3M Science. Applied to Life.™

Unitek™ Treatment Management Portal | TMP

Digital Model User Guide

Digital Management For Precise Treatment

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Section 1

Introduction

Digital Solutions for Today's Modern Practice

Unitek™ Treatment Management Portal | TMP is an advanced orthodontic software platform for digital model management, treatment planning and efficient ordering of the 100% customized Incognito™ Appliance System. Unitek TMP brings the power of technology to your fingertips by providing high-quality 3D digital models, tools for orthodontic treatment planning and customized ordering of the Incognito System. Through advanced technology and design, Unitek TMP provides you with the opportunity to streamline your treatment planning and maximize your office efficiency.

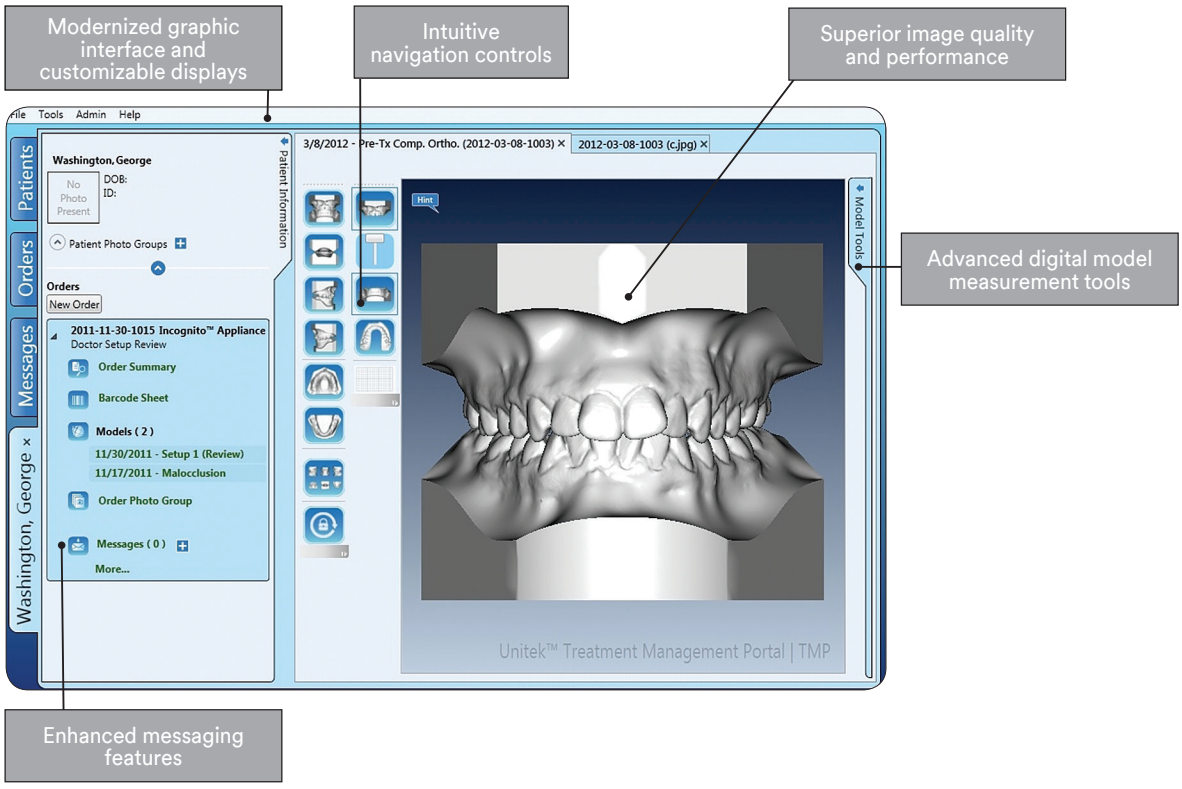
Efficiency Through Technology

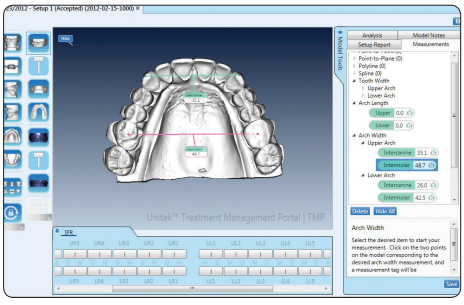
The objective of the development of Unitek TMP was to create an advanced software program that could enable orthodontic specialists to take their practice and processes into the digital realm. With the implementation of the Unitek TMP platform, practices can:

- Virtually display, analyze and archive digital study models for analysis and treatment planning
- Enhance patient consultations with 3D digital model
- Increase office productivity and efficiency through digital workflows
- Reduce onsite storage through the reduction of plaster models
- Manage patient data and integrate with practice management systems

An Interface with Real Power

An intuitive page layout and user-friendly controls make it easy for doctors and staff to use Unitek™ TMP. Within the Unitek TMP environment, users can efficiently access patient information, manage treatment objectives and build customized patient records. The Unitek TMP interface provides high-quality graphics, analysis tools and a communication platform that allows for efficient communication with the 3M team.





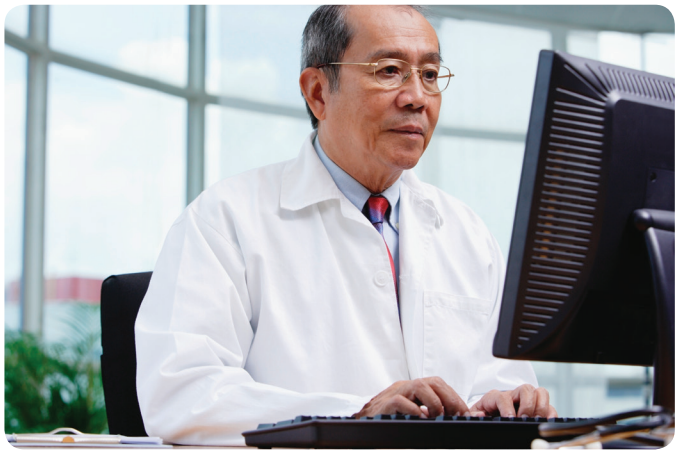
High-quality 3D model imaging allows for advanced analysis and review of patient information. Customize the view - including lighting, shading and color - to meet your needs and analyze the digital model, all within the software.

