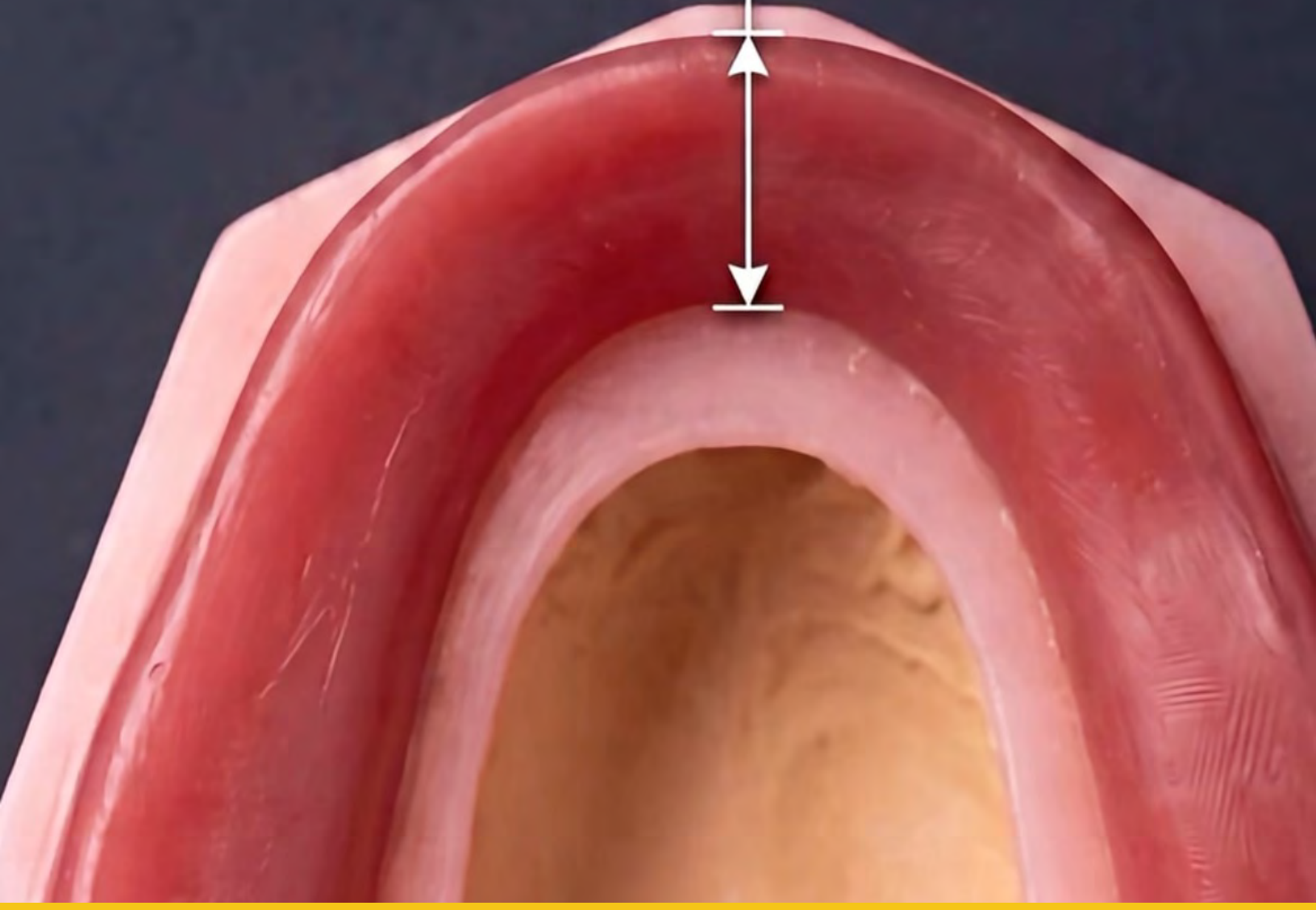


PRECISION
DENTAL ARTS

CLINICAL EDITION · FOR DENTISTS & CLINICAL TEAMS

Occlusal Rims at the Chair

Evaluating, adjusting and recording with wax rims for predictable complete dentures

INTRODUCTION

Why the rim appointment matters

The wax rim appointment is where the denture is really designed. Every adjustment you make, from lip fullness to tooth length to bite height, comes to us on the rims and goes straight into the tooth setup. Accurate records here mean fewer try-in surprises and fewer remakes.

