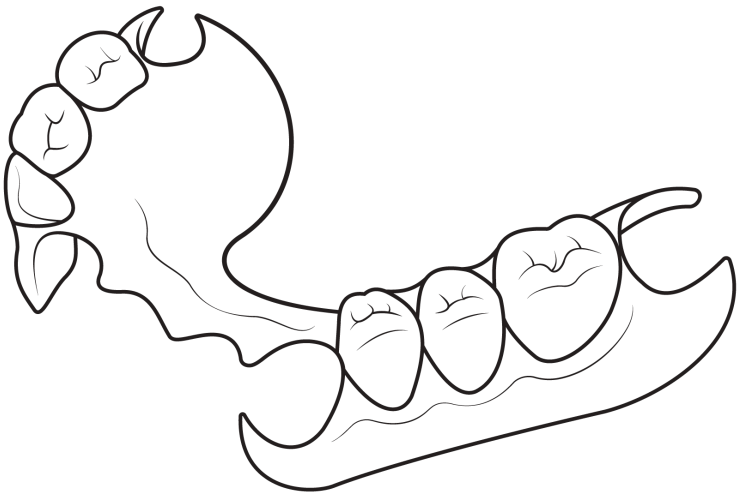
Workflow guide:

3D printing for partial dentures



With SprintRay in your office, you can deliver partial dentures in fewer appointments while providing an exceptional patient experience. This guide will walk you through gathering data, fabricating, and placing a partial denture.

Resins compatible with this workflow:

- SprintRay Apex Flex Partial Base
- SprintRay Apex Teeth

Workflow at a Glance

1.Capture Data

Tools:

- Intraoral scanner

2. Order Design

Tools:

- Computer with internet
- Patient data
- SprintRay account

3. Create Print Job

Tools:

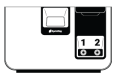
- Computer with internet
- SprintRay account

4. 3D Print

Tools:

- SprintRay 3D printer
- Apex Flex Base resin
- Apex Teeth resin
- Duo Kit

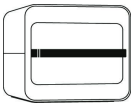
5. Wash

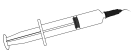


Tools:

- SprintRay wash device
- Duo Kit wash adapter

6. Post Cure

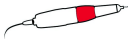


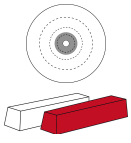


Tools:

- SprintRay NanoCure
- Apex Flex Base resin
- Applicator

7. Finish & Polish



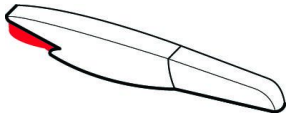


Tools:

- Lab handpiece
- Abrasive wheels or burr
- Muslin polishing wheels
- Polishing compounds
-Ivoclar universal polishing paste

1. Capture Data

Tools



Intraoral scanner

1.1 Scan Upper, Lower, and Bite

Perform a full scan of the patient's existing dentition, fully capturing the gums and teeth.

Export the scans in occlusion. This is the default export style for most scanners and eliminates the need for a separate bite scan.

> ⚠ *The fabrication process for all the major denture types is similar; the difference between denture types is predominantly the data you'll need to submit for design.*

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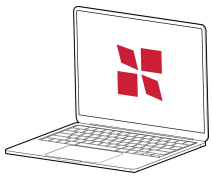
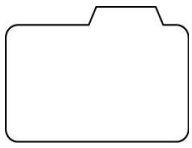
2. Submit Design Request

Tools



Computer with internet access



Patient data

SprintRay account

2.1 Submit Treatment Request

Visit dashboard.sprintray.com and sign in or sign up for a SprintRay account. Select or add your patient, then choose the Partial Denture' treatment type and the subtype you chose in step one. Upload all relevant data.

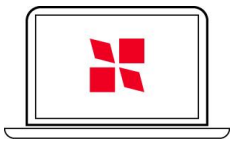
Select the area of the denture, then mark the teeth and clasps. If you need any additional customization, you can leave a note for the designer.

2.2 Review and Approve Design

Once your designer has created the denture treatment, they will send you files and any notes to review the case. You can communicate with the designer via our integrated chat system if you have any questions or revision requests.

3. Create Print Job

Tools



Computer with internet access

SprintRay account

3.1 Import into RayWare

Navigate to RayWare Cloud, then start a new print job. The Pro 2 Duo Kit allows you to print both the base and teeth in a single job.