Precise Treatment Made Easy

Unitek™ TMP redefines the science and process of digital study models and advanced treatment planning. Innovations in digital model imaging combined with a state-of-the-art interactive environment provide instant resources to effectively customize treatment options. Unitek TMP features comprehensive patient treatment planning information and tools for precise model analysis, such as point-to-point measurements, Bolton analysis, arch length, overbite and overjet.

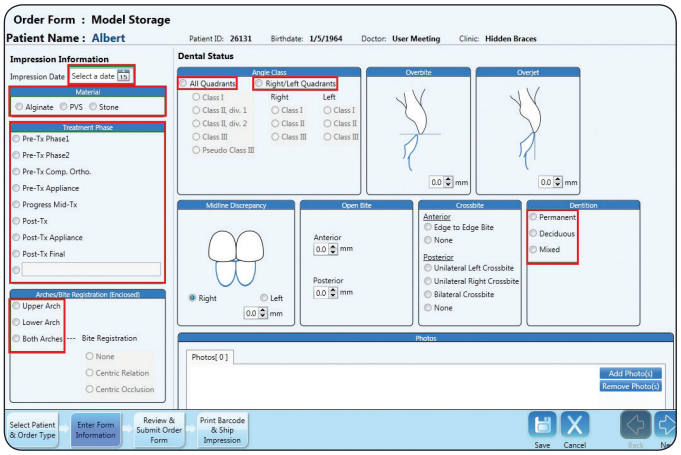
Virtual Storage. Instant Access.

Unitek TMP creates an environment and workflow where patient information is easily and instantly accessed digitally, eliminating the need for physical models and reducing storage needs inside and outside of the practice.



Customized Ordering

Managing, customizing and placing orders is easy with Unitek TMP. Through advanced communication tools, you can reduce errors and increase accuracy via the improved order wizard.



Section 2

Intraoral Photographs

Facial Photograph Requirements

- Standardized facial photographic prints in color
- Patient's occlusal plane parallel with the top and bottom of the mount
- One (1) frontal view in maximum intercuspation
- Two (2) lateral views (right and left)
- Free of distractions (i.e., cheek retractors, labels and fingers)
- Lighting should reveal anatomical contours with minimal shadows
- Use two (2) cheek retractors
- Free of saliva and/or bubbles
- Clean dentition
- Photographs should be as close to a 1:1 relationship as possible

Criteria for Accurate Intraoral Photographs

Right Profile

- Anterior should display the entire ipsilateral maxillary central incisor
- Posterior should include the entire first molars
- All attached gingiva should be visible
- Occlusal plane should be parallel to the frame

Right Profile

Frontal Profile

- Occlusal plane should be horizontal and bisecting the photograph
- There should be equal display of the posterior dentition
- Teeth in occlusion

Frontal Profile

Left Profile

- Use same guidelines as Right Profile smile
- Anterior should display the entire ipsilateral maxillary central incisor
- Posterior should include the entire first molars
- All attached gingiva should be visible
- Occlusal plane should be parallel to the frame

Left Profile

Section 3

Impression Taking

Recommendations for a Quality Impression

USE	WHY
Long-lasting alginates – 100-hour pour	Dimensionally stable
Disposable plastic trays	Scanner able to differentiate between material and impression trays. No Polystyrene trays
Flat wax bite registrations	Crop region of scanner able to read bite registration
Photographs	Critical for the technician to establish correct occlusion of patient
Proper shipment of impression and bite registration	Prevent damage of impression and bite registration during shipment

Material Information

Alginate impression material is universally used for taking models for study, pre- and post-treatment and lab appliance work. Alginate impressions are also used for fabricating digitally scanned models, splints, bleaching trays and night guards.

Characteristics of an ideal alginate impression material:

- Cost effective
- Easy to mix
- Nice flow properties
- Sufficient strength
- Acceptable working and set times
- Long shelf-life
- Available in different flavors

Working and Setting Times

*Follow manufacturer instructions for use for working and setting times

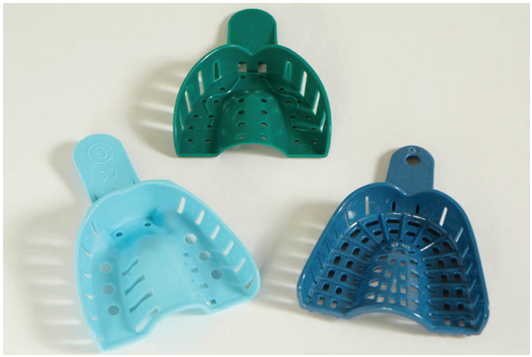
Alginate Working Time	Alginate Setting Time
Normal/Regular Working Time — 1-2 minutes	Normal/Regular Setting Time — 2-4 minutes
Fast Working Time — 1 minute	Fast Setting Time — 1-2 minutes

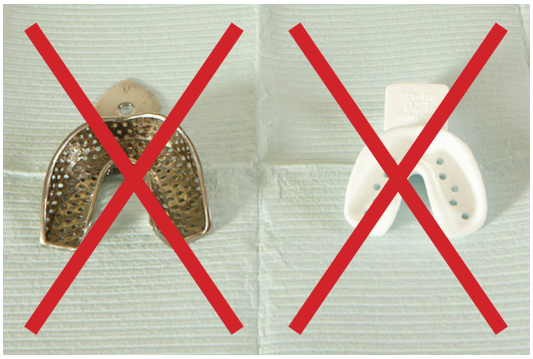
Tip: Cooler water increases the working time with a slower setting time. Warmer water decreases the working time with a faster setting time.