What your rim records tell us

1. **Vertical dimension (VDO)**
   How far apart the jaws sit when the teeth meet. Too open and the patient strains; too closed and the lower face collapses.

2. **Lip support & incisal display**
   The labial contour sets lip fullness, and the incisal edge sets how much tooth shows.

3. **Occlusal plane**
   Its orientation front to back and side to side, which guides every tooth in the setup.

4. **Esthetic landmarks**
   Midline, canine lines and the high smile line, scribed on the maxillary rim.

5. **Centric relation**
   The jaw relationship record we use to mount your models on the articulator.

Inside this guide

1 When the rims arrive 3
· Border extension 4
2 Rim heights 5
3 Rim widths 7
4 Maxillary rim 9
5 VDO & centric relation 10
6 Marking & sending 11
✓ Quick reference 12
★ Removable services 13

Built to averages, finished by you

We build your rims to the average dimensions in this guide. Your adjustments to the patient's lips, phonetics and esthetics are what we set the teeth to.

CHAPTER 1

When the rims arrive

Before you adjust any wax, make sure the bases are stable. A rim that rocks or lifts will give an inaccurate bite and VDO no matter how carefully the rest of the appointment goes.

At the start of the appointment

1. **Seat and stabilize**
   Seat each rim and press alternately on the left and right premolar areas. The base should not rock or tip.
2. **Check the borders**
   Have the patient smile, purse the lips and move the tongue. Frena and muscle attachments should move freely without lifting the base.
3. **Confirm comfort**
   The patient should close comfortably without the rims pushing on the cheeks or crowding the tongue.
4. **Note the starting dimensions**
   Rims arrive at average heights and widths (Chapters 2 and 3), ready for you to adjust to the patient.

Have on hand

- ☐ Boley gauge or caliper
- ☐ Fox plane or occlusal plane guide
- ☐ Willis gauge or ruler for VDO
- ☐ Wax knife, torch or heat source
- ☐ Bite registration material
- ☐ Marking instrument

Tip

If a base is a little loose, a small amount of denture adhesive can steady it for records. Call us if it rocks or doesn't seat.

Troubleshooting the base

What you see	Likely cause	What to do
Base rocks on the ridge	Undercut, distortion or debris	Check the model and tissue; call us if it doesn't seat
Base lifts when the patient smiles or talks	Border overextended at a frenum	Relieve the border, or note it on the Rx
Base feels loose	Underextended or limited ridge	Use a small amount of adhesive for records
Patient gags	Posterior border too thick or long	Check the posterior extent before adjusting

CHAPTER 1 CONTINUED

Denture border extension

Anatomy · Stability · Function. Every boundary matters.



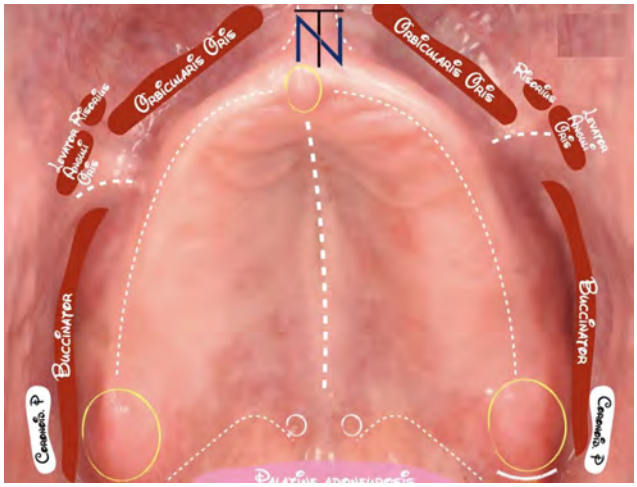
Border-molded maxillary impression.

