

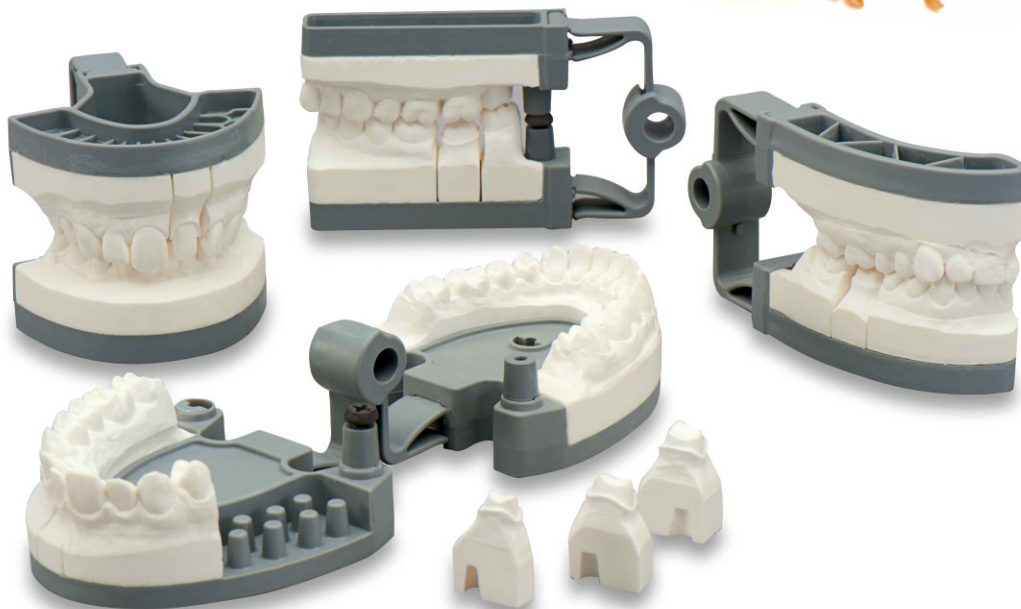
Monotrac

A R T I C U L A T I O N

Model Performance



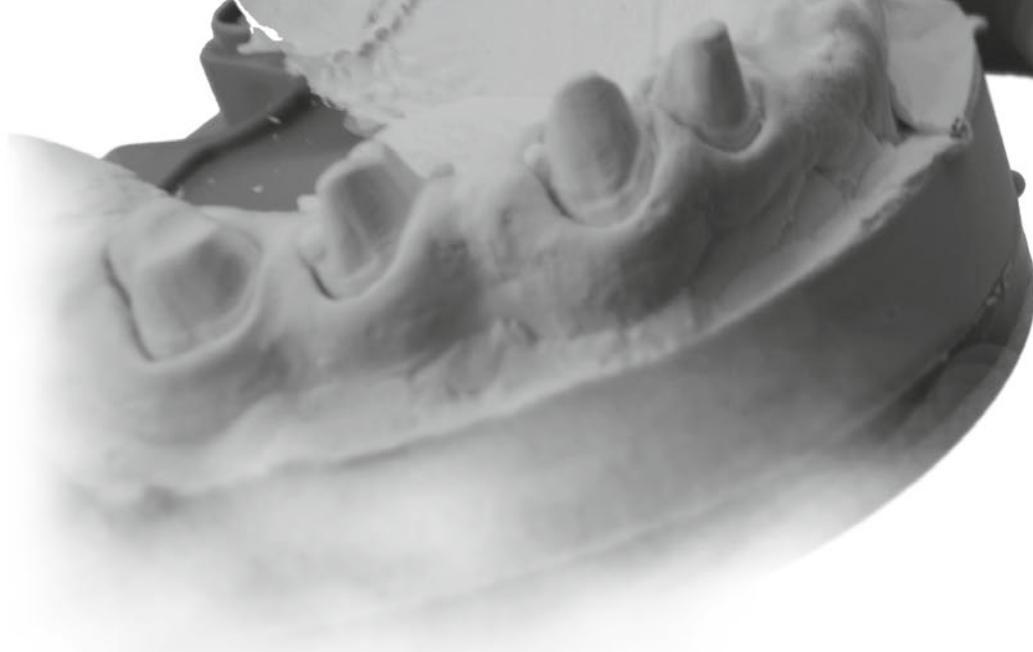
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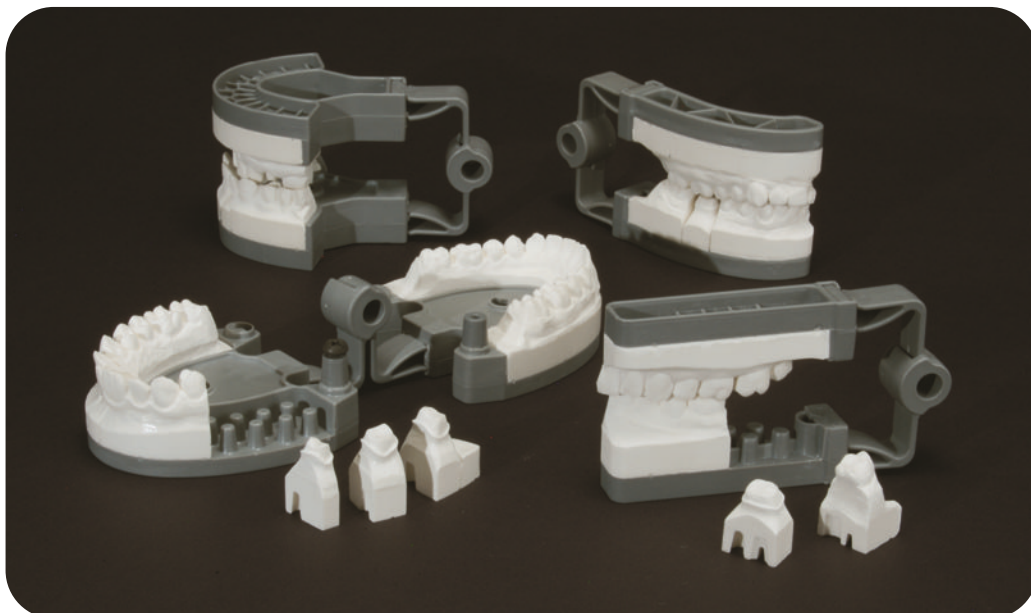


