Basic Articulator Module Instructions

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BASIC SYSTEM COMPONENTS

1. Articulator (Model PCH shown)
2. Articulator Support Legs (not shown)
3. Pana-Mount™ Face-bow
4. Bio-Esthetic Level Gauge
5. Molded Plastic Case
6. Mandibular Mounting Stand
7. Magna-Split II System (not shown)
8. Bite-Tray™ Registration Plates (20)
9. Bite-Tab™ Compound Discs (180)
10. Basic Instruction Manual
FACE-BOW COMPONENTS:

1. **Pana-Mount** Face-Bow (Frame Assembly)
2. Mounting Fixture
3. Nasion Relator (22mm)
4. Bite-Fork & Stem Assembly (2 each)
5. Hex Wrench
Introduction to the Panadent System

Prosthodontics has changed significantly over the years to the point where patient’s acceptance or requests for complete removable dentures has been replaced with requests to save the natural dentition with restorative and fixed prostheses, including implants. The relationship of teeth, TM Joints and neuromuscular system is being increasingly recognized as important factors in fixed prosthodontics as well as orthodontics. Concurrently, the need for user-friendly articulators that simulate individual patient’s characteristic jaw movements has increased.

Using a point midway between the lateral and medial condyle pole to represent the path of the condyle, research shows that the condylar movements of one patient are similar in certain aspects to those of others. For example, beyond the lateral functional range (3mm from centric relation) contralateral condyles, in the horizontal plane, show similar orbiting paths of about 6-7°. The curvature of protrusive and lateral border paths in the functional range, in the sagittal plane, are approximately ¾” radii. The lateral border and protrusive paths of contralateral condyles, in the sagittal plane, are usually identical in the functional range (3mm). The paths of ipsilateral condyles are primarily horizontal and/or pivotal in the functional range (3mm).

In the lateral functional range (3mm), condylar movement patterns differ primarily in two aspects: (1) the radius curvature of the lateral border path of the contralateral condyle in the horizontal plane and (2) the steepness of the lateral border and protrusive path in the sagittal plane.

Research shows that under functional loads, patients’ condylar movements on the contralateral side are not straight paths. The paths curve simultaneously in the three planes of space. Jaw movement studies also show that contralateral condylar paths create the major differences between patients’ lateral jaw movements in the functional range (3mm). The ipsilateral condylar paths (Bennett) are primarily horizontal and/or pivotal in the functional range (3mm).

Over the years, attempts have been made to compensate for the curved contralateral paths observed and recorded on patients by various methods. Some manufacturers have incorporated a variable straight-line “side shift” in their articulator guides (Fig. b). The contralateral condylar element, (Fig. b), does not begin its destructive movement until after the "side shift" has ended at point “S”. Thus a pure horizontal movement takes place on the articulator. In some instances these horizontal articulator movements encompass almost the entire occlusal width of the posterior teeth. Negative effects of horizontal straight line overcompensating “side shift” articulator movements (Fig. b) include:

1. Articulators that become awkward to manipulate
2. Unnatural mandibular motion simulation
3. Possibilities of producing low profile (flattened) occlusal surfaces which may overload patients’ temporomandibular joints, teeth, muscles, periodontia, ridges, implants, and prostheses during function.

Compensating curved contralateral articulator paths (Fig. c ) are superior because:

1. Research shows the articulator movements more closely simulate those of the individual patient.
2. They enable dentists, technicians, and students to observe realistic movements of the mandible as it translates and rotates simultaneously in three planes of space (six degrees of freedom of motion).
3. The articulators are easier to manipulate (user-friendly) during diagnosis as well as constructing artificial occlusal surfaces.
4. Curved paths help dentists and technicians create better occlusal forms while concurrently...
A functional border path of the contralateral condylar element is represented by the dotted curved lines in (Figs. a and b), and the solid curved line (Fig. c). The path from CR to B (Fig. a) represents an undercompensating straight line contralateral guide. The solid rectilinear line CR-S-B (Fig. b) represents an over-compensating straight line, pure horizontal “immediate side shift” guide. (Fig. c) represents the compensating curved path guide. The letter P in each of the three types represents protrusive movement. The letter W represents ipsilateral movement (Bennett) which is primarily horizontal in the functional range (3mm).