Why borders matter

The **limiting areas** determine how far the denture flange can extend. The flange should reach every border the tissue allows, for stability, but stop short of the frena and muscle attachments that would lift it in function.

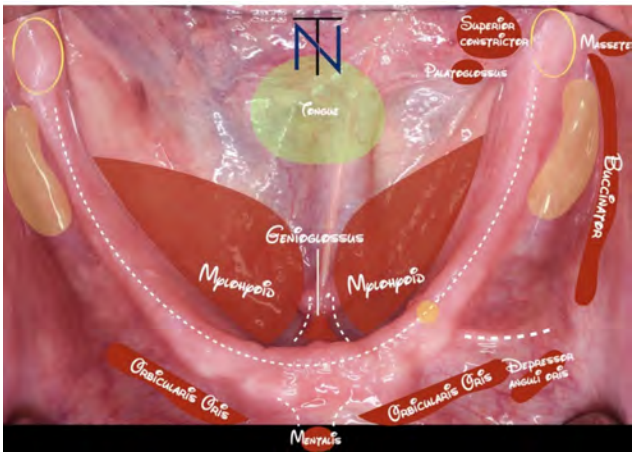
A border-molded final impression records these limits. We build your baseplates and rims to them, so a well-molded impression means stable rims and accurate records.

Maxillary limiting areas



- **Frenum & vestibule** Labial and buccal frena, with orbicularis oris, levator anguli oris and risorius pulling at the borders.
- **Buccal flange** Buccinator along the buccal vestibule; the coronoid process limits the distobuccal flange.
- **Hamular notch** The pterygomandibular raphe. Extend into the notch, not past it.
- **Posterior palatal seal** At the vibrating line, just behind the foveae palatinae, over the palatine aponeurosis.

Mandibular limiting areas



- **Frenum & vestibule** Orbicularis oris and mentalis labially; depressor anguli oris at the buccal frenum.
- **Buccal shelf** Buccinator and masseter limit the distobuccal flange.
- **Retromolar pad** Cover the pad. The superior constrictor and palatoglossus lie just behind it.
- **Retromylohyoid fossa** Extend the lingual flange into the fossa for stability.
- **Mylohyoid fossa** Sublingual fold region. The mylohyoid, genioglossus and tongue set the lingual border.

Dotted lines show the denture border; red areas are the muscles that limit it; yellow circles mark key landmarks (incisive papilla, tuberosities, retromolar pads).

Check the borders when the rims arrive

Have the patient smile, purse the lips, swallow and move the tongue. If a base lifts or the patient feels it at a frenum or muscle, the border is overextended in that area. Note it on the Rx so we can correct it before the try-in.

