

Topics of Denture

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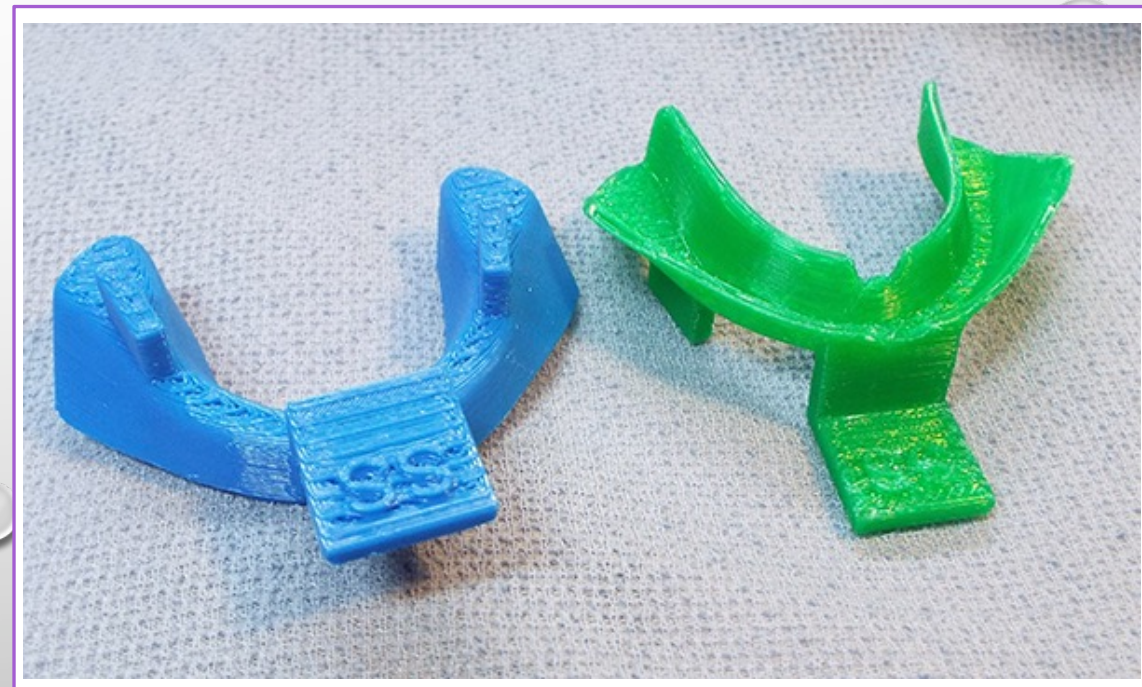


How to use the Perfect-STOX

(Edentulous impression trays designed based on anatomical landmarks)