The major disadvantage of “straight line” undercompensating articulators is that most patients’ condylar movements under functional load (dotted line) exceed the border limits of the straight path guides CR-B (Fig. a). This undercompensation creates potential posterior occlusal interferences of a prosthesis when placed under functional loads in the mouth.

**PANADENT PREFORMED CONDYLAR AXIS MOTION ANALOGS**

The Panadent Articulator System is the direct result of the most advanced research in mandibular motion simulation (see Bibliography). It is based upon information gathered from hundreds of patients’ transverse (horizontal) condylar axis motion analogs. The end result is a scientific rationale for uncomplicated, high fidelity, user-friendly, instrumentation for simulating individuals characteristic jaw movements.

A series of statistically selected three-dimensional analogs of condylar axis motions are preformed in resin. They include the curved, protrusive and curved lateral border pathways. The series of analogs come in five sizes, each with increasing curvatures of contralateral condylar Bennett movement: 0.5, 1.0, 1.5, 2.0, 2.5mm, for right and left sides. The half millimeter increments are measured at a point 3mm forward in the sagittal plane from centric relation position where a vertical line intersects the condylar pathway. The motion analogs can be rotated individually in the sagittal plane to match the protrusive and lateral border pathways recorded on the patient.
The analogs can also be selected so that the right and left sides have different sized curvatures of contralateral condylar movement. Since patients' condylar paths are primarily horizontal and/or pivotal, in nature, the Panadent preformed motion analogs are produced with horizontal (transtrusive) paths on the ipsilateral side.

The Panadent analog articulator is a precision instrument designed to meet the needs of students of occlusion as well as dentists in advanced clinical practice. The Basic Articulator Module includes one pair of motion analogs. Based on research, the 1.5mm analogs fit the largest percent of the population (90%, see Fig. f).

**Fig. d**
Schematic illustration of Panadent preformed Intercondylar Axis Motion Analogs. Note the variations in the curved contralateral paths in the functional range of 3.0mm from centric relation (CR) in the horizontal plane. The curve pathway in the vertical plane averages $\frac{3}{4}$"R. The orbiting paths beyond the 3.0mm point are caused by the generally pivoting ipsilateral condyle when the mandible is forced into extreme movements. These orbiting paths are of no clinical significance in lateral function. The frontal plane paths are not shown (to avoid line confusion) but are similar to the horizontal (transverse) plane characteristics.

**Fig. e**
A complete set of Panadent preformed Condylar Axis Motion Analogs showing 0.5mm on the bottom and increments of 0.5mm to the maximum size of 2.5mm on the top. The right and left analogs may be used in any combination to allow for differences between the right and left side of the patient. The analogs may be rotated individually to duplicate the patients condylar axis path.
Introduction to the Panadent System

PANA-MOUNT™ FACE-BOW:

The Pana-mount Bow has been designed and engineered to be, strong, fast, easy to use, face-bow and comfortable for the patient.

The bow can be used as an ear-bow for average-axis mounting, but also has provisions for adding adjustable axis arms for true hinge-axis mounting. It also has a detachable indexed bite-fork assembly and mounting fixture which eliminates the need for attaching the face-bow directly to the articulator. By having extra bite-fork assemblies, the bow can be used immediately for other patients and the casts may be mounted at a later time.

PANADENT JAW POSITION INTEROCCLUSAL RECORD SYSTEM

It has long been recognized that wax “check-bite” records have many shortcomings and are unreliable in clinical practice. This manual presents a non-wax method for making accurate centric relation and protrusive interocclusal records for mounting patients’ casts and adjusting the articulator.