Going Pinless

James Garland, CDT

Dental labs today face constant changes in technology and increasing overseas competition. CAD/CAM technology aims to reduce direct labor cost yet foreign labor remains cheaper. Finding and implementing practical tools of efficiency, accuracy and simplicity into our laboratories to stay competitive and cost effective can be especially tricky when investing in new technology or change.

When it comes to the model and die process, “cost effective” is the whole point of Monotrac, offering more versatility, options, accuracy and efficiency than any other model, die and articulation system, period. The integrated articulator with pinless model tray allows a single pour cast in place setup that is simple fast and complete. Unlike other pinless model trays, dies are easily removed from the base, easy to relocate and are completely stable



Monotrac is the only pinless disposable full range capable model, die and articulation system.

throughout the arch. Even the thinnest of dies can be solid model sectioned on this model base. Monotrac is also the only pinless system having full range capabilities and not limited to a few selected type cases. It ranges from the full round house, to the single unit double bite trays, to the refractory and sectioned implant models, Monotrac does it all, with or without the usually rather cumbersome metal articulators.

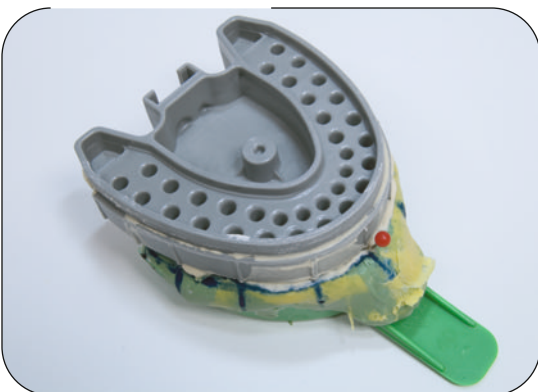
The Monotrac set up will cut labor time by more than 70%, eliminating grinding, pinning, gluing, basing and articulation procedures. How does Monotrac loose the pins? Dies are retained and supported by a patented internal retention base consisting of strategically spaced and sized tapered cones that support the thinnest of die sections including multiple adjacent lower anteriors. Double bite impressions are cast directly onto the articulator simultaneously within the pour up itself. A missed bite in the impression can be easily corrected by

simply heating and softening the articulator arm and repositioning the cast bite. The job of the articulator is to pinpoint solid centric, complete full equilibration and when needed, simulate cuspid rise. Monotrac is the only plastic disposable articulator on the market capable of these requirements. The articulator arm will flex 360 degrees in the occlusal plane to effectively simulate natural jaw movements following the natural wear facets and guidance of the adjacent teeth - excursive movements including protrusive, retrusive, lateral and centric circle replication. Finally, Monotrac eliminates basing stone overexpansion. The distortion of basing stone, both in linear and cross arch expansion is eliminated. This increases accuracy the same way as the Kiefer, Zeiser and Amanngirbach Girroform systems, but additionally it is easier to use and more cost and time effective.