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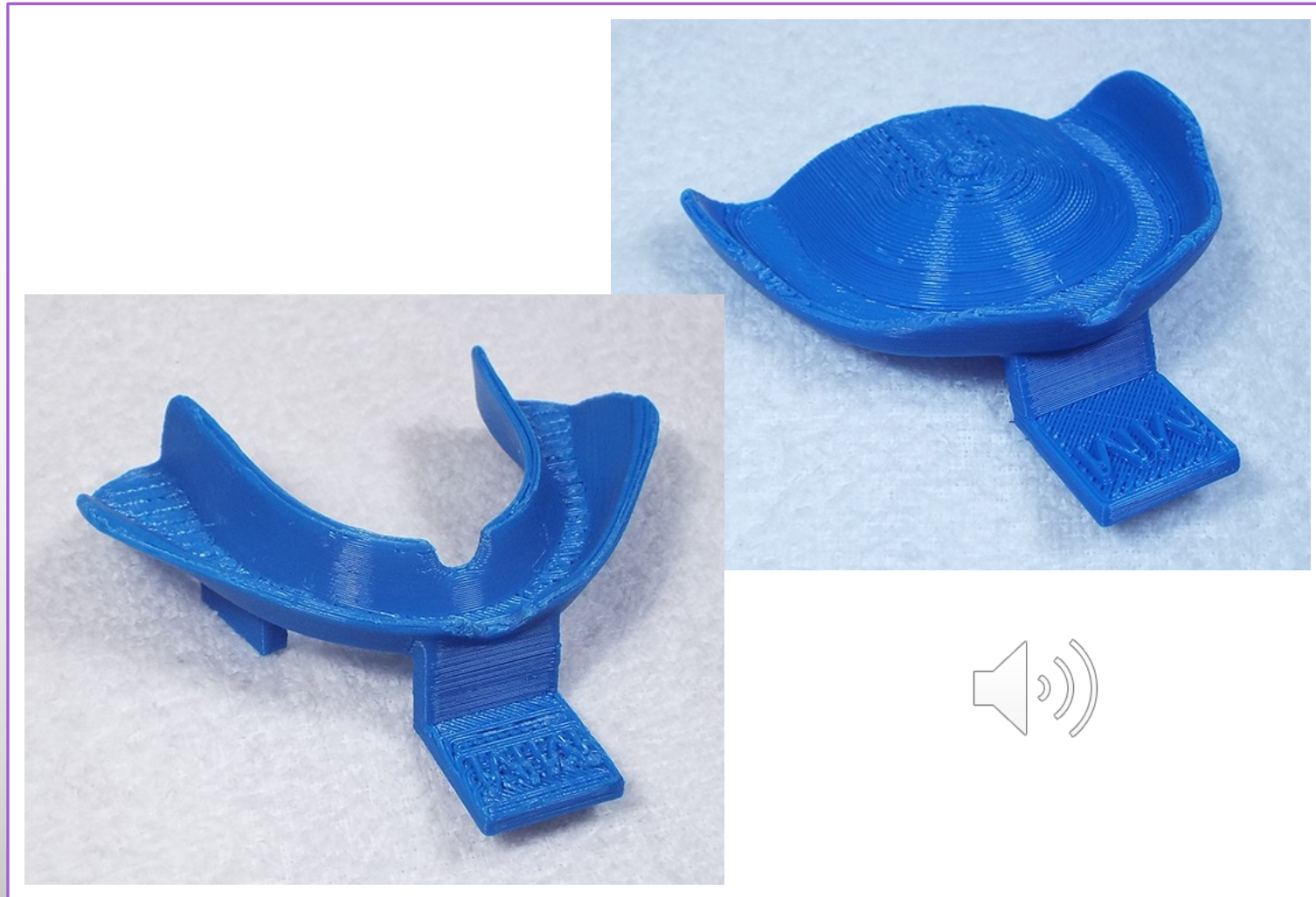
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How to use the Perfect-STOX

1. Characteristics

These ready-made trays for edentulous alveolar ridge are designed based on anatomical landmark-to-mark measurements obtained from 137 edentulous residual alveolar ridges. Therefore, any of the 9 maxillary and 11 mandibular types will fit the patient's edentulous alveolar ridge.



How to use the Perfect-STOX

2. Maxillary trays

As shown in the photo on the right, there are a total of nine types of maxillary trays available: three long, three standard, and three wide. The patient's maxillary edentulous alveolar ridge will fit into one of these nine types.



How to use the Perfect-STOX

3. Mandibular trays

As shown in the photo on the right, there are a total of 11 types of mandibular trays available: three long, three standard, three wide, and one extra-large and one extra-small types. The patient's mandibular alveolar ridge will fit into one of these 11 types.



How to use the Perfect-STOX

4. Precautions for use

(a) Sterilization disinfection

This product is made of plant-derived PLA resin, which is friendly to the human body and the environment, by means of a 3D printer. Therefore, this product can be deformed by heating, so please use gas sterilization instead of autoclave for sterilization.

(b) Cleaning-up

Impression material that has seeped into the fine crevices of the tray should be removed by soaking the tray in a cleaning solution for an extended period (overnight.) and it is recommended to use a cleaning solution specifically designed for alginate impression materials.

(c) Morphological modification

The tray edges can be modified using a carbide bar. Use low-speed grinding and ensure that no-pressure is applied to avoid deformation due to frictional heat.

