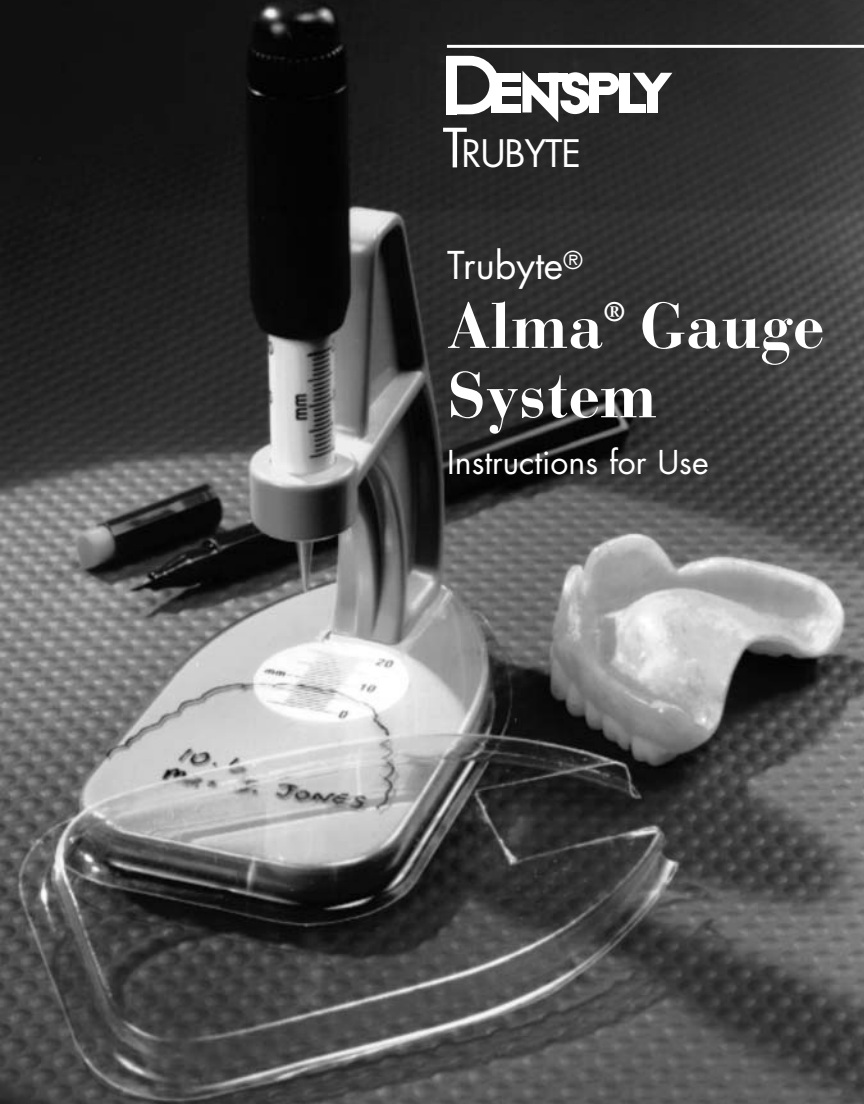


DENTSPLY
TRUBYTE

Trubyte®

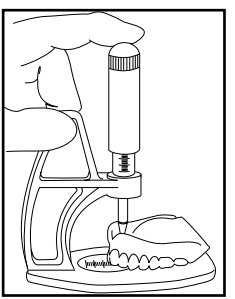
Alma® Gauge System

Instructions for Use

The Trubyte® Alma Gauge Technique
A New Level of Accuracy
in Anterior Denture Teeth Setup

In the treatment of the edentulous patient, it is important for the dentist to define the position of the anterior central incisor teeth. These teeth control the critical areas of aesthetics, phonetics and function for denture wearers. A technique has been developed which uses the incisive papilla, an important landmark, in defining and/or reproducing denture tooth position:

The Alma® Gauge Technique.



The incisive papilla and median raphe (midline) are considered stable anatomical landmarks in the maxilla, even after tooth loss. In view of this, the Alma Gauge has been developed to successfully contribute to an improved denture tooth set-up and processing technique.

With the Alma Gauge, incisal edge position is measured both in a horizontal and vertical plane relative to the incisive papilla and recorded. This establishes the exact position of the upper or lower anterior teeth in three dimensions for the dentist and the laboratory technician.

Alma Gauge "Quick Steps"

- Place an Alma Shield on the base.
- Place denture on the base with anterior teeth facing toward the vertical arm, incisal edges down.
- Push the indicator stylus point down on to the tissue side of the denture at the incisive papilla.
- Read and record the vertical scale measurement on the indicator cylinder. **This is X mm.**
- Read and record the horizontal scale measurement on the base. **This is Y mm.**
- These two readings (X/Y mm) translate to the position of the incisal edge of the central incisor teeth.
- Using a marker, trace the outline of the anterior teeth on the shield to capture the arch width and general arrangement.

