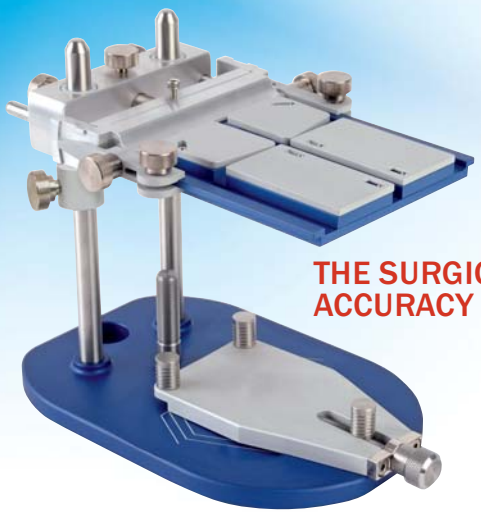
adenta LAB TEC

There is one thing different. Everything.

THE MODEL MAKER

THE SET-UP
MODEL MAKER

THE OCCLUSAL
PLANE REFERENCE



THE SURGICAL MODEL
ACCURACY DEVICE

Precise - Easy - Clean - Economical - Multi Purpose - Essential

SMART
INNOVATION

4timeLAB TEC

For diagnosis and treatment planning, orthodontists, dentists, as well as dentofacial and oral surgeons need exact study models of their patients. The standard procedures today requires to pour out the patient´s impression trays with plaster, add sufficient excess plaster in order to grind later on the base of the dental model. This process not only involves a lot of time consuming, noisy, dirty and cost intensive work, but also highly lacks the indispensable precision and aesthetics for an exact treatment planning as well as a professional case presentation to patients and societies.

Dr. Pablo A. Echarri, orthodontic specialist from Barcelona, Spain, and Claus Schendell, engineer and owner from adenta GmbH, Germany, have put together their experience of several decades in orthodontics and have developed the laboratory line adenta LABTEC. This laboratory line was developed in order to standardize, streamline, and expedite the laboratory processes for creating and modifying dental models to assure at the same time the indispensable precision, appealing optics and fine-tuning adjustments for study, surgical, and Set-Up models.

The adenta LABTEC system offers to orthodontists, oral surgeons, professional laboratories as well as to dentists the opportunity to create and modify models in a highly precise, exact, clean, faster, easier, and more economical way and also facilitates creating and modifying labial and lingual class systems.

THE MODEL MAKER
precise study models without grinding

Study models must be properly fabricated to faithfully reproduce the patient's malocclusion and to have a reliable treatment planning base. With the Model Maker (MM) exact and standardized dental models are created within 6-8 minutes without grinding and therefore also with less pollution of the working environment. By using the suitable mold size for the model base which needs to be chosen by using the engraved Mold Size Measuring Scheme on the System Base, all dental models show the appropriate levels as describe in the international guidelines for dental models. Furthermore, midline shifts as well as open bites can already be precisely placed while creating the model. The exact positioning of the Mold Tray via the three anchorage points on the System Base and the parallel insertion of the dental arches into the molds via the Positioning Plate create exact outer contours and an exact super-imposed positioning of the tuber-planes.

THE SET-UP MODEL MAKER
exact positioning and duplication

The orthodontic setup laboratory procedure involves cutting and mounting the teeth in dental arch casts, testing and changing a drawn up treatment plan based on the diagnosis until the best possible results have been achieved. As this process is very laborious, the Set-Up Model Maker (SUM) in combination with the Occlusal Plane Reference (OPR) offers a precise, secure, easy, fast, and standardized way of creating and duplicating Set-Up models. Models must be properly fabricated to faithfully reproduce the patient's malocclusion, then duplicated and polished to streamline the Set-up procedure. Using the Set-Up Model Maker, treatment plans become less speculative, resembling a real treatment and providing orthodontists with reliable information. The relationship of the upper and lower jaw is maintained, as any articulator mounting platform can be fixed independent of the manufacturer.