> ⚠ *If you do not have a Duo Kit, you can print the base and teeth in two sequential, separate print jobs.*

RayWare Setup Details

Indication	Duo Mode	
Tank I	**Indication**: Partial denture base **Material**: Apex Flex Base	Intaglio surface facing towards the build platform, anterior at a 60°angle
Tank II	**Indication**: Denture teeth **Material**: Apex Teeth	Occlusal surface facing toward and parallel to the build platform

3.2 Queue to Printer

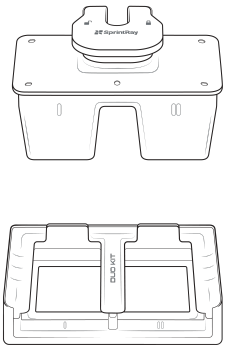
Import your files into their respective tank positions, then proceed to the print preview. Once you're happy with the setup of this job, send it to the queue of your printer.

4. 3D print the base and teeth

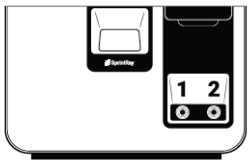
Tools

SprintRay Pro 2 3D printer

Apex Flex Base and Apex Teeth resins

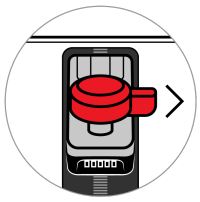


Duo Kit build platform & resin tank (preferred)



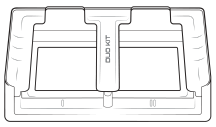
SprintRay wash device

4.1 Prepare and Start the Print Job

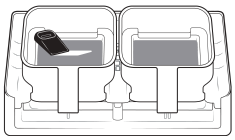


Locked
Ready to print

A) Install and lock the Duo Kit build platform



B) Install the Duo Kit tank cradle, then the tanks

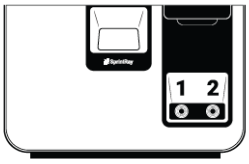


C) Fill one tank with Apex Flex Base and the other with Apex Teeth resin

Go to the queue and press ‘Start Print’. This print job should take around 40 minutes

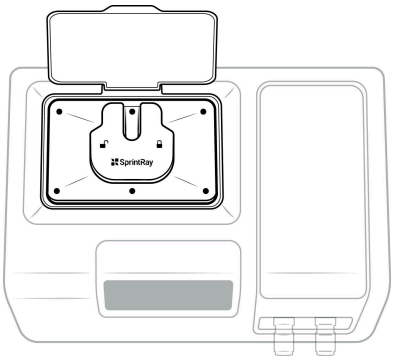
4. Wash the base and teeth

Tools

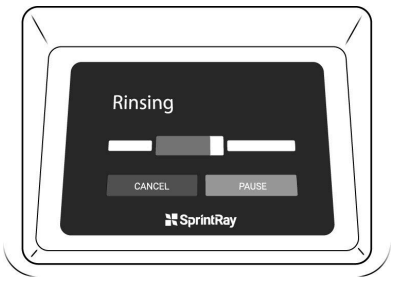


SprintRay wash device

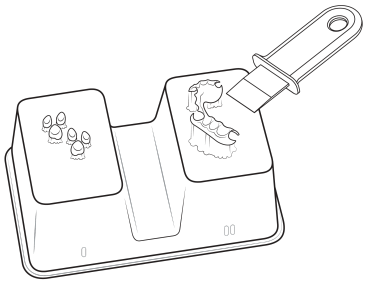
4.2 Wash the base and teeth



A) Transfer the build platform to SprintRay wash device with the Duo Kit adapter



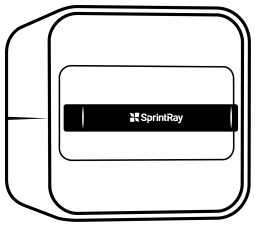
B) Run a standard cleaning cycle



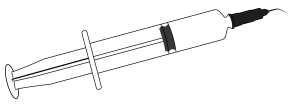
C) Remove the base and teeth from the Duo Kit platform