The Panadent Interocclusal Record System is based on the Lee method. It uses a preformed soft metal tray (Bite-Tray™) for conveying Bite Registration material to the teeth as well as a compound (modeling compound) lower anterior tooth position index. Softened compound allows the operator to index the lower anterior teeth in either a retruded (CR) or a protruded position. When hardened the compound index enables the patient to repeat and hold the desired mandibular position while the interocclusal registration material is hardening.

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**Fig. f**

Distribution chart for 220 patients right and left lateral jaw movements (total of 440 individual border movements) recorded with the Lee Research Axiopantograph.

<table>
<thead>
<tr>
<th>millimeters per side *</th>
<th>.25</th>
<th>.5</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent (%) of Patients</td>
<td>2</td>
<td>15</td>
<td>52</td>
<td>21</td>
<td>8</td>
<td>2</td>
</tr>
</tbody>
</table>

* Rt. & Lt. border movements measured on the non-working side 3mm forward on the vertical and horizontal planes from centric relation.
Introduction to the Panadent System

BIBLIOGRAPHY FOR PANADENT PRE-FORMED INTERCONDYLAR (HINGE)
AXIS MOTION ANALOGS AND AXI-PATH RECORDER


THE PANADENT MODULAR ARTICULATOR SYSTEM PROVIDES:


2. An articulator system that meets the requirements of both removable and fixed prosthodontics as well as orthodontics.

3. An articulator that is as uncomplicated as a straight line adjustable articulator yet reproduces most major mandibular motions with condylar curved paths in three planes of space (“six degrees” of freedom of movement).

4. Major parameters of mandibular movement controls include curved lateral border Bennett and protrusive pathways.

5. Five wall analog guides for each condylar axis element for producing the rhombus geometrics and the envelope of motion.


7. A DYNA-LINK system for keeping upper and lower articulator frames joined together in eccentric movements as well as centric relation position.

8. An arcon type articulator that opens 180° while the frames remain joined together.

9. Interchangeability of mounted casts from one articulator to another (PCH and PSH models).

10. An articulator upper frame that can be locked to the lower frame for centric axis motion during mounting and remounting procedures.

11. A unique interocclusal record (check bite) method for adjusting articulator pre-formed condylar motion analogs to the proper protrusive angulation and Bennett shift.

12. An average-axis face-bow (ear-nasion) with a mounting fixture which does not require the face-bow to be joined to the articulator during mounting procedures.

13. An articulator modular system that can be expanded to include the Panadent AXI-PATH (Ana-Digit) Recorder and true condylar axis mounting as well as the API and CPI system for tracking condyle positions before and during treatments.

14. A modular system that will adapt to new Panadent peripherals including: Magna-Split (magnetic mounting plates), Bio-Esthetic Level Gauge, and Magnetic bite fork support system for supporting the bite fork.

15. A molded plastic carrying case which holds the complete system including: instruction manual, articulator, face-bow and mounting stand, plus space for study casts and other auxiliary items.
The following procedure is followed when Panadent Bite-Tab compound discs are used for bite-fork registration.

Bend backing-sheet sharply at extreme printed end of Bite-Tab strip to free end of strip so it can be grasped with index finger and thumb. Peel Bite-Tab strip away from backing sheet. Do not touch adhesive under end of tab where compound is located.

Hold Bite-Tab with thumb and index finger at lateral edges (arrows). Fold printed end of tab back (adhesive to adhesive) at dotted line. This fold-back produces a non-stick flap for easy removal of Tab after maxillary cast has been mounted. Do not touch adhesive under Bite-Tab since powder from latex gloves will prevent Bite-Tab from adhering to bite-fork.

Press one Bite-Tab at each of the following six locations: left molar, right molar, and incisor on upper and lower surfaces (six tabs) on clean, dry bite-fork.

Place intra oral end of bite-fork in hot water (125°F / 40°C) for about one half to one minute to soften Bite-Tab compound discs. If tap water is not hot enough, hot coffee or coffee water will work well to soften compound.