THE OCCLUSAL PLANE REFERENCE

for accurate dental modifications

Changes in the plane of occlusion lead to an alteration in function, comfort and esthetics and need to be done in a highly precise way. The Occlusal Plane Reference (OPR) allows changing the occlusion in exact single mm and degree steps in all possible directions, a total novum in orthodontics. By turning the different screws of the Multidirectional Adaptation Appliance, the Acrylic Plate can be rotated and turned in precise small steps in order to modify or maintain the occlusal plane as well as the level of the Spee and Wilson curve in regards of height, rotation, swing, and transversal inclination. Furthermore, it allows fixing the lingual or vestibular arch wire in a precise, safe, and repeatable way for indirect bonding procedures. All planned modifications can be drawn on the re-writable Acrylic Plate, such as the optimal arch form or transversal expansion.

THE SURGICAL MODEL ACCURACY DEVICE

precise oral and maxillofacial surgery

The Surgical Model Accuracy Device (SMAD) was developed in order to undertake all surgical modifications on the dental model in exact single mm and degree steps. By turning the different screws of the Multidirectional Adaptation Appliance as well as the different segments of the SMAD plate, all dental segments can be moved independently with the precision orthodontists and surgeons have been looking for. For example, front teeth segments can be vertically off-set up to 2 mm by adding 0.5mm discs. Buccal segments can be moved sagittal as well as lateral. Thus, all surgical possible movements and modifications of the jaws can be already done precisely and safely on the dental model.

THE MODEL MAKER

- precise study models without grinding in 3 steps.

With the Model Maker (MM) exact and standardized dental models are created within 6-8 minutes without grinding and less pollution of the working environment. The Model Maker (MM) is available as a single or triple version, designed to fully match the volume of small, medium, large practices, and laboratories with different model volumes.

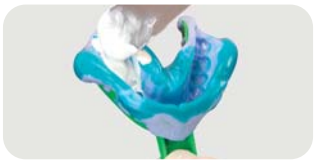
Both versions consist of the System Base with engraved Mold Size Measuring Schemes. By putting the plaster dental arch on the scheme, the appropriate size of the Model Base Mold is chosen. The dental plaster arches are created by pouring out the impression trays of the lower and upper jaw with liquid plaster. The upper jaw impression should be poured out so that the palatal bow is fully covered and the lower jaw impression tray needs to be poured out with approx. 1 cm of liquid plaster, covering completely the lower alveolar bone and the lower molar pads. The chosen Model Base Mold is inserted in the Mold Tray, which then is placed in the three holes on the System Base. This fixation ensures that the tuber-planes are exactly super-imposed and all other angles of the model base are as described in the international guidelines for dental models. The two Guiding Axes center the dental plaster arches precisely in the model bases, resulting in accurate, standardized, and esthetic dental models.

The upper side of the Model Positioning Plate is for the fixation of the finished upper jaw, the lower side has an Occlusal Gripping Device shaped as a dental arch which securely fixes the upper dental plaster arch.

In a first step, the plaster upper arch is inserted in the re-usable adhesive Easy-Ever-Stick on the lower side of the Positioning Plate. The engraved midline allows a precise centered or ex-centric positioning of the upper dental arch.

Then, the Positioning Plate is placed on the Guiding Axes with the dental arch facing downwards as far as it will go into the Model Base Mold. By turning the Height Adjusting Screw - placed between the two Guiding Axes - the height of the model base for the upper arch can be modified. After taking off the Positioning Plate, liquid plaster is poured into the Model Base Mold, then the Positioning Plate is re-inserted again. Depending on the amount of plaster, the model base height can be additionally adjusted.

When the plaster has hardened, the model of the upper jaw is taken out of the mold and is fixed onto the upper side of the Positioning Plate with the Model Fixation Screw onto the stops. Now the lower arch is fixed onto the finished upper jaw by means of a occlusal wax record, silicon, or other material. The respective Model Base Mold for the lower jaw is placed into the Mold Tray which is then positioned in the System Base. In order to achieve the optimum model base height of the lower jaw, the Distance Tube is placed over the Height Adjusting Screw and the Model Base Mold is poured out with liquid plaster. The Positioning Plate is now put onto the Guiding Axes and the lower jaw dental arch is inserted in the liquid plaster. After hardening, the lower jaw model is taken out of the mold and the accurate, standardized diagnostic model is ready.