Impression Trays

Plastic disposable trays are recommended for taking alginate impressions. The best plastic trays have many perforations to obtain a good mechanical lock between the alginate material and the impression tray to prevent distortions. Plastic trays do require the application of alginate adhesive 5-10 minutes prior to taking the alginate impression.

Metal impression trays are not recommended for Unitek™ Digital Models due to the interference with the scanner. Moreover, 3M does not return metal trays to practices. Polystyrene trays are not recommended due to the inability of the scanner to differentiate between the Polystyrene trays and the alginate material, which would result in a poor quality digital model.



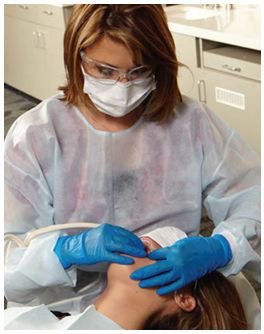


Chairside Preparation

- Alginate impression material with measuring scoop and beaker (100 hour pour)
- Hand mixing bowl
- Spatula (autoclavable)
- Plastic disposable perforated impression trays
- Horse shoe wax bite registration material
- Square wax ropes
- Alginate tray adhesive
- Gloves

Patient Exam

Patient's teeth should be free of plaque and food debris prior to taking impressions for Unitek Digital Models. If needed, request patient to brush teeth. A mouthwash rinse prior to taking an impression is recommended to temporarily dry out the oral cavity.



Sizing the Impression Tray

Always try-in patient tray for correct sizing so that you can obtain all the necessary anatomy as well as the distal aspect of the terminal molars. Over-sizing the tray can gag the patient as well as deliver a poor quality impression. Under-sizing the tray typically requires a re-take due to missed anatomical coverage.

CAUTION: The tried-in impression tray is saliva contaminated, therefore be mindful if using paint-on adhesive to prevent cross contamination.

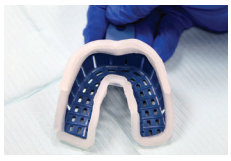
Dry the impression tray with a paper towel and place utility wax on the periphery of the tray. Change to fresh gloves to prevent cross contamination of saliva.

Tip: Utility wax dams the impression material, preventing flow into the back of the patient's throat, as well as cushioning soft tissue.

The use of tray adhesive prevents the impression from shrinking away from the sides of the tray and distorting.

Impression Tray Preparation

Spray with alginate tray with adhesive. If paint-on adhesive is used, do not cross contaminate the tried-in impression tray with the paint-on adhesive.



Tip: Use utility wax to help maximize anatomical coverage.

Alginate Mixing

Ratios - All alginate impressions are made from a 1:1 powder to water ratio. Typically mandibular impressions require two scoops and maxillary impressions require three scoops of powder.

A. Fill water measuring device to appropriate level.

B. Pour water in bowl. Always place water in bowl first to prevent a grainy mix.

C. Add appropriate measured powder scoops. Evenly level off the measured scoop.

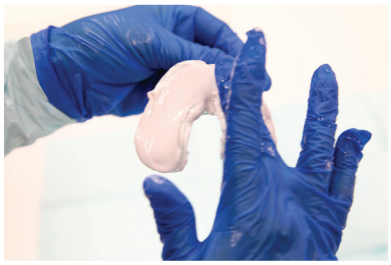
D. Wet all powder particles to prevent losing some of the powder during mixing which can affect the 1:1 powder/water ratio.

E. Spatulate material against the sides of the bowl to obtain a creamy, homogenous mix.

Tray Loading

A. Scoop half of the mixed material and load half of the impression tray.

B. Load the other half of the impression material into the tray and spread evenly with a spatula.



C. Soak the top of the impression with cool water to smooth the material. This facilitates even flow of the alginate material over the teeth and soft tissue.

Seating Impression - Mandibular

Alginate material should look smooth just prior to seating. To take a lower impression, have the patient seated in an upright position and seat the impression from posterior to anterior allowing the material to flow forward into the oral vestibule. This technique maximizes anatomical coverage while it minimizes the incidence of gagging the patient.

A. Operator stands in front of the patient while seating the lower impression tray to ensure the patient's midline is lined up with the center of the tray.

Tip: Instruct the patient to partially open mouth. If patient opens too wide, the tray will not enter the mouth because the buccal muscular is too tight.

B. Insert tray from the side.

C. Center tray over mandibular dental arch.

D. Press down from the posterior to the anterior, allowing the mixed alginate material to flow forward, capturing the vestibule and attached gingival height. This prevents flow down the patient's throat and maximizes gingival reflection coverage.

E. Instruct patient to elevate tongue. Operator firmly holds the seated tray with even bilateral pressure until completely set. Never ask the patient to hold the tray because it can easily be displaced and become distorted.

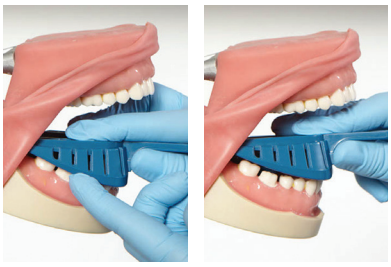
Tip: Place a little of the mixed alginate material on the operator's gloved hand to verify that the material has set.

Removing Impression - Mandibular

Once the material is set, instruct patient to slightly open mouth. If patient opens too wide the cheek muscles create a tight seal between the tray and the cheeks which makes it very difficult to remove and may be uncomfortable for the patient.

A. Operator inserts their index finger into the inside of patient's cheek. This helps to break the seal between the buccal mucosa and the impression tray.

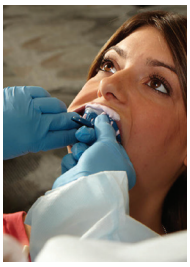
B. Tuck finger under tray periphery to break seal.



C. Place thumb under handle, rest fingers on top of tray. This will prevent contact of the upper incisors, and it will also prevent fracturing of the upper incisors from banging the impression tray on the incisors during tray removal.