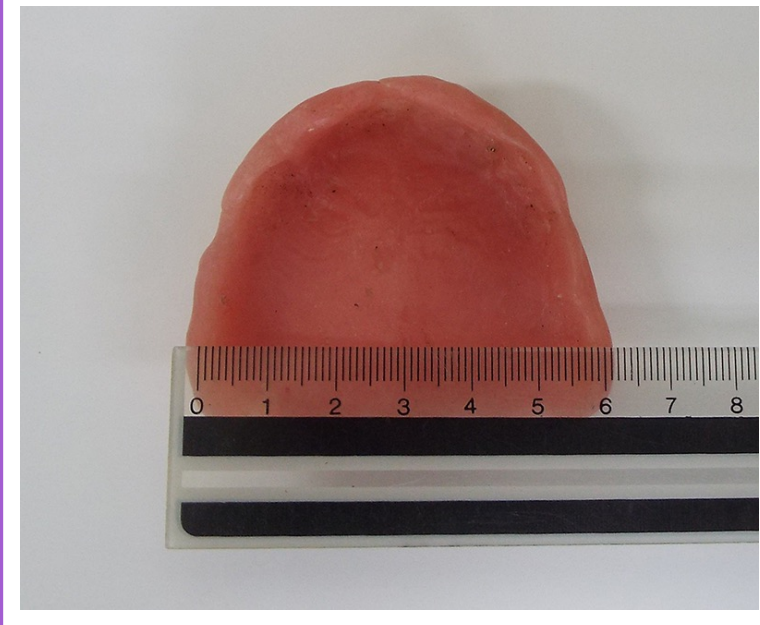
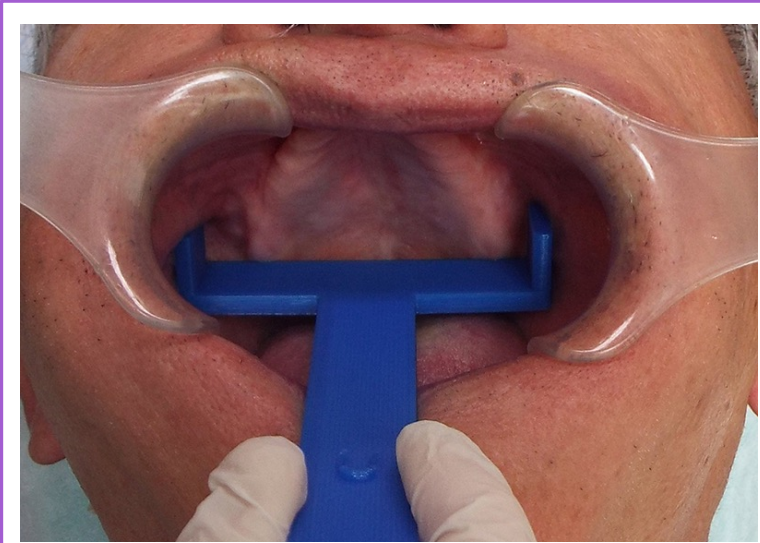


How to use the Perfect-STOX

5. Method of impression taking

a) Measurement of the edentulous alveolar ridge Maxillary

Measure the right and left buccal sides using the provided maxillary measuring device, as shown in the upper right photo. This method enables a comparison of the patient's maxillary buccal width with the average. Additionally, the anteroposterior width can be estimated based on the crest morphology. In the case of patients with old dentures, measuring the old dentures helps in selecting a well-fitted impression tray more accurately, as shown in the lower right photo.

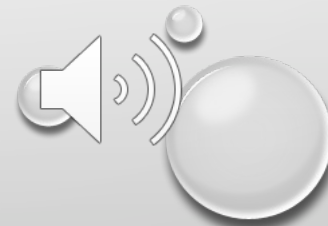


How to use the Perfect-STOX

5. Method of impression taking

a) Measurement of the edentulous alveolar ridge Mandibular

Measure the lingual side on both the left and right using the provided mandibular measuring device, as shown in the upper right photo. If the patient has an old denture, also measure the denture itself, as shown in the lower right photo.