CHAPTER 2

Rim heights

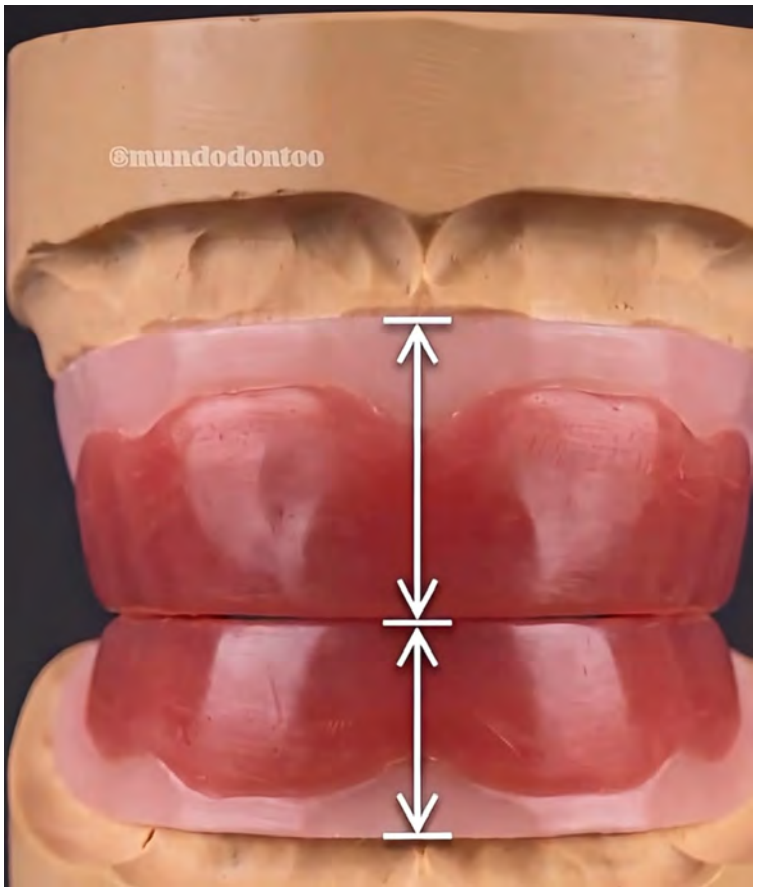
This is how your rims arrive. Heights are measured from the depth of the vestibule to the occlusal surface, at the midline for anterior heights and the first molar for posterior heights.

20–22 mm
MAXILLARY ANTERIOR
Vestibule depth to the incisal edge at the midline.

18 mm
MANDIBULAR ANTERIOR
Vestibule depth to the incisal edge of the lower rim.

18 mm
MAXILLARY POSTERIOR
Buccal vestibule to the occlusal surface at the molars.

2/3 pad
MANDIBULAR POSTERIOR
The plane ends at two-thirds of the retromolar pad height.



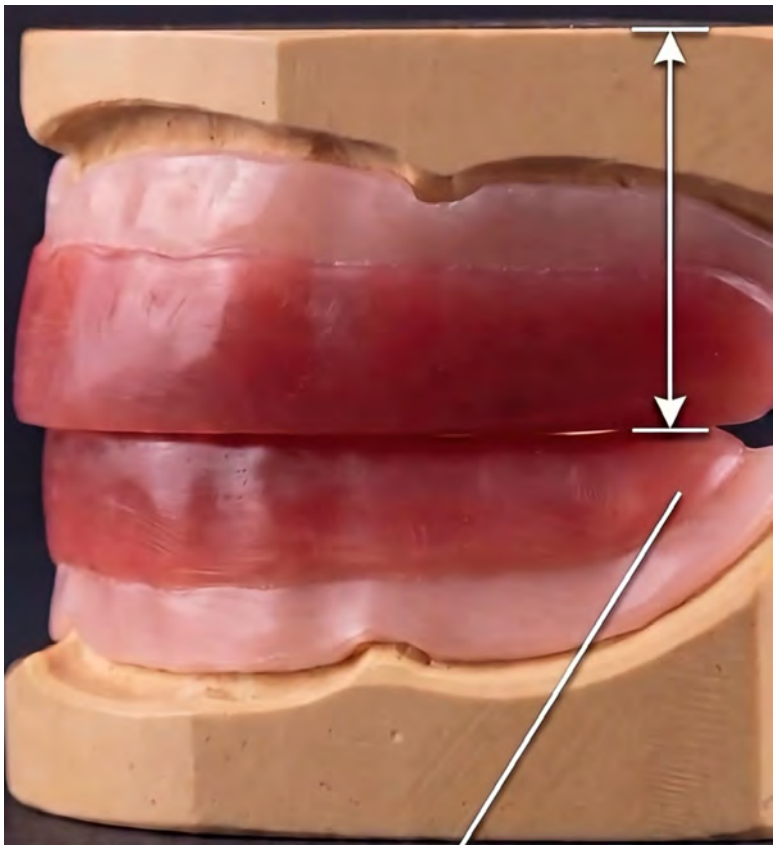
Anterior view, rims together at the midline.