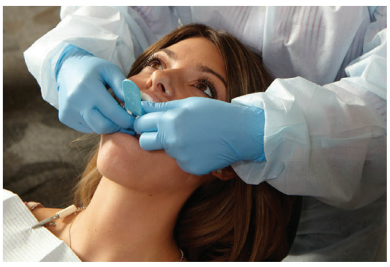
D. Remove with one quick snap out motion.

Seating Impression - Maxillary



A. Operator stands to the side of the patient and seats the upper impression, ensuring that the maxillary midline is lined up with the center of the tray.

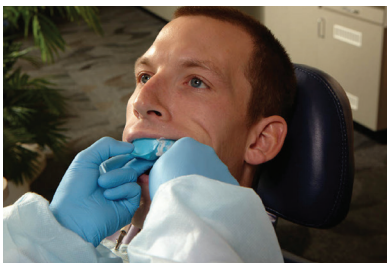
B. Press up from the posterior to the anterior, allowing the mixed alginate material to flow forward, capturing the vestibule and attached gingival height. This prevents flow down the patient's throat and maximizes gingival reflection coverage. Palpate upper lip and philtrum area to maximize musculature coverage.



C. Ensure the impression tray is centered over the upper arch while firmly holding impression tray in place until completely set.

Tip: Place a little of the mixed alginate material on the operator's gloved hand to verify that the material has set.

Removing Impression - Maxillary

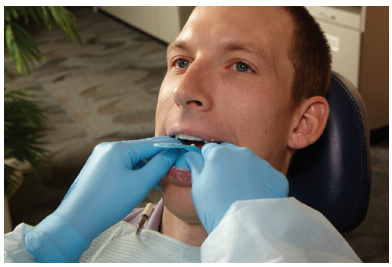


A. Once the material is set, instruct patient to slightly open mouth. If patient opens too wide the cheek muscles create a tight seal between the tray and the cheeks, which makes it very difficult to remove and may be uncomfortable for the patient.

B. Operator inserts finger into the inside of patient's cheek. This helps to break the seal between the buccal mucosa and the impression tray.

C. Tuck finger under tray periphery to break seal.

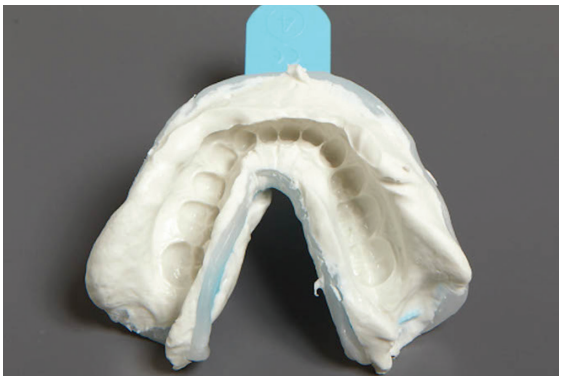
D. Place thumb under handle, rest fingers underneath the tray. By resting fingers underneath the tray you will prevent contact of the lower incisors and fracturing of the lower incisors from banging the impression tray on the incisors during tray removal.



E. Remove with one quick snap out motion.

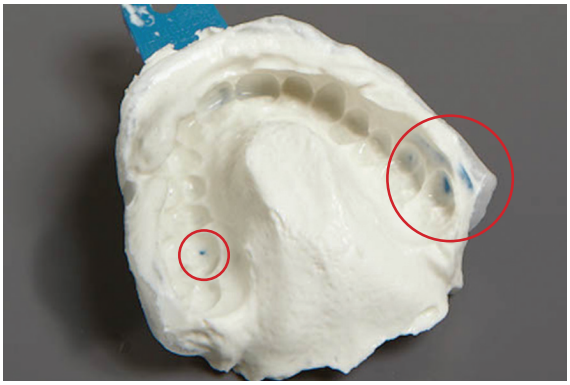
Impression Inspection

Before shipping the alginate impression, it is important to inspect the impression for any defects. A good digital scan requires an accurate and detailed impression. Be certain the intended anatomy is present, i.e. clear gingival margins, muscle attachments and distal of the terminal molars. Look for the following impression defects prior to shipment of the impression in order to receive a quality digital scan.

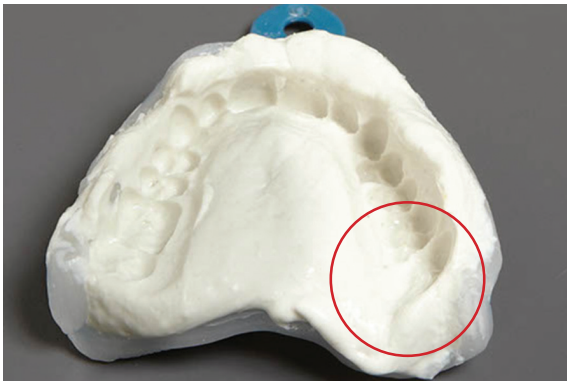


- Presence of lip or unwanted anatomy from over-sizing tray
- Missing anatomy from under-sized impression tray
- Tray show-through
- Voids or other defects
- Air bubbles
- Large drags or tears
- Insufficient attached gingiva
- Impression pull away from tray
- Palate missing or deformed

Unacceptable Impressions



Voids, bubbles, tray show through



Voids, show through, did not completely capture molars[1]

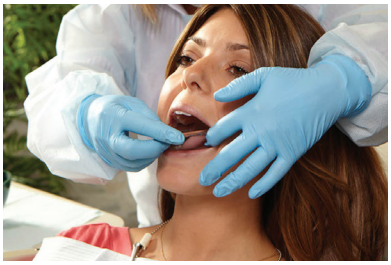
[1] Refer to Section 5: Troubleshooting Impressions. Page 21

Bite Registration Technique

A bite registration may be made with a wax wafer or Polyvinylsiloxane (PVS) impression material.