**ATTENTION:** Do not place bite-fork in regular water-bath since wax residues and oils in water-bath will prevent Bite-Tabs from adhering to bite-fork.
Place bite-fork in patient’s mouth with stem on patient’s right side and pointing straight forward. Position bite-fork with midline mark on fork aligned with midsagittal plane of head. Place mandible in retruded position. Instruct patient to close teeth with light pressure into the soft compound and open mouth immediately before teeth contact metal bite-fork. (Soft compound can be molded with fingers before placing in mouth for better contact with teeth if needed.)

Remove bite-fork from patient’s mouth and harden compound discs in cold water to quickly harden compound.

Shave back excess compound leaving no more than 1mm deep impressions of cusp tips and incisal edges. Also cut back any distal extension edentulous areas leaving only small area of ridge with dense attached gingiva to support bite-fork in the mouth. Remove all loose particles of compound with soft tooth brush or compressed air.

For highest accuracy, dry compound with air syringe. Place small amount of bite registration material on three compound pads on maxillary side only. (Include distal extension edentulous areas, if present.)
Seat re-lined bite-fork registration against patient’s maxillary teeth and have patient close mandibular teeth firmly into original indentations using lower jaw to support fork until bite paste hardens. (Operator’s hands should be removed from bite-fork while reline material is hardening.)

Position bite-fork attachment stem assembly with horizontal slide bar on patient’s right side (arrow 1) and set-screw facing forward (arrow 2). Insert “short end” of attachment post into cross bar of face-bow completely to ring stop (upper end of post should be flush with upper surface of cross bar). Rotate attachment post until flat area on upper end faces forward to meet flat-ended set screw. Tighten set screw with hex wrench, to lock attachment post to cross-bar.

Loosen double-toggle clamp with hex wrench until both members of clamp are completely free to slide and/or rotate respectively.
Loosen single toggle clamp with hex wrench until clamp slides freely up and down vertical attachment post.

Slightly loosen (½ turn only) large thumb screw at anterior end of face-bow (arrow).

While operator holds anterior end of face-bow, have patient grasp side-arms of bow with his/her fingers near distal ends and extend bow to maximum width bilateral to face (arrows).

Instruct patient to contract side-arms and place ear pieces firmly in auditory meatuses (bilateral horizontal arrows). While patient keeps side-arms firmly in contact with ears, tighten large thumb screw (vertical arrow) to lock face-bow width.

Note: Attachment post clamp is not joined to protruding stem of bite-fork at this time.
Loosen nasion relator shaft thumb screw slightly. While patient continues to support side-arms, raise or lower anterior end of face-bow until nasion-relator saddle can be made to contact patient's nasion area. Push firmly back with finger of one hand on end of nasion relator shaft while concurrently pulling forward with fingers on nasion support bracket (reciprocal arrows). Lock nasion relator saddle in firm contact against bridge of patient's nose (nasion).

Have patient sit upright with head held perfectly erect and looking straight forward (Panadent Bio-Esthetic level gauge can be added. (See Level Gauge Instructions)

While patient continues to support both side arms firmly, slide double-toggle clamp over protruding stem of bite-fork. (It is recommended to slide the clamp close to the patient's mouth to reduce as much flexion of the components as possible.) Grasp double clamp (to offset torque) and tighten clamp securely to stem of bite-fork with hex wrench.

While patient continues to hold head erect and face-bow level, grasp single-toggle clamp tightly (to offset torque) and tighten clamp securely to vertical attachment post with hex wrench.

Loosen nasion relator thumb screw slightly and retract nasion relator away from patient's face. Lock nasion relator in contact with support bracket (arrow).
Face-Bow Instructions

21. Slightly loosen (½ turn only) large thumb screw. Have patient open mouth and retract side-arms completely away from ears (arrows).

22. Instruct patient to remove their hands from face-bow and open their mouth. Remove face-bow downward and forward from patient’s face (arrow).

