TrueDent™ Denture Polishing Protocol

TrueDent and TrueDent-D Materials

Best Practice

This document describes a systematic protocol for polishing a TrueDent™ monolithic denture that is applicable to TrueDent™ and TrueDent-D™ materials.

- Overview
- Protocol for Polishing a TrueDent Denture

Overview

The goal of this TrueDent™ denture polishing protocol is to adequately polish the denture while maintaining the integrity of design file data and prosthetic dimensions. Maintaining integrity of design file data is critical for reproducing the high-fidelity fit, function, and form in TrueDent. If the base and teeth are modified, as with traditional denture finishing, then the design file data is not accurately reproduced. This design modification affects reproduction of the data for future TrueDent prostheses.

TrueDent dentures are about the unique process for creating dental prosthetics that have true fit, form, function, and esthetics!

Figure 1: TrueDent dentures

Figure 2: TrueDent design file

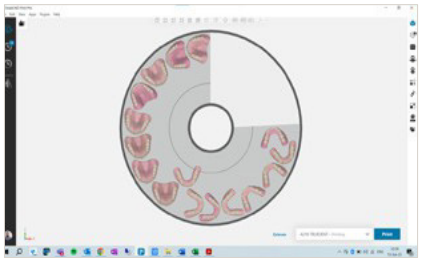

Figure 3: GrabCAD Print™ software

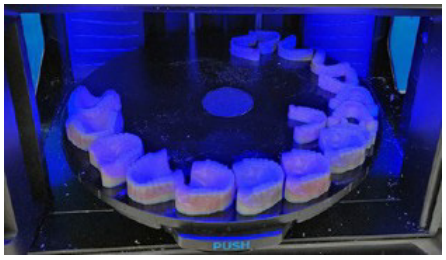

Figure 4: Stratasys J5 DentaJet®

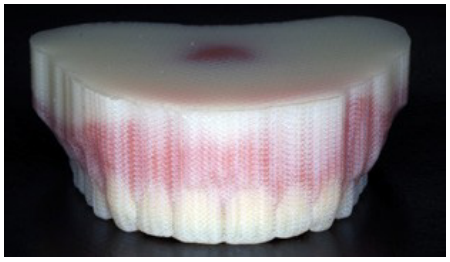

Figure 5: TrueDent support scaffolding

Figure 6: TrueDent after post-processing

Figure 7: TrueDent polished dentures

Protocol for Polishing a TrueDent Denture

This 10–15-minute protocol is to be used for polishing a TrueDent complete prosthesis after the post-printing process.

> The experience of the technician with polishing denture materials may affect the time estimate.

The following protocol describes methods for polishing TrueDent dentures while minimizing changes to their original dimensions. Preserving these dimensions, including the intaglio and cameo surfaces, is crucial for ensuring the reproducibility of the denture.

- Required Tools and Materials
- Base Surface Smoothing
- Pumice Pre-Polishing Process
- High-Shine Polishing Process

Required Tools and Materials

- Brushes (Figure 8)
  - Medium Scotch-Brite® brush (A)
  - Silicone polisher (B)
  - Cotton buff (C) (for handpiece polishing)
  - Standard stiff bristle brush wheel (D)
- Volcanic or synthetic pumice
- Brush wheels (Figure 9)
  - B20 brush wheel (E) wooden or plastic hubs
  - B12 brush wheel (F) wooden or plastic hubs
- Muslin polishing buff wheels (Figure 10)
- Polishing products:
  - Polishing compound
  - Polishing cream

Base Surface Smoothing

1. Smooth surface of the palate and lingual flanges using a medium Scotch-Brite brush (A), (Figure 11).
2. Smooth the gingival contour areas around the teeth using a silicone polisher (B), (Figure 12).

Figure 8: Brushes

Figure 9: Brush wheels

Figure 10: Muslin polishing buff wheels

Figure 11: Using a medium Scotch Brite brush

Figure 12: Using a silicone polisher

Pumice Pre-Polishing Process

1. Pumice the denture base using a wet buff wheel on a polishing lathe (Figure 13).

Figure 13: Pumicing with a wet buff wheel on a polishing lathe

2. To pre-polish areas such as teeth, interproximal, and gingival margin surfaces, use a standard brush (D), B20 brush wheel (E), or B12 brush wheel (F), (Figure 14).

Figure 14: Using a B12 brush wheel to smooth and pre-polish these areas

3. For maxillary palates with deep-vaulted contours, which are difficult to smooth with a buff wheel, use a felt cone (Figure 15).

Figure 15: Using a felt cone

High-Shine Polishing Process

1. Using a small muslin buff wheel, add the polishing bar to buff.

   Place the polishing compound into this dedicated buff wheel on a high-speed polishing lathe (Figure 16).

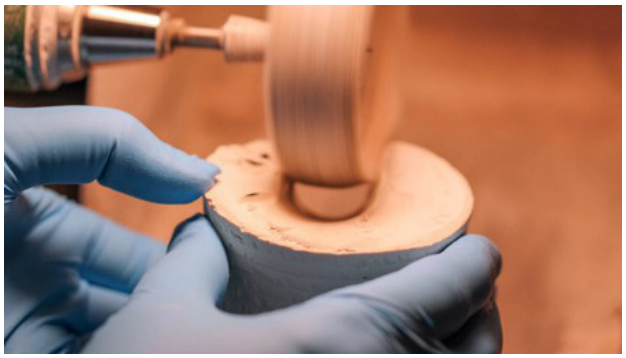

Figure 16: Using a buff wheel with the polishing compound

2. Using the same dedicated muslin buff wheel with the polishing compound bar, polish the buccal and labial base surfaces.

   This reduces and eliminates any rough surface scratches before high-shine polishing with polishing cream (Figure 17).

Figure 17: Using the buff wheel on the palatal surface

3. Apply polishing cream to the base and teeth to prepare for high shine polishing with a new dedicated 4x30 muslin buff wheel for cream on low speed (Figure 18).

Figure 18: After applying polishing cream, allow to dry for 30 seconds and buff with a muslin wheel

4. High shine the cameo surfaces on low speed by applying light pressure to the muslin buff wheel.

   Buff out the polishing paste cream until the denture base and teeth have a high-lustrous polish (Figure 19).

Figure 19: High-shined surfaces

5. Using a damp cotton buff (C) with a handpiece on low speed, apply light pressure to the teeth and base surfaces, creating a high-lustrous polish (Figure 20).

Figure 20: Using a damp cotton buff (C) on the teeth and base

6. To ensure compatibility, follow the instructions for use (IFU) of the polishing compound and cream.

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