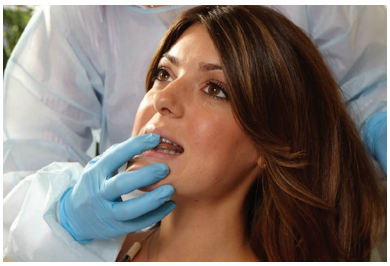
Bite Registration with Wax Wafer

A. Soften bite wafer in warm water.



B. Have patient bite into heated wax wafer in centric occlusion.

C. For Class I or II bite registration, press softened wax against maxillary central incisors only, creating a small upward right angle bend. Keep bite registration as flat as possible, other than this slight right angle, at this central incisal edge so that the scanner can accurately read it.



D. For Class III, press a downward right angle bend over mandibular central incisors. Keep bite registration as flat as possible, other than this slight right angle. Deformation will cause the scanner not to read the bite registration accurately, resulting in poor bite registration of the digital model.

Acceptable Wax Bite Registrations

Good wax bite registration

Unacceptable Wax Bite Registrations

Insufficient detail

Too much deformation

Distorted

Bulky

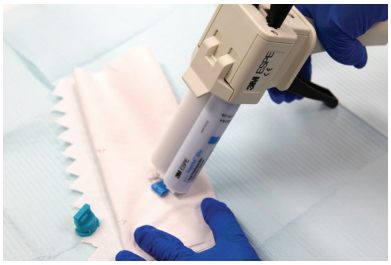
Polyvinylsiloxane (PVS) Bite Registration

Polyvinlysiloxane impression material offers excellent dimension stability during transportation to the 3M digital lab. 3M provides a Petri dish to maintain the integrity of the disinfected and shipped PVS bite registration of the patient. Ideally, the PVS bite registration should be as flat as possible to obtain an accurate scan of the registration of the digital model for optimal inter-cuspation.

It is recommended to "bead" material from the cartridge until you see a homogenous flow of the catalyst and base. Attach the appropriate mixing tip. The mixing tips are color coded and have the right amount of helixes to obtain a homogenous mix of the material to obtain a PVS bite registration on the patient. Have the patient open mouth wide, gauze dry or air dry the occlusal surface of the teeth before syringing directly onto the occlusal surface. The following steps are important to obtain an accurate bite registration.

A. Load cartridge into the delivery mixing gun.

B. Remove cover from the tip of the cartridge.



C. Bead PVS bite registration material until material beads homogenously. Then place the mixing tip onto the cartridge.

D. Air dry occlusal/incisal surfaces of the lower dentition. Place mixing tip on the terminal molar and begin to syringe the PVS bite registration material in a “beading fashion” about 4 mm high. Avoid excessive thickness or thinness, (beading was done 4 mm high for continuous even distribution). It is important to keep mixing tip immersed in the bite registration material to prevent air bubbles and voids.

E. Bead along the right posterior to the left canine and stop.

F. Go to left posterior and bead the PVS bite registration material to the left canine overlapping the anterior teeth again for adequate coverage.

G. Wait until set (per manufacturer’s recommendations).

Tip: To ensure centric occlusion, ask the patient to roll the tip of tongue to the roof of the mouth forcing the condyles back for an accurate bite registration.

H. Instruct the patient to bite into the PVS material in centric occlusion.

For Class I or II bite registration, press softened PVS Material against maxillary central incisors only, creating a small upward right angle bend. Keep bite registration as flat as possible other than this slight right angle at this central incisal edge so that the scanner can accurately read it.

I. Instruct patient to open wide as the operator carefully teases the bite registration off the occlusal surfaces of the teeth while maintaining the integrity of the bite registration.

J. Rinse the bite registration under cool running water to remove bio-burden. The operator must then use an intermediate level disinfectant to properly disinfect both sides of the bite registration prior to placing it into the petri dish for shipment.

Acceptable PVS Bite Registration

Tip: If operators remove bite registration too quickly, the bite registration may inadvertently tear or break in half, which will require a re-take of the bite registration.

Unacceptable PVS Bite Registration

Multiple piece bite registration

Distorted

Disinfection of Impression

A. Rinse front and back of impression and bite registration under cool water prior to disinfection to remove bio-burden.

B. Disinfect with an intermediate level disinfectant spray. A spray disinfectant will provide full coverage of appropriate disinfection of the impression. Leave disinfected impressions undisturbed following the manufacturer's recommended disinfection time (typically 10 minutes).

C. Dampen paper towel.

D. Wrap impression in a dampened paper towel to preserve impression during shipment.

E. Place wrapped impression into plastic bag to get ready for shipment.

Tip: The dampened paper towel is critical to ensure dimensional stability during shipment.

Section 4

Packaging and Shipment

A. Place disinfected bite registration into Petri dish to maintain its integrity and prevent deformation during shipment. Place Petri dish in bottom of the box.

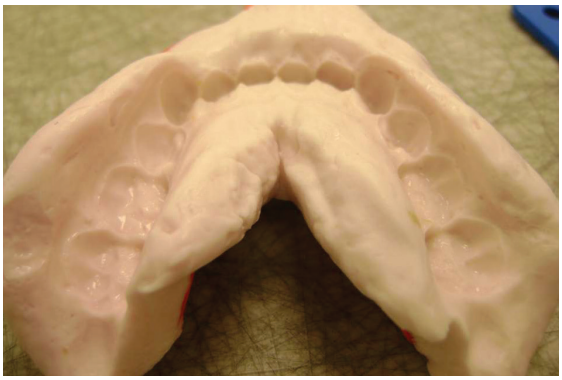
B. Place each moist paper towel wrapped disinfected impression in a plastic zipper bag.

C. Write patient's case ID number on the outside of the box. Use Unitek™ Digital Models box with completed lab order form. Order form is folded and placed on top of the impressions.