Shown are the Monotrac V2 full arch tray and full arch round house impression. A red map pin is placed at the midline to guide the forward and centered placement position of the tray relation to the impression.
A Sharpie can also be used to make guide markings.

The V2 tray and impression are poured with die stone.



The base is inverted and aligned over the impression.

The impression is removed and the Tear-away wall is peeled away. This allows the model to be ejected from the tray and leaves a neat appearance and minimal finish work.

Monotrac offers four shapes of trays that utilize the same universal snap on excursive flex articulator. These are Straight Quad, Radius Quad, Anterior, and the Full Arch.

This article features the full arch set up demonstrating a maxillary full arch round house case without any natural occlusal stop support. The set up will require three Monotrac Plug-in stops to create solid tripod vertical centric location and support. The case presents a separate pre-poured opposing model and bite registrations.



The palatal area of the tray is tapped forward and back in a manner to create an even ejection of the model from the tray.



The method of die section is optional to the technician. It is completed by hand saw, hand piece disk or the Monotrac die cutter shown here. The Die-Cutter requires a warm model for fast, easy removal of fine dust debris. Bottom cuts are made first for the bulk of the cut. Hand saw or disk cuts are then made from the top in the margin area to meet the bottom cut. Dust and debris are immediately air blasted for complete removal. Note it is also optional to create small snap breaks between dies for a solid model effect.



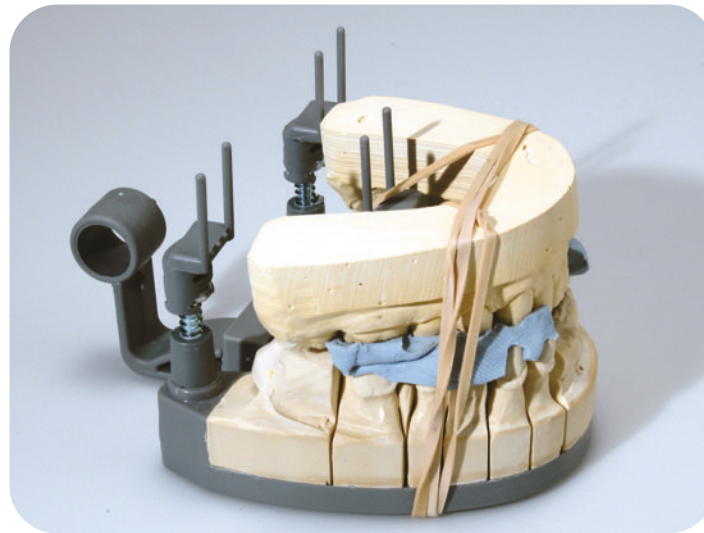
The blue table top can be flipped up to use the diamond disk lathe style for making buccal and lingual cuts or can be top cut with a hand saw to complete the die section.



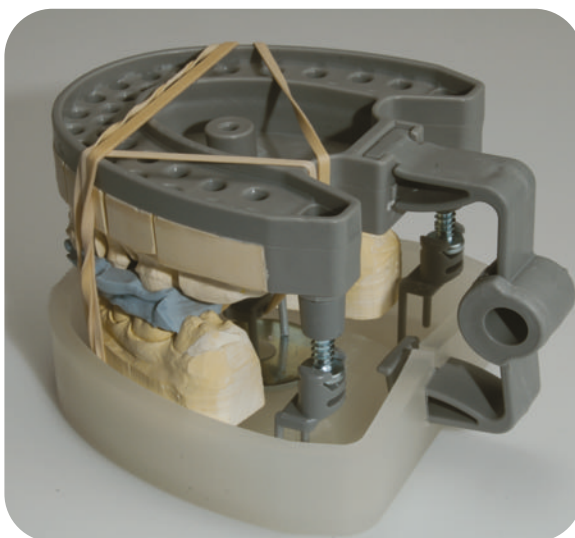
Where required, a vertical stop is needed in unsupported or free end locations. Monotrac patented Plug-in adjustable vertical stops are simply pressed into the stop pockets in the tray.