THE SET-UP MODEL MAKER

- exact positioning and duplication

The Set-Up Model Maker (SUM) offers precise positioning and duplication of malocclusion and set-up models. It consists of the same System Base as the Model Maker and is either available as an add-on or as a whole system.

First, silicone is placed into the Occlusal Impression Tray on the lower side of the Set-Up Positioning Plate, and then the Positioning Plate is put onto the Guiding Axes and is moved downwards onto the plaster model in order to create a full and detailed arch impression including the alveolar zone, called Malocclusion Silicon Key. The height of the Positioning Plate is fixed by fastening the Easy-Height Recording Screw.

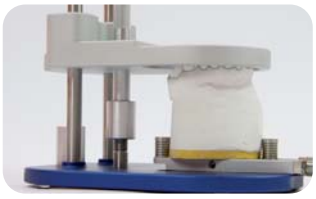
After the silicon has hardened, the malocclusion model is removed and the teeth are separated. The single teeth are replaced individually into the Malocclusion Silicon Key on the Positioning Plate.

Now the Positioning Plate is placed back onto the Guiding Axes until it reaches the Easy-Height Recording Screw.

Then the single teeth are fixed with Utility Wax onto the caped articulator plaster model and the modification of the dental arch can start, using the Occlusal Plane Reference (OPR). The same procedure is done for the lower jaw.

In the case that a non-deformable hard plaster model of the Set-Up situation is required, such as for the creation of pre-surgical diagnostic splints, a Set-Up silicon impression of the upper jaw is created the same way as described above, called Set-Up Silicon Key. The Set-Up Silicon impressions of the upper and lower jaw are then poured out with liquid plaster as described in the Model Maker instructions. After hardening of the plaster, any articulator mounting plate can be fixed in the Easy-Click Model Fixation in order to connect the plaster arches with the plaster socket. The Set-Up models are now ready to be used in the articulator with the same original 3D relationships of the Set-Up situation. Alternatively, a study model can be created with the Model Base Molds following the user instructions of the Model Maker. Thus, a non-deformable model of the Set-Up situation can be created while the articulator wax Set-Up model can be stored for additional modifications.

The caped articulator plaster model with all written information of the upper arch is fastened onto the Easy-Click Model Fixation Plate.





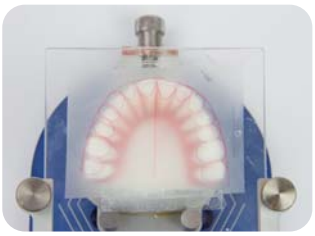


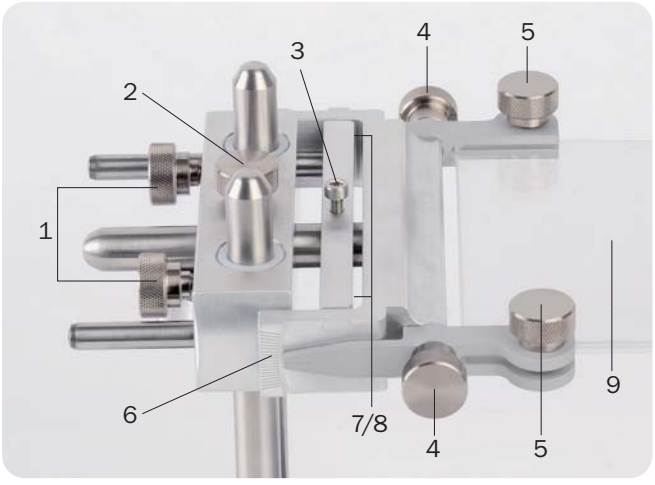
THE OCCLUSAL PLANE REFERENCE

- for accurate dental modifications

The **O**cclusal **P**lane **R**eference (**OPR**) allows through its Multidirectional Adaptation Appliance to change the occlusion in exact single mm and degree steps in all possible directions. It consists of the same System Base as the Model Maker and is either available as an add-on or as a whole system. The modifications are done based on the wax Set-Up Model created with the Set-Up Model Maker (SUM).