Section 5

Troubleshooting Impressions

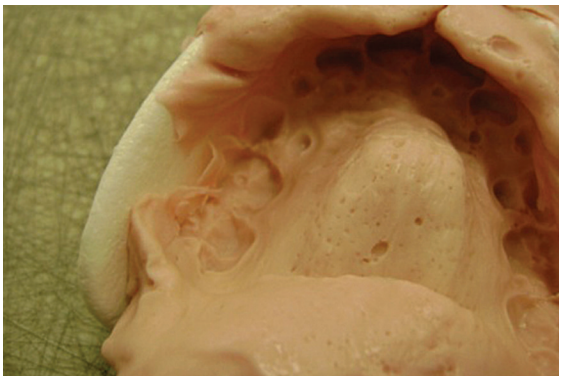
Deformed Impression



Cause: Poor distribution of impression material

Solution: Load impression material evenly into impression tray. For lower impression trays, load half the tray first followed by loading the second half of the tray. It is not recommended to load the lower tray with impression material all at one time.

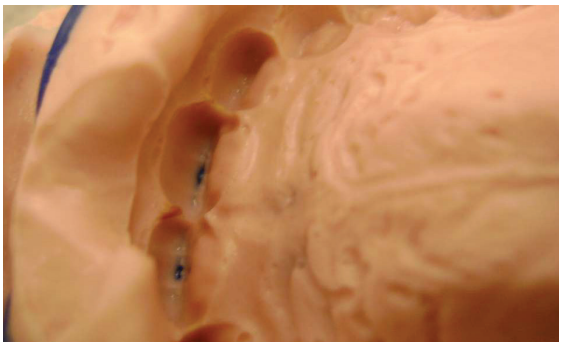
Void in Impression



Cause: Insufficient impression material

Solution: It is recommended to use three scoops of alginate impression material for upper tray impressions. Use two scoops of alginate impression material for lower tray impression. Distribute the alginate material evenly in the impression tray. For upper tray impressions, press up from posterior to the anterior to allow the mixed alginate material to flow forward. Ensure the impression tray is centered over the upper arch while firmly holding impression tray in place until completely set.

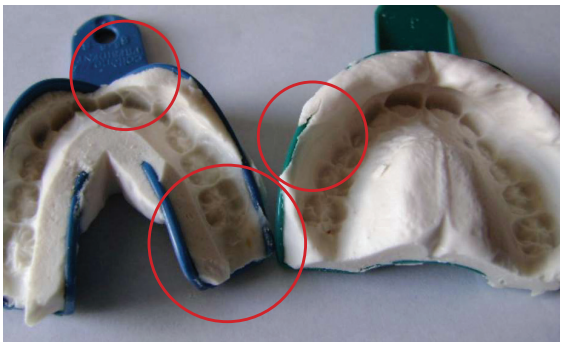
Impression Bite-through



Cause: No presence of utility wax around periphery of the impression tray

Solution: Utility wax adds height to the impression tray which causes resistance in the oral vestibule to help prevent the teeth from hitting the tray bottom, causing impression bite through.

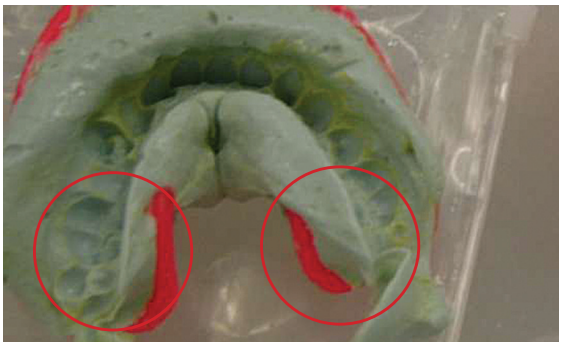
Soft Tissue Missing



Cause: Insufficient impression material and poor distribution of alginate impression material in the impression tray

Solution: It is recommended to use three scoops of alginate impression material for upper tray impressions. Use two scoops of alginate impression material for lower tray impression. Distribute the alginate material evenly in the impression tray.

Incorrect Tray Size



Cause: Incorrect impression tray size

Solution: Always try-in impression tray for correct sizing so you can obtain all the necessary anatomy as well as the distal aspect of the terminal molars. Undersizing the impression tray typically requires a re-take due to the missed anatomical coverage.

Smashed Impression

Cause: Placement of impression in shipping box

Solution: If both impressions will not fit into the 3M shipping box along with the bite registration, you may use two separate boxes. Place patient ID on both boxes and tape boxes together.

Missing Anterior Dentition

Cause: Insufficient amount of impression material and tearing of impression upon removal

Solution: It is recommended to use three scoops of alginate impression material for upper tray impressions. Use two scoops of alginate impression material for lower tray impression. To prevent tearing of impression material, follow manufacturer recommended setting time. Use alginate tray adhesive for added adhesion of the alginate material to the impression tray.

Section 6

Using the Software (Quick Start Guide)

	Minimum Requirements	Recommended
Processor	Intel® or AMD 1.6 GHz single-core or faster; 32-bit(x86)	Intel® Core i7 2GHz 4-core or faster (64-bit)
RAM	1 GB (32-bit) or 2 GB (64-bit)	2 GB (32-bit) or 4 GB (64-bit)
Hard Drive	1 GB for installation and 10 GB Free Space, 5400 RPM	20 GB Free Space, 7200 RPM
Graphics Card	Onboard graphics card with 256 MB Memory that supports DirectX 9 with WDDM 1.0 or higher driver	Dedicated GPU with 1 GB that supports DirectX 11
Display	1024×768	1920×1200
Operating System	Windows® XP 32-bit or Windows 7 32-bit	Windows® 7 Professional 64-bit
Service Pack	Windows XP Service Pack 3	Windows XP Service Pack 3 or Windows 7 Service Pack 1
Connectivity	Broadband Internet connection 1.5 MB/sec	Broadband Internet connection 10 MB/sec

Log-in Process

General Overview of Software

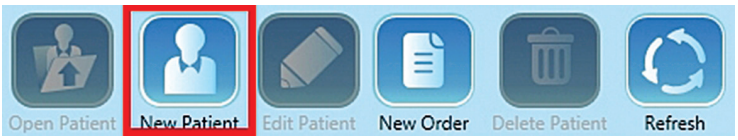
1. Log-in using username and password

   a. If new user, get username and password by contacting 3M Customer Service at 800-423-4588

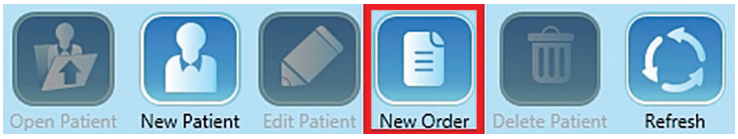
   b. If current user, username and password remain the same

Add a New Patient

To add a new patient, select the New Patient icon. Complete patient information and add a patient photograph using the file browser.