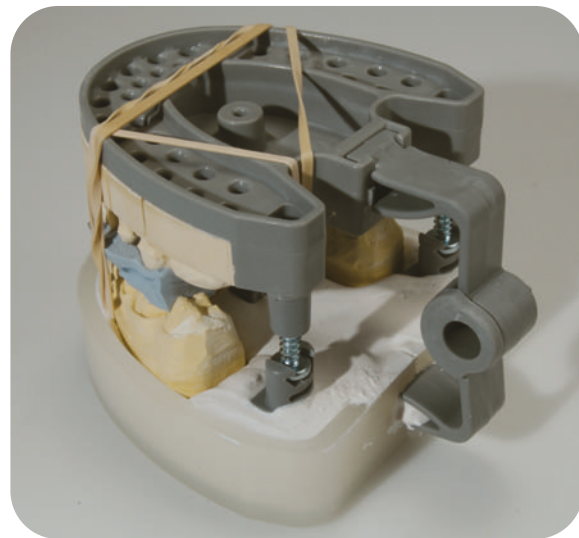
Shown are all the components required to finish this set up. From top left to right: flex arm hinge, trimmed bite registrations. Middle row from left: Monotrac V2 base with sectioned trimmed dies and removable G-mask soft tissue, silicone pick-up cup with the opposing model shown inside. Bottom row from left: cast-in-place vertical stop heads, center is an example of full assembly of stop head attached to plug-in-stop body, next are two plug in stops and adjustable screws. Because this case has no natural occlusal stops, it will be fully vertical supported by the three plug-in stops.



The opposing model is strapped down firmly into the trimmed bite registrations with rubber bands maintaining positive pressure into the bite registrations. Note that stone models expand beyond the impression of the bite registration restricting full passive seat into the bite registrations. The rubber bands force a more accurate full seat into the bite registrations.



The hinge, stops and pic-up cup in place for trial fit and clearance; The opposing model and cast in place stop heads will be captured simultaneously into the pour.



The pic-up cup is poured and model, stops and hinge are captured and settled into the wet stone.



The pic-up cup is removed, rubber bands are cut, the stop head retainers are broken away from the screw heads. Note that the cast-in-place stop heads have lateral ramps that simulate average value cuspid rise. Monotrac is the only disposable plastic articulator with solid vertical stop capability. Monotrac also offers a magnetic split cast adapter plate for attachment to semi or fully adjustable articulators. Because Monotrac has this solid vertical stop capability, metal articulators are really no longer required.

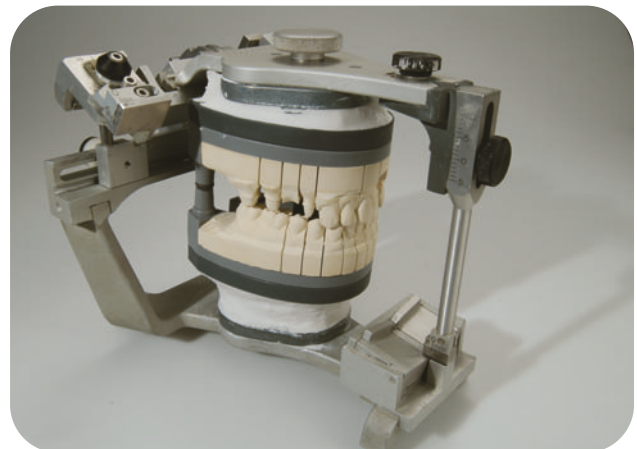


The Finished Model with three plug-in vertical stops



The magnetic split cast adapter components

From left, a magnetic ring is placed inside the index cavity of the back side of the opposing model. Center, a metal plate is attached to the inside screw boss of the Monotrac model tray. Right, the split cast adapter plate which magnetically attaches to Full Arch Monotrac base and plastered to the big articulator. All of these split cast components are reusable. For convenience and easy handling, Monotrac bases can be transferred between articulators and used both ways on the same case. Simply remove the hinge and plug in stops, then move to the big articulator.



Monotrac model bases with split cast plates on a Denar articulator