I. CHAIRSIDE PROCEDURES

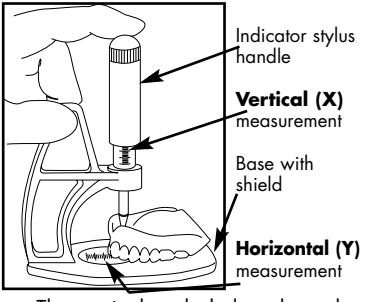
Full Denture Technique

A full patient history is recorded and measurements taken in order to establish the acceptability of the vertical dimension.

If the vertical height and freeway space are considered to be satisfactory and if the patient wants to reproduce the cosmetics of his/her existing denture teeth, then Alma Gauge measurements are taken for both upper and lower dentures, as follows:

1. An Alma Gauge shield is placed on the Alma Gauge base.

2. The denture is placed on the gauge base with the anterior teeth facing the vertical arm.
3. Pushing down on the black stylus handle will allow the stylus point to locate the incisive papilla depression in the acrylic base.

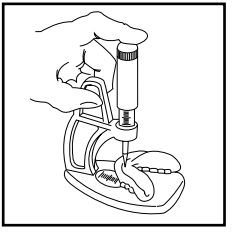


The vertical scale below the stylus handle is read first (X mm) and then a horizontal reading is taken (Y mm) on the base where the incisal edge of the teeth rest. A reading of 10X/8Y mm indicates that the incisal edge of the central teeth are 10mm vertical and 8mm horizontal to the incisive papilla.

If vertical space is not satisfactory, see "Restoring Proper VDO In A New Denture."

In the case of the lower denture, however, the ridge is subject to continued resorption. A reline-type impression should be taken inside the fitting surface of the denture and this will compensate for any gap. **(Alternatively, replace the gap with some Triad® VLC Reline® Material and take a new Alma reading.)** The Alma Gauge can now be used confidently in the knowledge that the recordings taken do relate to the current shape of the lower ridge.

If a 2mm overbite relationship is required, this has to be incorporated in the lower rim prescription. If the desired lower incisal edge position is e.g. 10X/4Y, the bite rim is requested at 2mm less on the vertical e.g. 8X/4Y. The try-in will then be 10X/4Y.



II. Use of Alma Gauge Shields

The Alma Gauge shields have been designed in order to improve the information that is passed between the dentist and the technician, and also to reduce the risk of cross infection.

A shield is placed on the base of the Alma Gauge before a denture is put into position. Two readings are then taken from the scales, as noted earlier.

A marker pen is then used to draw around the denture onto the shield to record the position of all the teeth around the arch. To adjust the shape of the bite rim, or the position of the teeth, simply revise the drawing on the shield.

The shield can then be removed from the gauge and sent to the laboratory along with the impressions and other information.

The laboratory technician places the Alma shield onto his/her gauge and can produce the bite rim, try-in and finished prosthesis to the required dimensions and arrangement, referring as needed to the graphic outline on the shield.

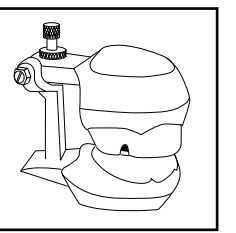
III. Restoring Proper VDO In A New Denture

If the vertical height or freeway space are not considered to be satisfactory in the existing dentures, then adjustments should be made to the Alma Gauge readings. In those cases where the teeth have worn down or the overall vertical dimension is reduced it will be necessary to increase the Alma Gauge measurements. This is achieved by adding beading wax to the existing teeth until an acceptable vertical height and labial position have been reached. Alma Gauge readings are then taken and the dimensions sent to the laboratory along with final impressions, and a request to produce bite rims of that size.

IV. LABORATORY PROCEDURES Full Denture Technique

In the laboratory, the Alma Gauge is used by the technician when constructing the bite registration rims. When final trimming is performed on the wax bite rim, they are reduced to the dimensions prescribed by the dentist (i.e.: X/Y mm Alma measurements) and checked by means of the Alma Gauge. The width of the rims should be similar to denture teeth to minimize interference with phonetic evaluations.

In the dental office this technique saves time at chairside, and assures proper bite rim dimensions. Oftentimes, the bite rim(s) require little modification at this stage, and the dentist can focus on finalizing the plane of occlusion and centric registrations.



