

ARCUSdigma – The components:
Sensor System and Attachments



- Headbow
- Receiver with 4 ultrasonic microphones
- Transmitter with 3 ultrasonic transmitters and lower jaw attachment
- Bitefork (upper jaw)

FIGURE 3

ARCUSdigma – Articulator Adjustment:
Recording the Upper Jaw Position



Impressions on the bitefork for fitting in the patient's mouth, and articulating in the articulator.

FIGURE 4

With the ARCUSdigma, a digital movement analyzer, this relationship is captured and redefined with the use of a single stand-alone bitefork, which snaps into one of two positions on a special support jig. This support jig (Fig. 1) magnetically fastens to the lower member of the Protar articulator.

There is no need to transport the articulator to the lab, only the casts, which attach magnetically to the articulator, travel back and forth. Thus only one articulator is needed and the package transfer of models only is mail manageable. In the past, the major disadvantage of all articulator systems was the need to buy multiple units, since the case was not transferable between articulators.

Systems that claimed the ability to transfer did not stand the test of time and thousands of dollars were spent to acquire more and more articulators.

An equally frustrating requirement was the need for programming of the posterior determinants of occlusion; a daunting task, which required complicated intraoral appliances and hinge bows attached to recording styli and fixed tables.

Enter the ARCUSdigma, a handheld virtual

articulator. A simple to place headbow is positioned behind the ears. The nasal support is adjusted to the patient's nose and the registration can begin. The ARCUSdigma functions as a three-dimensional ultrasonic navigation system.

Using the new bitefork and headbow, an articulator-related registration is created which transfers the condylar centres and the horizontal plane of the articulator from the transmitter frame to the head of the patient.

When prosthodontic treatment is needed due to breakdown of the stomatognathic system, for whatever reason, simulation of the patient's mandibular movements is mandatory.

The condylar spheres are exactly defined coordinates and by entering these coordinates into the software of the system, the condylar centres and the horizontal plane of the articulator become virtually connected to the transmitter-bitefork assembly.

The central aim of an articulator-related registration is to record sagittal and horizontal angles. These angles are essential in programming an adjustable protar so that a mounted cast will imitate the patient's mandibular movements.

The Protar system of articulators was developed to orient the casts parallel to Campers Plane (Fig. 2) and thus parallel to the desktop.

This orientation is a decided advantage when