Anterior heights

With the rims together, the combined anterior height is roughly 40 mm: about 22 mm maxillary plus 18 mm mandibular. That's an average starting point that leaves enough wax to shorten or lengthen to the patient's lip.

If the patient's lip is unusually long or short, expect to adjust the maxillary rim length first, then bring the mandibular rim to it when you set VDO.

≈ 40 mm
Combined anterior height with the rims closed together



Side view: 18 mm maxillary posterior height, with the mandibular plane at 2/3 of the retromolar pad.

CHAPTER 2 CONTINUED

Posterior heights

The maxillary rim is about **18 mm** tall in the molar region.

The mandibular posterior plane meets the retromolar pad at **two-thirds of the pad's height**. That keeps the occlusal plane level with the tongue and cheeks, which helps the lower denture stay seated and reduces cheek biting.

Clinical watch-out

If the posterior plane ends up level with the top of the pad or above it, the tongue is pushed back and the lower denture tends to tip forward when the patient chews. Bring it back down to the 2/3 mark.

Checking posterior height in the mouth

1. **Look from the side**
   With the rims seated, the mandibular plane should meet the pads at about two-thirds of their height on both sides.

2. **Compare left to right**
   The plane should be level across the arch, with no cant toward one side.

3. **Adjust the right rim**
   Change posterior height on the mandibular rim; keep the maxillary plane you set to the face.

CHAPTER 3

Rim widths

Width is measured buccal to lingual across the occlusal surface. Narrow anteriors leave room for the incisors; wider posteriors give the patient a stable surface to close on.

3–5 mm	6–8 mm	4–6 mm	6–8 mm
MAXILLARY ANTERIOR	MAXILLARY POSTERIOR	MANDIBULAR ANTERIOR	MANDIBULAR POSTERIOR



Maxillary rim, occlusal view.

Maxillary rim

The anterior segment is narrow at **3–5 mm** and widens to **6–8 mm** through the premolars and molars.

The labial face sits forward of the ridge to support the lip, typically about **8–10 mm in front of the incisive papilla**. You'll fine-tune this by eye in Chapter 4.

The palate is left open so the patient can speak naturally during records.

What width tells us

Rim width and contour suggest where the teeth belong. If you add or remove wax buccally or lingually to suit the cheeks and tongue, we'll set the teeth to match.