6. Assemble & Post Cure

Tools

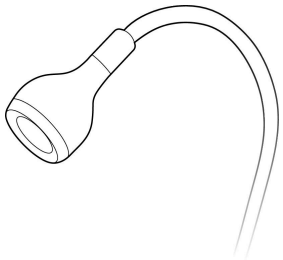


SprintRay curing device



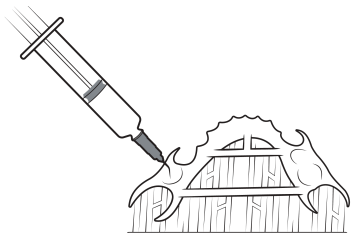
Syringe or applicator

SprintRay denture base resin



Gooseneck clamp-on curing light or handheld curing light

6.1 Assemble the Teeth and Base



A) Use a syringe to cover each socket with denture base resin

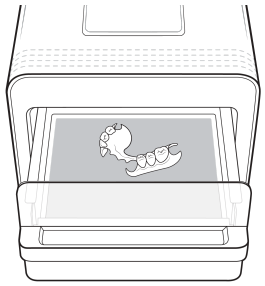
B) Press the teeth and base firmly together, applying level pressure

C) Continue applying pressure while tack curing the teeth and base together

⚠ *If you are creating the denture from two different resin lines, select 'Conventional Denture' on your NanoCure and follow onscreen instructions for assembly and curing*

6.2 Post Cure

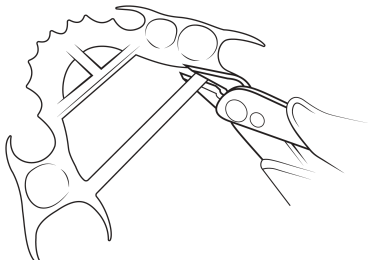
Place the assembled denture in your SprintRay curing device, then select the 'Apex Flex Denture' and follow the onscreen instructions



6.3 Remove supports & bars

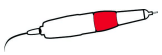
Carefully twist the supports away from the denture teeth and supports. Use the support snipper if they don't come away easily.

If your denture base has any support bars, use snippers to remove them.



7. Smoothen & Polish

Tools



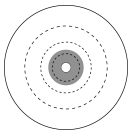
Lab handpiece

Scotchbrite wheels

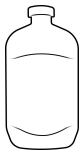
Resilience polish

Dental lathe

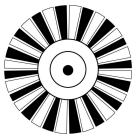
Steamer



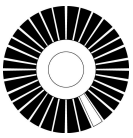
Cotton buff wheel



Mineral oil



Bristle wheel B27/B29

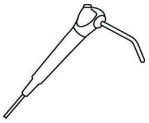


Robinson #11 wheel

Tripoli Rouge

Ivoclar universal polishing paste

Blue Shop Towel

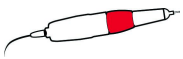


Compressed air

7.1 Smoothen and Polish

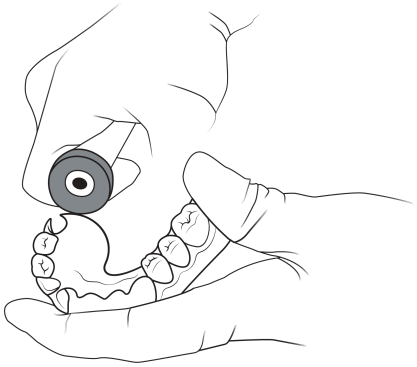
Smoothen with Handpiece

Use low RPM with an abrasive wheel or a carbide burr to remove any stumps left over from supports. Make sure to do a full pass along the occlusion.



Lab handpiece

Abrasive wheel

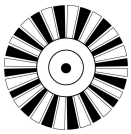


Smoothen with Resilience

Use a black bristle wheel B27/B29 and Resilience polish. Resilience should be wet but not runny. Apply medium pressure.

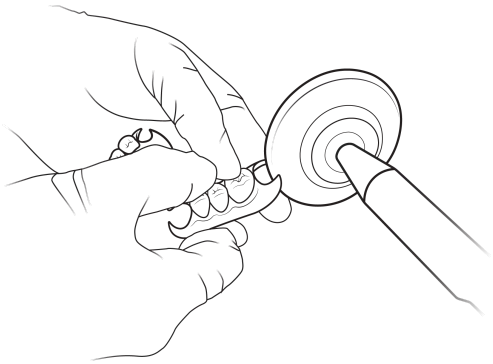
⚠ *Polish at low speed and do not let the wheel dry out*

Dental lathe



Bristle wheel B27/B29

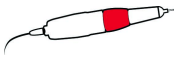
Resilience polish



Apply Tripoli Rouge

Apply Tripoli to a Robinson #11 wheel on a lab handpiece in hard-to-reach places and interproximal surface.