After wax bite rim try-in, the rims are returned to the laboratory along with all the other details recorded, e.g. smile line, center line, etc. The models are then articulated and a try-in is constructed by the technician. Once again the Alma Gauge confirms that the incisal edges of the teeth relate to the incisive papilla as requested.

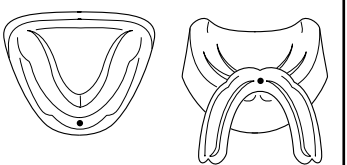
Back in the dental office, the teeth are tried in the patient's mouth and centric registration, vertical dimension, cosmetics, etc. are examined. If the try-in is not correct, specific details can be given for any change in tooth position, e.g. "change 10X/8Y to 8X/8Y", rather than the usual requests to "bring the teeth in a little, they are too prominent". When the try-in is acceptable to both dentist and patient, the teeth are returned to the laboratory with the final X/Y dimensions for processing,

finishing and polishing.

The finished case can also be checked in the lab with the Alma Gauge in order to establish that no flasking error has taken place and the teeth have been processed to the prescribed measurements.

V. Weak Incisive Papilla or Central Position

Occasionally, the incisive papilla may be rather flat, or in the lower ridge, the central position may not be obvious. In these circumstances the Alma Gauge measurements can be enhanced by marking a spot in the patients mouth that appears central in position. This applies to both the upper or the lower arch. A tissue marking pen can be used for this mark before impressions are taken.



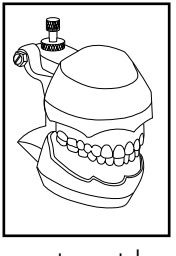
The imprint of the mark will be reproduced in the impression and subsequently can be noted on the models.

Accurate transfer of this mark from the tissue surface will help insure that all Alma Gauge recordings will be consistent.

The technician in the laboratory can perform a similar task by placing a fresh mark over the spots, allowing a mark to be passed onto the wax registration rims and later on to the try-ins. All Alma Gauge readings performed during a case will be taken from the same position.

VI. Denture Duplication Technique

With the assistance of the Alma Gauge, a reliable technique can be used that will allow dentist and technician to create an accurate duplication of existing dentures. The Alma Gauge confirms the exact position of the teeth relative to the soft tissues - a critical first step in denture reproduction.



First, examine the mouth and the existing denture. Check the vertical dimension and amount of freeway space. If these measurements are found to be adequate, Alma Gauge measurements are taken of both the upper and lower existing dentures and recorded for use by the technician. Reline type impressions are then taken inside the old dentures, preferably with the patient gently biting in centric occlusion. A wax bite of this position can be recorded if it is felt that the teeth cannot be easily occluded by the technician. Alginate impressions can also be taken of the existing dentures in order to allow the laboratory to see the relative positions of the teeth to each other.

The technician can now pour a model and articulate the dentures in the recorded occlusal relationship. The old dentures can be returned to the patient because the laboratory technician has sufficient information to set the teeth in the desired position.

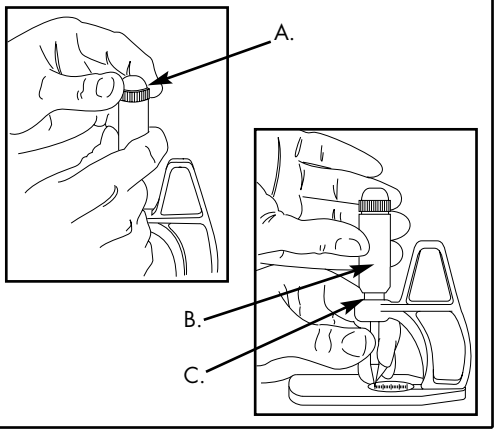
With the use of the Alma Gauge measurements, the anterior teeth can be placed in exactly the same position as the old denture. Also, by referring to the models of the old dentures, it is easy to arrange the teeth in the same type of relationship. Finally, at the try-in stage the dentist can confirm that the position of teeth is the same as that of the old dentures.

VII. Lost Denture Reproduction

With Alma Gauge measurements on file, patients who misplace or break their denture can now receive a temporary replacement in less time. Anterior tooth position can be quickly reestablished and a decision made as to an interim prosthesis.

To Recalibrate Your Alma Gauge.

Unscrew the Indicator Stylus Cap (A.) but do not remove it from the handle. Push the Indicator Stylus Handle all the way down (B.). If the bottom edge of the handle does not exactly read "0"mm turn the handle until it does (C.). Tighten the cap before releasing the handle and your vertical (X) measurement will be accurate.



First in Dentistry™

DENTSPLY TRUBYTE

DENTSPLY Trubyte
DENTSPLY International Inc.
York, PA 17405-0872

Form No. 4188-A Printed in U.S.A. 11/96