The Multidirectional Adaptation Appliance is used for both the Occlusal Plane Reference (OPR) as well as for the Surgical Model Accuracy Device (SMAD) and offers the following dental modifications by turning the following screws:





1 - Vertical adjustment and fixation of the occlusal plane in precise 1 mm steps.

2 - Sagittal adjustment and fixation of the occlusal plane in precise 1 mm steps.

3 - Adaptation of the transversal inclination of the occlusal plane in precise 1 degree steps based on the engraved scale 7 and 8 (left and right).

4 - Modifying the rotation of the occlusal plane in precise 1 mm steps by using scale 6.

5 - The screws serve to fix the OPR or SMAD.

9 - The transparent Acrylic Plate serves as a reference in order to level the Spee and the Wilson Curves in the Set-Up models in precise 1 mm steps

Additionally, for planning and checking the orthodontic movements, the modified occlusal VTO (Occlusal Visual Treatment Objective) by Dr. Pablo A. Echarri can be used.

THE SURGICAL MODEL ACCURACY DEVICE

- precise oral and maxillofacial surgery

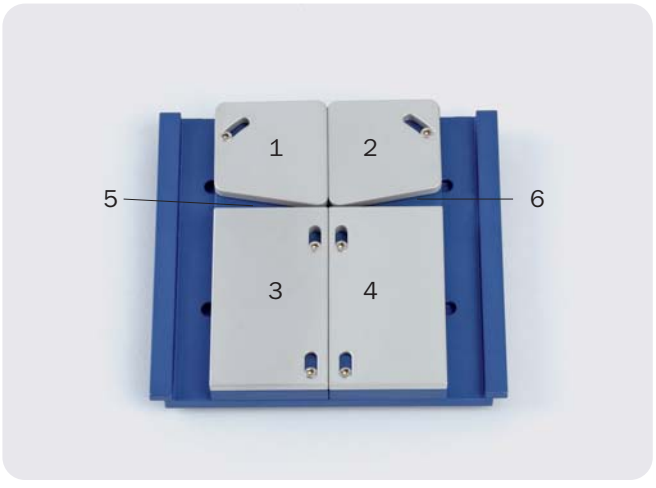
The **S**urgical **M**odel **A**ccuracy **D**evice (**SMAD**) was developed in order to undertake all surgical modifications on the dental model in exact single mm and degree steps. By turning the different screws of the Multidirectional Adaptation Appliance as well as the different segments of the SMAD plate, all dental segments can be moved independently with the precision orthodontists and surgeons have been looking for. All parts have a separate scale either in single mm or degree steps.

* = Placed up-side down for better visualization.

The segmented dental arch is precisely placed onto the lower side of the SMAD with silicone in the malocclusion situation.

The following movements can then be done individually:

The blue plates 5 and 6 can be moved separately in single mm-steps, e. g. to make a palatal expansion. The silver front segments 1 and 2 can be rotated individually in single degree steps to move the front segments. By adding or taking out 0.5mm discs, the front teeth segments can be additionally intruded or extruded up to 2 mm. By moving the plates 3 and 4, the buccal segments can be moved sagittal as well as lateral in single mm steps. With this appliance, all surgical possible movements and modifications of the jaws can be already done precisely and safely on the dental model.



In order to create pre-surgical splints, the Occlusal Plane Tray of the Set-Up Model Maker can be used to create an impression. Based on this impression, the Model Maker can be used to create a precise model.

Single-Workstation for all steps

Triple-Workstation for all steps

Silicone Model Base Mold,
4 sizes available

Re-writable Acrylic Plates

Durable transportation and
storing case

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