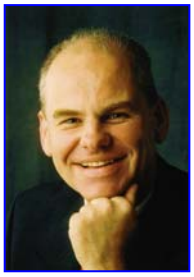
B BRAUN Aesculap Dental
SHARING EXPERTISE

New instrument set for oral surgery – minimalism and functionality

Two Working Ends in One Ergonomic Handle



There is a new instrument set for oral surgery, with a high-tech handle designed for safe and fatigue-free surgical operation, making effective use of both working ends.

With their minimalist *ERGOPLANT* hand instrument set, Aesculap (Tuttlingen), the specialists in surgical instruments have come up with an intelligent solution for the indications bone splitting, bone condensing and sinus elevation.
Let's start by looking at the design of the *ERGOPLANT* instruments with their axially symmetrical handle, which is made either of high-grade PEEK (PolyEther Ether Ketone) plastic material in royal blue or, for the forceps, of high-grade surgical steel (fig. 1). The use of PEEK ensures gap-free enclosure of the one-piece stainless instruments shafts, while the ergonomic handle with its rotational symmetry and golf ball-like surface finish guarantees fatigue-free working in the oral cavity.
Fig. 1: The *ERGOPLANT* instrumentation

This design concept and the waisted handle shape produce excellent handling characteristics. The silky-matt luster of the working ends prevents irritating light reflections during the concentrated work of a surgical intervention. Naturally, all *ERGOPLANT* instruments are suitable for steam sterilization.

Fig. 1: The *ERGOPLANT* instrumentation

Let's move on to an aspect that is rarely mentioned: unhelpful over-redundancy of instruments, and how to avoid it. The *ERGOPLANT* instruments meet all the requirements of increasingly specialized users while avoiding the "instrument zoo" impression so often experienced by dentists at surgical training events, with the zoo inmates usually ending up in forgotten trays or gloomy drawers. The intelligent minimalism of the *ERGOPLANT* concept, in contrast, invites the clinician to actually use these instruments throughout their service life.

Bone splitting
For bone splitting, the set offers the following instruments:

- four straight *ERGOPLANT* osteotomes of 2 – 8 mm working end width,
- two curved osteotomes, 4 mm and 6 mm working end width,
- one straight step osteotome, 6 mm width.

This instrument must be regarded as a real treasure as it can help preventing the annoying occurrence of fractures of very thin (less than 3 mm) bone lamellas, thanks to its special operating principle: In the first instance, the osteotome mobilizes or widens the bone lamella to one side only. At the same time, from a penetration depth of 5 mm, the spongiosa portion of the bone is condensed at the center of the osteotome, thus creating a "center point" for pre-drilling in preparation for implant insertion.

Bone condensing

For the bone condensing range of indications, to increase the primary stability in the maxilla with its softer bone structure, the shaft of all five bone condensers is shaped as a cone with a convex working tip. In a step-by-step procedure, starting with a very small burr hole of about 1 to 1.5 mm to preserve as much of the bone as possible, the first condenser with the smallest instrument diameter is driven into the bone. All subsequent condensers are harmonized with each other so that condensed burr hole can be created for any common implant diameter.
The size ranges of the conical *ERGOPLANT* condensers are: 2.8 to 3.5 mm, 3.5 to 4.2 mm and 4.2 to 4.5 mm, each available in either straight or bayonet shape.

Sinus floor elevation

For sinus floor elevation – or internal sinus elevation – the Aesculap set offers a selection of sinutomes. The Aesculap sinutome is characterizes by its concave shape with a circular semi-sharp working end. Also, the working shaft is not conically tapered, but shaped as a straight parallel shaft. This allows taking out scraped-off bone chips from the burr hole towards cranial. Since the metal shaft runs through the PEEK molded handle, the condenser and sinutome working ends were designed so that the *ERGOPLANT* mallet can be applied on them.
The sinutomes are available in the sizes 2.2 mm, 2.8 mm, 3.5 mm, 4.2 mm and 4.8 mm, each size in either straight or bayonet shape.