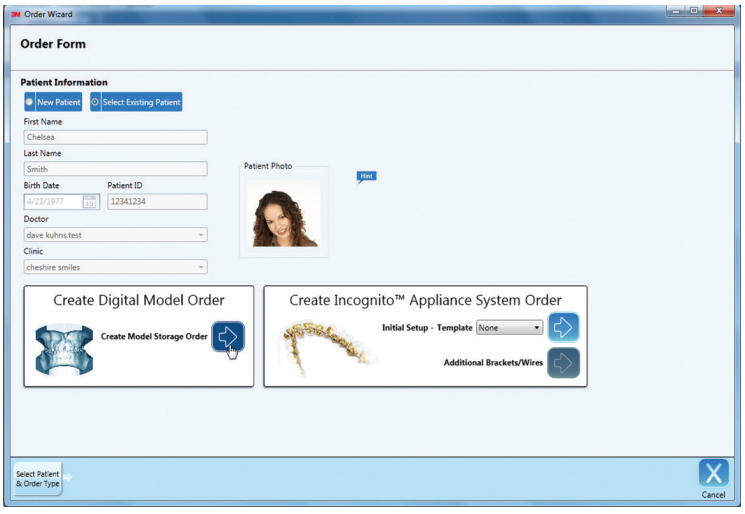


Create a New Unitek™ Digital Model Order

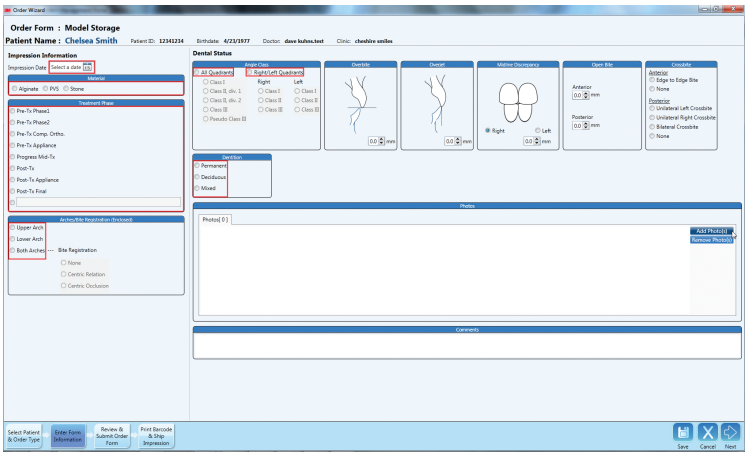


Select New Order icon. Patient information will automatically populate if patient file recently created.

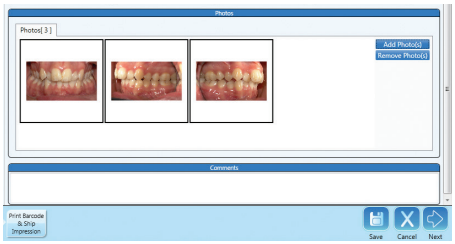
Select Create Model Storage Order



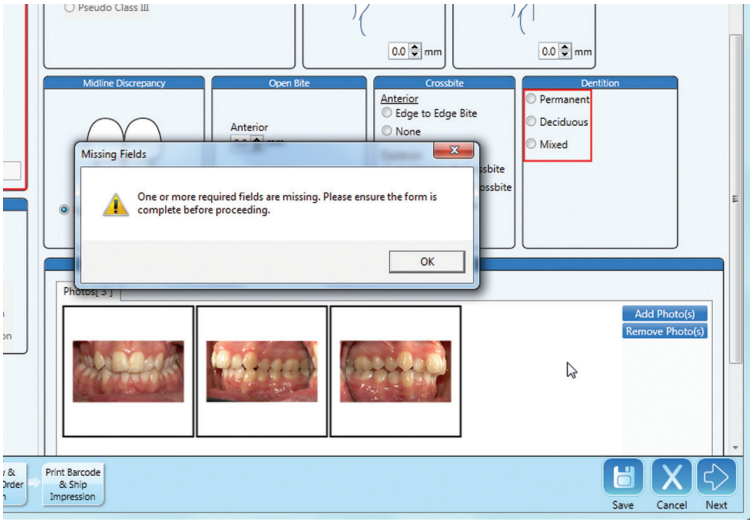
A. Add any missing patient information then select the blue arrow under "Create Digital Model Order."



B. Complete the red highlighted sections on the digital model order form.

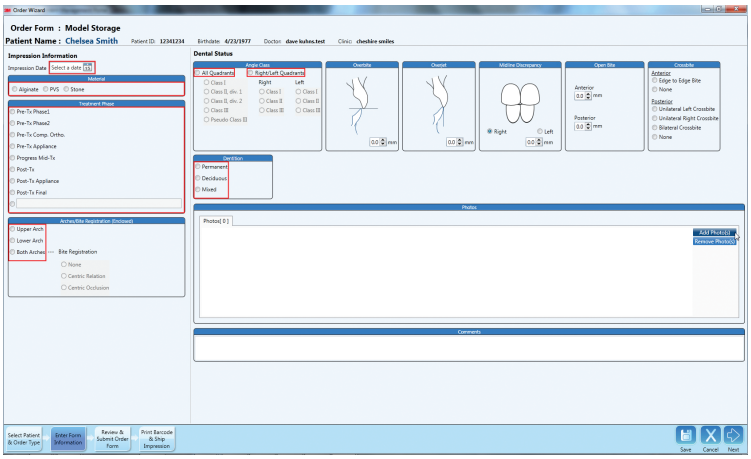


C. Add patient photograph, frontal, right and left lateral by selecting Add Photos tab. Select pictures from file browser.