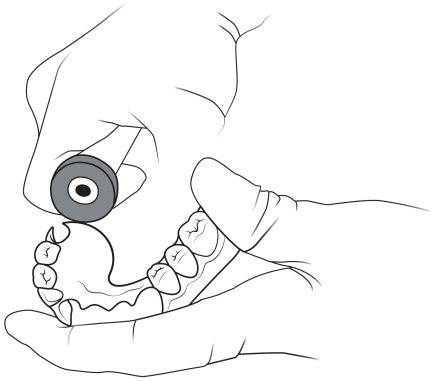
⚠ *Do not let the wheel dry out*



Lab handpiece

Tripoli Rouge

Robinson #11 Wheel

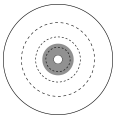


Apply Paste and Polish

Apply Ivocalr Vivadent Universal Polishing Paste to the denture. Use a fresh wheel to polish all surfaces of the denture using full pressure.

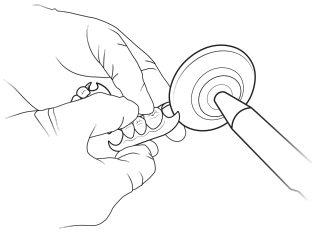
⚠ *Polish at low speed and do not let the wheel dry out*

Dental lathe



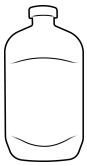
Cotton buff wheel

Ivoclar universal polishing paste



Apply Mineral Oil

Dip a gloved finger in mineral oil and smear across the denture surface.

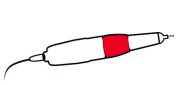


Mineral oil

Remove Polishing Paste

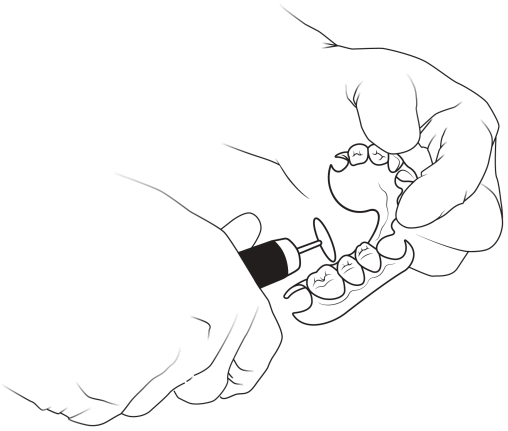
Use medium/heavy pressure on a new Robinson #11 wheel to reach all the interproximal areas, removing mineral oil and polishing paste so the denture is shiny.

⚠ *Do not let the wheel dry out*



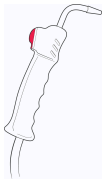
Lab handpiece

Robinson #11 wheel

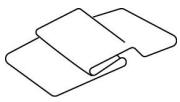


Clean

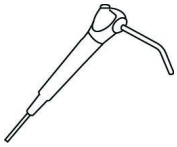
Remove residual mineral oil and brush the denture by hand, use a steamer, or rinse with water. Dry with compressed air and/or a blue shop towel.



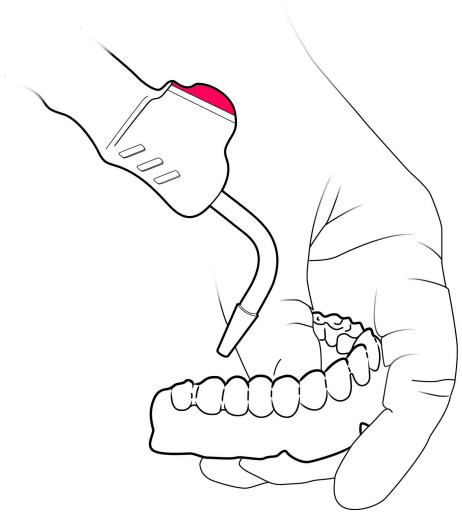
Steamer



Blue Shop Towel



Compressed air



Disinfect and then place the denture.