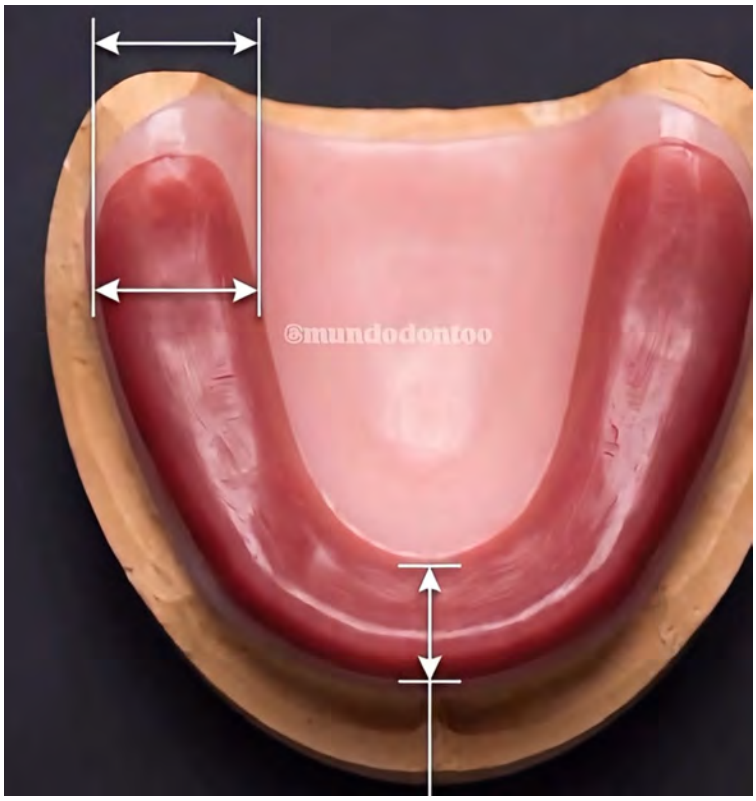
CHAPTER 3 CONTINUED

Mandibular rim

The anterior segment is **4–6 mm** wide and the posterior segment **6–8 mm**.

The posterior rim sits over the crest of the ridge. In the mouth, the tongue should rest on its lingual edge without being pushed back, and the cheeks shouldn't fold over the buccal side.

If the patient bites the cheek or the tongue feels crowded, adjust the width before taking records.



Mandibular rim, occlusal view.

Reading width in the mouth

Too narrow

Unstable to close on. Bite records slide, and posterior teeth end up set too far lingual.

On target

Stable, comfortable, and the tongue and cheeks rest naturally against the rim.

Too wide

Crowds the tongue and cheeks, so the patient can't close naturally. Suggests teeth outside the neutral zone.

Quick cheek & tongue check

With the rims seated, ask the patient to swallow and lift the tongue. The rims shouldn't move, and the patient shouldn't feel the cheeks pinched between them.

CHAPTER 4

Shaping the maxillary rim

Start with the maxillary rim. It sets the esthetics and the occlusal plane, and everything else is built to it. Work through these steps in order.

1. **Lip support**
   Add or remove wax on the labial surface until the upper lip looks naturally supported from the front and in profile. A nasolabial angle of about 90° is a useful guide.

2. **Incisal length**
   With the lip relaxed, about 1–2 mm of rim should show in an average patient. Show more for younger patients and less for older ones.

3. **Phonetics check**
   Have the patient say “F” and “V.” The incisal edge should lightly touch the wet-dry line of the lower lip.

4. **Anterior plane**
   Make the incisal edge parallel to the interpupillary line.

5. **Posterior plane**
   Use a Fox plane to set the posterior plane parallel to Camper's line, from the ala of the nose to the tragus of the ear.

Why this order

Lip support changes how much rim shows, so set the labial contour first, then the length, then the plane. Changing the contour afterward means rechecking length.

CHAPTER 5

Setting VDO and centric relation

Once the maxillary rim is set, bring the mandibular rim to it. This sets the patient's bite height and the jaw relationship we mount to.

Vertical dimension

1. **Find rest position**
   With the patient upright and relaxed, measure between two facial points (for example, nose tip and chin) with lips lightly together.
2. **Set VDO**
   Reduce or build up the mandibular rim until the rims meet at the rest measurement minus 2–4 mm of freeway space.
3. **Check phonetics**
   On “S” sounds and counting from 60 to 70, the rims should come close without touching.
4. **Confirm the plane**
   The mandibular rim should still meet the retromolar pads at about 2/3 of their height.

Centric relation

1. **Guide to centric relation**
   Guide the mandible gently into CR and have the patient close on the rims. Practice a few times until the closure repeats.
2. **Even contact**
   The rims should meet evenly front to back on both sides, with no sliding or rocking.
3. **Record and index**
   Notch the maxillary rim and inject bite registration material, or key the rims together, so they can't shift.
4. **Verify the record**
   Have the patient open and close a few times. The index marks should line up the same way every time.

Signs VDO is off

- **Too open:** lips strain to close, the patient feels the teeth “hitting,” and speech sounds clicky.
- **Too closed:** the chin looks short, the lips thin out, and the corners of the mouth fold in.