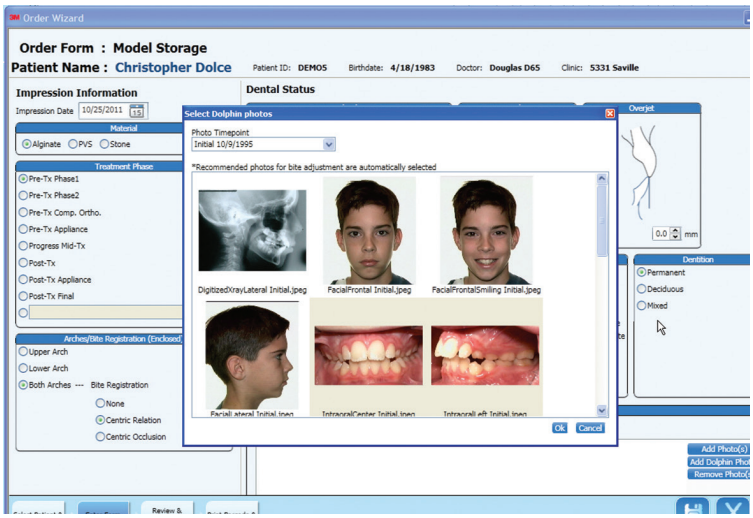


D. If any highlighted field is not completed, a Missing Fields message appears.

Attaching Photographs from Dolphin Imaging & Management Solutions Software

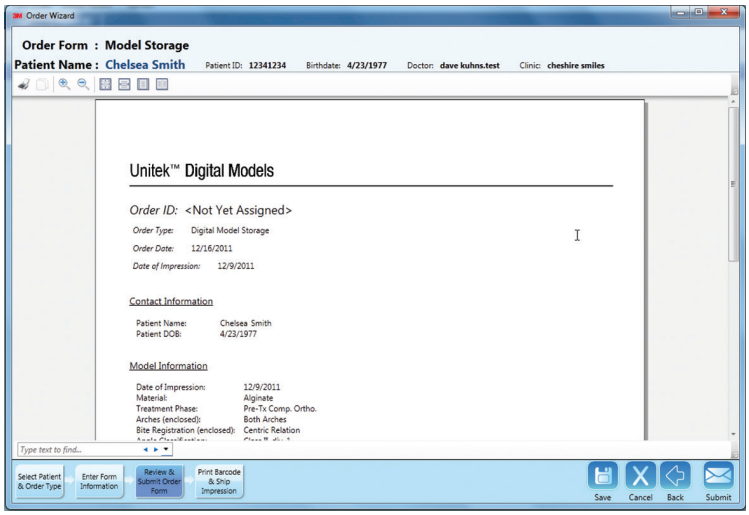


Click on Add Dolphin Photos button.



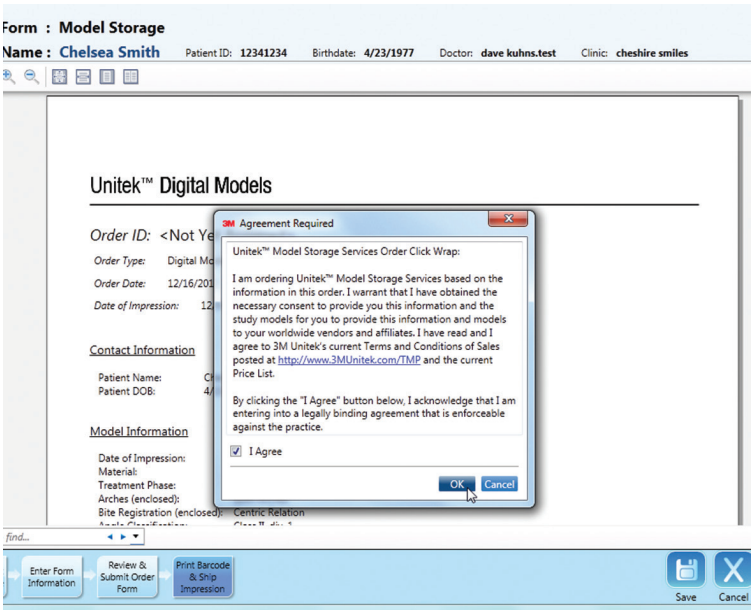
Select patient photographs from browser and click OK button.

Submit Order



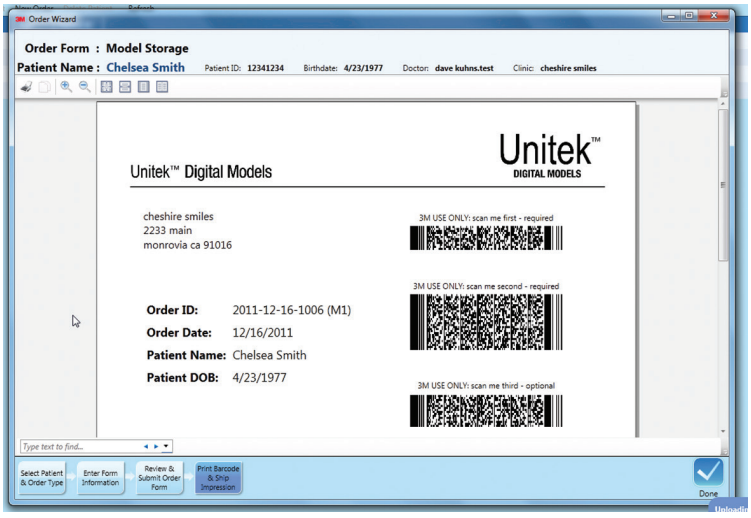
After photographs have been selected hit Next button. Review order form to verify patient information and order information. Select Submit to process model order.

Digital Model Agreement



After reviewing terms of agreement check box "I Agree" and hit OK.

Print Digital Model Order



Digital Model order with bar codes appears. Print bar code page and include with packaging box.

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