23. Loosen hex head set screw (½ turn only) on face-bow cross bar in preparation for removing bite-fork assembly.

24. Remove bite-fork assembly straight downward (arrow). Transport bite-fork assembly to laboratory for cast mounting procedure. (By having multiple bite-fork assemblies, face-bow can immediately be used for other patients.)
Maxillary Cast Mounting Instructions

The Bennett size and angular rotational setting of the Panadent motion analog is not critical for mounting procedures since the motion analogs are all interchangeable in centric relation.

When using standard mounting plates on both maxillary and mandibular articulator frames, rotate mounting plates in direction thumb screw is being tightened so the plates will have perfect repeatability when replaced after cast mounting procedure.

**Note:** This procedure is not necessary if the Panadent magnetic mounting plate system is being used. (See Magna-Split II Instructions)

Slightly loosen right and left axis shaft lock screws with hex wrench.

Slightly loosen right and left axis shaft thumb screws. Be sure motion analogs contact calibrated sides of articulator (arrow). Rotate motion analogs until #6 horizontal line coincides with superior surface of analogs, then tighten axis shaft thumb screws to maintain positions temporarily.
Maxillary Cast Mounting Instructions

After analogs have been set at average angulation of “6”, retighten right and left axis shaft lock screws with hex wrench.

Set incisal pin at heavy center engraved ring (arrow). This will make the maxillary and mandibular articulator frames parallel to each other.

**Note:** If curved pin articulator is being used, set incisal pin at ‘0’ degrees.

Open articulator by hinging maxillary frame back.

Spray entire articulator, including analogs, lightly with silicone lubricant spray each time before mounting casts to prevent mounting stone from sticking to articulator. (The lubricant will cause residual mounting stone on articulator to be easily wiped off without scratching finished surface of instrument.)

**Note:** A vaseline or silicone gel on a cotton swab should be used each time to lubricate the analog paths and reduce wear on the analogs and condylar axis elements.
Slightly loosen incisal table thumb screw and remove table forward (arrow).

Place mounting fixture in incisal table slot and lock in rear most position (arrow) with thumb screw. When using the bi-mount fixture (#4054 ME) use high end of fixture for "H" model articulators and low end for mounting on "L" model articulators.

Cut back excess compound and/or zoe reline material from maxillary side of bite-fork. Include all soft tissue imprints except selected ridge areas used to support an edentulous area. Leave impressions of cusp tips approximately 1mm deep.
Maxillary Cast Mounting Instructions

Place pre-made plaster bite-fork support (shown) or Panadent Magnetic Bite-Fork Support on lower frame of articulator to support maxillary cast.

(See Magnetic Bite Fork Support Instructions)

Hold upper end of bite-fork attachment post with thumb and index finger. Place lower end of bite fork post into vertical hole in mounting fixture. Seat post completely down to retaining ring (arrow) to determine how much plaster is needed to make contact with plaster bite-fork support. If plaster support is too high, reduce it with a model trimmer.

Remove bite-fork assembly. Place a sufficient quantity of soft quick set plaster on upper surface of bite-fork support column so that lower surface of bite-fork will be slightly imbedded in the soft plaster when bite-fork assembly is placed in mounting fixture.

Hold upper end of bite-fork attachment post with thumb and index finger of one hand. Place lower end of attachment post into hole in mounting fixture. Be sure bite-fork attachment post is completely down to retaining ring stop. Tighten set screw with hex wrench (or fingers if 'T' head screw is being used). Remove hands and allow support plaster to harden undisturbed.
Maxillary Cast Mounting Instructions

With model trimmer, grind maxillary surface of cast parallel to occlusal plane of teeth. Grind perimeter of cast with approximately 10-15° bevel to depth of buccal and labial vestibules. Avoid touching teeth or buccal and labial gingival areas with trimmer wheel.

Score superior mounting surface and beveled areas of cast with laboratory knife or carborundum disc for retention in mounting stone.