CHAPTER 6

Marking and sending records

The lines you scribe on the maxillary rim tell us where to place the teeth. Clear marks mean a closer first try-in.

Mark on the maxillary rim

1. **Midline**
   Center it on the patient's facial midline, using the philtrum as a guide.

2. **Canine lines**
   Mark at the corners of the mouth at rest. These help us choose the width of the anterior teeth.

3. **High smile line**
   Have the patient smile broadly and mark the upper lip line. This guides the gingival height of the anterior teeth.

Removing the rims

Remove the rims as one unit, then check that the bite record didn't shift. Seat them back on their models before packing so nothing distorts in transit.

Before you send the case to Precision Dental Arts

- ☐ Rims meet evenly from front to back with no rocking.
- ☐ Midline, canine lines and smile line are clearly scribed.
- ☐ Rims are keyed or indexed together and seated back on their models.
- ☐ Tooth mold, shade and any esthetic requests are on the Rx.
- ☐ Any changes to VDO or incisal length are noted.
- ☐ Photos of the patient smiling with the rims in place, if you have them.

QUICK REFERENCE

Rim dimensions & chairside targets

Rim dimensions as delivered

	Height	Anterior width	Posterior width
Maxillary	20–22 mm anterior 18 mm posterior	3–5 mm	6–8 mm
Mandibular	18 mm anterior 2/3 of retromolar pad posterior	4–6 mm	6–8 mm

Chairside targets

Landmark	Target
Labial surface of maxillary rim	About 8–10 mm in front of the incisive papilla
Incisal display at rest	About 1–2 mm below the relaxed upper lip
“F” and “V” sounds	Incisal edge lightly touches the lower lip's wet-dry line
Anterior plane	Parallel to the interpupillary line
Posterior plane	Parallel to Camper's line (ala–tragus)
Freeway space	2–4 mm between rest and occlusion
“S” sounds	Rims come close without touching
Mandibular posterior plane	2/3 of the retromolar pad height

Values in this guide are typical starting points from average anatomy. Adjust to each patient's anatomy, phonetics and esthetics.

PRECISION DENTAL ARTS

Removable services

Everything we make for removable cases, from bite blocks and custom trays to finished dentures, partials and night-guards. Call us for current pricing.

Dentures
Precision Denture *Final model, bite block, articulating and setup, processed with our detailed festoon and finishing. Premium denture teeth.*
Precision Immediate Denture *Final model, articulating and setup, processed with our detailed festoon and finishing. Premium teeth.*

Repairs
Simple acrylic repair
Mesh strengthener

Trays & Bite Blocks
Bite block
Custom tray
Bleach trays (upper and lower)

Partials
Partial Complete *Final model, framework, bite block and Portrait IPN premium denture teeth.*
Nature-Cryl® acrylic flipper
Valplast partial
One-tooth partial
Unilateral partial
Q-Sil Impak partial / denture

Relines & Rebase
Reline (heat cure)
Reline (cold cure)
Soft liner
Rebase / transfer, upper or lower

Night-guards & Splints	
3D printed occlusal splint	Hard occlusal splint
Impak night-guard (hard/soft)	Digital occlusal appliance: flat occlusal
Pro-Form night-guard	Digital occlusal appliance: anterior guidance

Additional Services	
Add-on	Natural palate
Spare or duplicate denture	Replace and rebuild saddles
Setup and wax only	Individual anterior or posterior teeth
Festoon and finishing only	Anterior or posterior card of teeth
Stainless steel wire clasp	Crown under partial
Thermoflex tooth-colored clasp	Attachment labor
Transfer	Rush service

Upload your files and digital Rx at **www.3dprecisiondigital.com**, or call 800-574-0721 to schedule a pickup.

PRECISION
DENTAL ARTS

Questions on a denture case?

Call before you trim. Our team is glad to help you set up for success.

800-574-0721

admin@precisiondental.info

www.precision-dental-arts.com

Twin Falls & Boise, Idaho