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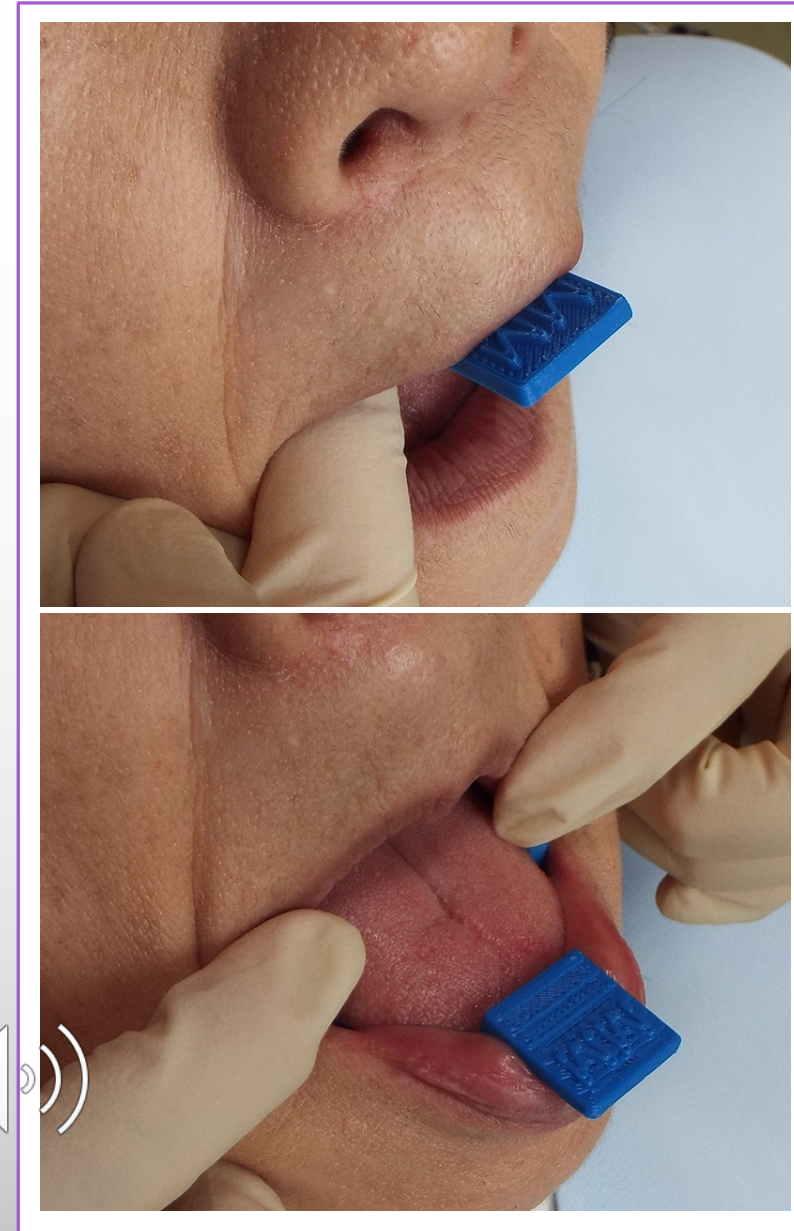
5. Method of impression taking b) Try-in tray

Maxillary

Try the selected tray in the maxilla and take note (or memorize) of the relationship between the tray handle and the lips at that time. This relationship is used to setting the position of the tray when taking impressions, as shown in the upper right photo.

Mandible

Fit the selected tray in the mandible, ensuring it stays in place without rising when the patient's tongue is pushed forward and upward. Take note (or memorize) of the positional relationship between the tray handle and the lips in this position. It used to set the position of the tray when taking impressions, as shown in the lower right photo.

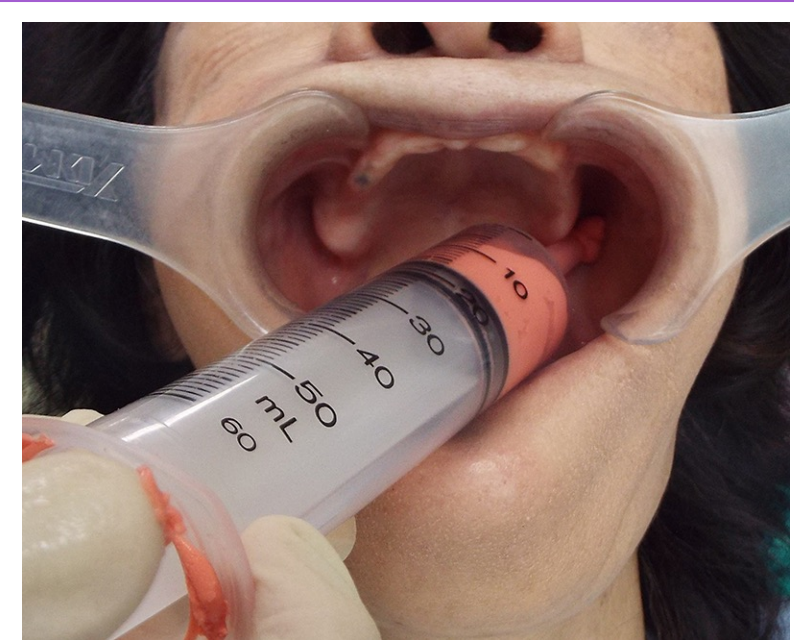


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5. Method of impression taking

c) Impression taking Maxillary

Before fitting the impression tray to the residual alveolar ridge, a small amount of kneaded impression material is injected into the mucous membrane and palate using a syringe (TERUMO catheter tip type) to obtain an impression with minimal air bubbles , as shown in the upper right photo. The tray with the impression material is placed on the maxilla, referring to the relationship between the tray handle and the lips recorded at the tray fitting , as shown in the lower right photo.



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5. Method of impression taking c) Impression taking Mandibular

Similarly, take impressions, paying attention to the position of the tray handle. At this time, instruct the patient to hold the tongue forward and upward. He further instructs the patient, "Please do not move your tongue while it is on this tray", as shown in the right photo.