Remove all bubbles or impression defects from occlusal and incisal areas of casts.

Seat cast carefully into bite fork registration and verify fit of cast to registration.
Maxillary Cast Mounting Instructions

21
Hinge maxillary frame upward and forward over cast and bite fork assembly (curved arrow).

22
Close maxillary frame of articulator over cast until end of incisal pin contacts upper surface of mounting fixture (arrow). Determine quantity of mounting stone needed. Grind cast if necessary so there is at least 5mm space between cast and mounting plate in area indicated by spatula.

23
Hinge maxillary frame back 180°. Mix mounting stone to the consistency of whipped cream. Place stone first in retention areas of mounting plate.

24
Place sufficient amount of soft stone on mounting surface of maxillary cast. (The amount of mounting stone should be only enough to make a "solid" connection with the mounting plate stone. Reinforcement stone can be added later after the initial stone has hardened.)
Maxillary Cast Mounting Instructions

Hinge maxillary frame forward to join the two pads of soft stone (curved arrow).

Close articulator until incisal pin contacts surface of mounting fixture (arrow).

Remove any overhanging soft stone with spatula or finger carefully to avoid disturbing cast in bite fork registration. (Mounting stone should not extend beyond perimeter of mounting plate and vestibule of cast.) Leave cast undisturbed until mounting stone has completely hardened.

After mounting stone has hardened, release centric latch and rotate maxillary frame backward with cast attached (arrow).
Maxillary Cast Mounting Instructions

29
Remove mounting fixture, bite-fork assembly and bite-fork support. Replace incisal table.

30
Remove maxillary cast from articulator. Cut back excess stone (if any) projecting beyond perimeter of mounting plate and vestibule of cast.

31
For more secure and esthetic mounting, mix quick-set plaster to the consistency of whipped cream. Add reinforcement layer of plaster to cast using trimmed edge of cast and perimeter of mounting plate as guides for plaster spatula. While plaster is still soft, use fingers under running tap water to smooth plaster surfaces.

32
Remove any residual plaster from mounting plate and articulator before replacing cast on articulator. When standard mounting plates are being used be sure to rotate mounted cast in directions the mounting plate screw is being turned (arrows). Tighten mounting plate screw securely.
ITEMS USED FOR PROCEDURE:

1. Quick Drying Impression Tray Adhesive
2. Adhesive Brush
3. Baby Oil
4. Bowl of Warm Water
5. Bowl of Ice Water
6. Alcohol Torch
7. Matches or lighter
8. *Bite-Trays* (Panadent)
9. Soft Toothbrush
10. Compound Stick
11. Leaf Gauge (Panadent)
12. Scissors
13. Rubber Wheel on Mandrel
14. Marking Ribbon and Holder
15. Zip-lock Plastic Bags
16. Cotton Roll
17. 2x2 Gauze Pads
18. Sharp Scalpel
19. Bite Registration Material
20. Paper Mixing Pad
21. Cement Spatula
The first phase of maxillary registration is the same (generic) as all types of interocclusal records (e.g., centric relation, protrusive as well as lateral border).

Remove Panadent Bite-Trays from package.

Although Bite-Trays have been manufactured in a sanitary manner, trays should be sterilized prior to patient use. Sterilization of Bite-Trays may be by autoclave, chemclave or cold sterilizing solution.

Paint Bite-Tray to be used with fast drying impression adhesive (e.g., Impergum) on both sides in perforated areas only.

If maxillary cast of patient's teeth is available, place cast on Bite-Tray with incisors against upturned anterior flange. Cut off extending portion of tray distal to second molars. Tray should cover first and second molars and distal extension edentulous areas. Third molars should only be included if they are to be needed as bridge abutments etc.
INTEROCCLUSAL RECORD INSTRUCTIONS

If maxillary cast is not available at time of record making, place tray in patient's mouth to determine length. Cut off distal end of tray extending beyond second molar areas.