External sinus elevation

The Aesculap minimalist philosophy really comes through for the indication of external sinus elevation. All the clinician's needs for this intervention are met by just two instruments, *DX560R (fig. 2)* and *DX561R*. As we know, the successful separation of the sinus membrane from the osseous inner surfaces of the paranasal sinuses and folding of the mobilized bone lamella into the paranasal sinus is achieved not by handfuls of different instruments, but by a steady hand.

Fig. 2: One of the two instruments required for external sinus elevation – *DX560R*

Micro bone mill

It was quite a wait, but now it has arrived: the *ERGOPLANT* micro bone mill (Fig. 3) is a real gem from the German heartland of medical technology. Looking at it dismantled and placed in the storage tray, you can sense why the development took that long. Optically, the device is dominated by the royal-blue PEEK knob. The upper shell and lower bowl, the cutting disk, the milling bush and the bone chop are made of matted special steel. Cutting disks for the Aesculap micro bone mill are available for fine and coarse bone particle production. There are two dedicated cleaning instruments for the bone mill. With the fork-like working end you can push out even the smallest particles from the holes in the cutting disk. The other working end is used for scraping off the crushed bone material from the disk. For smaller amounts of bone material required for an augmentation, you can use the raspatories that form part of the instrument set.

Fig. 3: Micro bone mill – *DX801R*

The *DX252R* variant features delicate, tapered, triangular working tips. (Fig.4). The working surfaces of the *DX253R*, on the other hand, are large and rectangular at one end and small and blunt at the other.

Fig. 4: Raspatory *DX252R*, with triangular working ends.

For the transport and implantation of the crushed bone chips, Aesculap gives us the *DX555R* special instrument. One working end features an angled scoop for inserting the harvested bone chips, the other is a planar pestle for condensation (fig. 5 und 6).

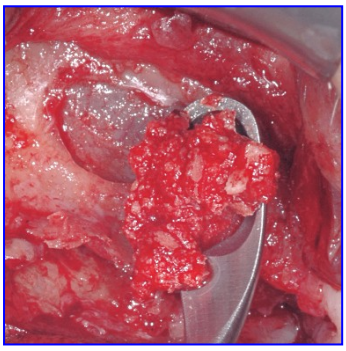


Fig. 5: The scoop end of the *DX555R* is used for inserting the bone material …

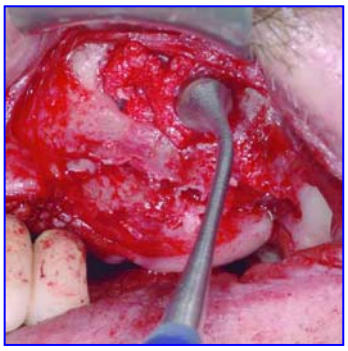


Fig. 6: ... and the pestle-shaped other working end condenses the inserted material.

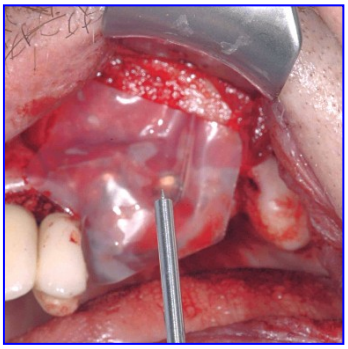


Fig. 7: The *DX600R* can be used for applying cover membranes or for creating center holes for membrane nails.

With its small surface area and the central spike, the membrane-positioning instrument *DX600R* is ideal for picking up the moist membrane (fig. 7). The spike is also useful for punching the centers for membrane nails if such are needed. The other end of the instrument is of universal use as a spatula e.g. for scraping out harvested bone chips from the raspatory.

With the *ERGOPLANT* range, Aesculap Dental is offering a practical and ergonomic set of instruments for oral implantologists – as so often in life: less is more.
Dr. Bernd Johnki (Borken).

B|BRAUN
SHARING EXPERTISE
Aesculap Dental