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5. Method of impression taking

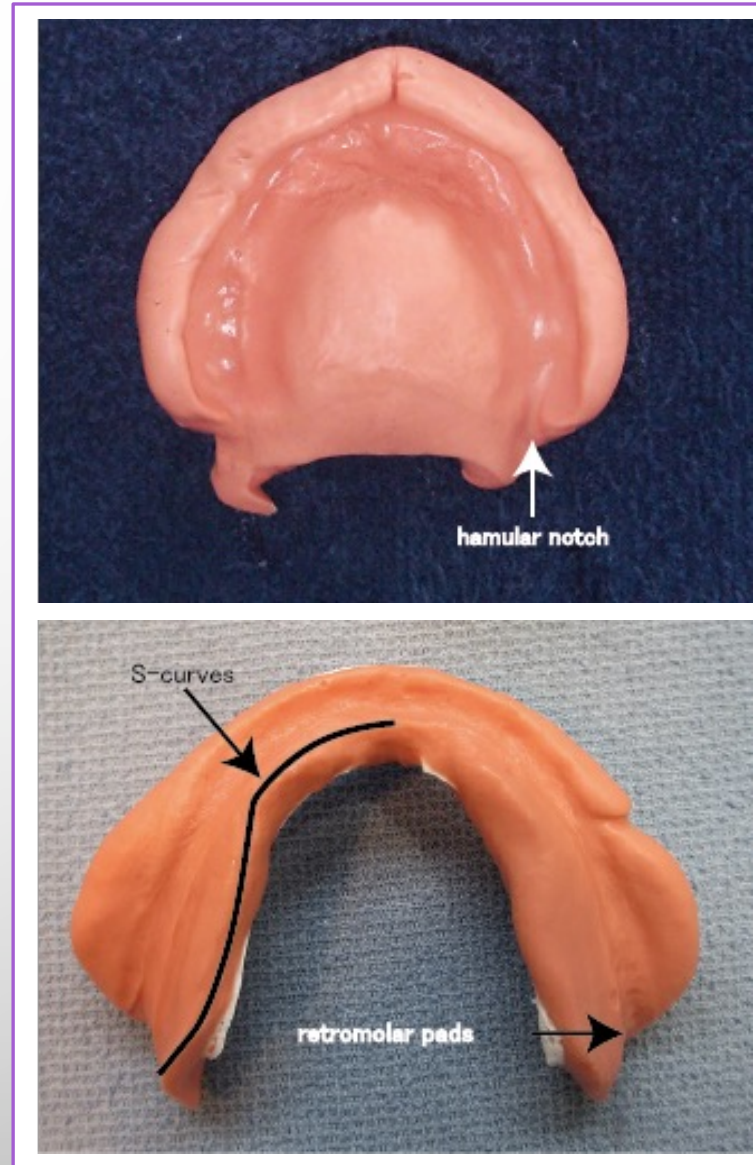
d) Confirmation of impression surface

Maxillary

Check the anatomical landmarks (e.g., Hamler notch) on the impression surface, as shown in the upper right photo.

Mandibular

Identify the anatomical landmarks on the impression surface (e.g., S-curve and retromolar pad), as shown in the lower right photo.



How to use the Perfect-STOX

5. Method of impression taking

e) Accurate and precise diagnostic model

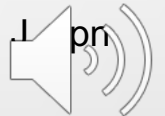
Diagnostic models with clearly identifiable anatomical landmarks enable precise diagnosis of the edentulous residual alveolar ridge. Additionally, they facilitate the creation of well-fitting custom trays, which greatly reduce the time needed for accurate impression taking of the edentulous residual alveolar ridge.



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References

- 1) Boucher, C.O., Hickey, J.C. and Zarb, G.A. :Prosthodontic treatment for edentulous patients 7th ed., 107~212, C. V. Mosby Company, Saint Louis, 1975.
- 2) Sotokawa, T.: Measurement of Distances between Anatomic Landmarks on Casts for Edentulous Patients – Trays Fitting to Edentulous Alveolus Ridges - , J Jpn Prosthodont Soc, 37 : 469-479, 1993.
- 3) Sotokawa, T. : An Evaluation of Improved Trays for Edentulous Alveolus Ridges of Japanese Patients, J Jpn Prosthodont Soc Tohoku Hokkaido Chapter, 2004: 15.
- 4) Sotokawa, T. : Evaluation of Trays Designed for Edentulous Alveolus Ridge Based on Statistical Analysis, Jpn Prosthodont Soc: Vol.51, 116th, 2007: 131.



If you have any questions or doubts, please leave them in the public comment section below.

The next topic will be the second dental practitioner's common room,
" Maxillary impression procedures ".