Remove any sharp edges of Bite-Tray with sandpaper disc, round stone, or abrasive rubber wheel.

Hold Bite-Tray with thumb and index finger at serrated areas on lateral edges of tray for placing tray in patient's mouth (arrows).

Center tray laterally against patient's maxillary teeth with anterior up-turned flange resting against labial surface of incisors. Align midline mark on up-turned flange with midsagittal of maxilla. With mandible retruded, have patient "bite down hard" on tray to adapt it to occlusal surface of teeth (arrows).
Note: For patients with deep anterior vertical overlap, (for example, class II div. 2), cut completely across perforated occlusal areas of tray on both sides just anterior to serrated gripping areas (arrow). Have patient "bite down" hard on tray to adapt it to teeth. This will cause metal to overlap in canine areas, thus allowing posterior teeth to come closer together.

After removing crushed tray from patients mouth, dry tray with compressed air.

Mix bite registration paste. Spread about 1mm thick on maxillary side of tray in perforated areas only.

Wipe off excess registration paste that flows through perforations onto mandibular side of tray with gauze pad.
INTEROCCLUSAL RECORD INSTRUCTIONS

OPTIONAL: Dip entire bite tray briefly in bowl of cold water before placing in the mouth.

Have patient use tongue to quickly lubricate teeth with saliva. Place loaded Bite-Tray in mouth and hold lightly against maxillary teeth (arrows). Instruct patient to tap mandibular teeth (in retruded position) against tray to assure tray is properly repositioned.

While continuing to hold Bite-Tray in contact with maxillary teeth (arrows) have patient open mouth slightly to separate mandibular teeth from tray. Hold tray against maxillary teeth in steady passive manner until registration-paste hardens.

It is okay if maxillary occlusal and incisal contacts are made with the tray because tray is being held in passive fashion against maxillary teeth.

To remove Bite-Tray from patient’s mouth without warping it, grasp tray with thumbs and index fingers firmly on right and left flanges at premolar area; then shake tray vertically to break seal to teeth (arrows). Spraying mouth with cold water may also be helpful in separating registration tray from teeth.
INTEROCCLUSAL RECORD INSTRUCTIONS

18
Place Bite-Tray in cold water (e.g. ice water) a few minutes to increase hardness of registration material.

19
Trim excess material on maxillary side of Bite-Tray with sharp scalpel. Leave impressions of cusp tips approximately 1mm deep. Also, remove any hardened material that may have oozed out onto lower surface of tray.
Note: If proper amount of registration paste was used, above procedure is seldom necessary.
Caution: Extreme care must be used when trimming registration material to avoid warping record.

20
Remove all loose registration material from occlusal areas with soft toothbrush under cold running tap water and dry record with compressed air.
Note: Magnification should be used to be sure all loose particles of material have been removed from record before proceeding.

21
Clean all registration paste from patient's teeth and face. Replace occlusal registration in patient's mouth to assure proper fit to maxillary teeth. If registration does not fit perfectly to teeth, reline record with thin layer of registration material or repeat total procedure using new Bite-Tray.
INTEROCCCLUSAL RECORD (CENTRIC RELATION)

Dry both sides of Bite-Tray thoroughly with compressed air syringe. Especially dry lower anterior area of tray where hot compound is to be added.

While rotating compound stick heat 3cm end until stick begins to slump.

Spread hot compound about 2cm long and 1cm wide in anterior-posterior direction on Bite-Tray in area of mandibular incisors.

If compound should harden too quickly, reheat with alcohol torch pressurized air stream.
Dip compound end of *Bite-Tray* about 3-5 seconds in *warm* water (125°F / 40°C) to temper before placing in patient's mouth.

**Note:** The following procedure is shown for right handed operators. This should be considered when done by left handed operators.

While compound is still warm and pliable fit registration to maxillary teeth. Hold tray against maxillary teeth with thumb and index finger of one hand at lateral serrated areas of tray (bilateral arrows). Use thumb of other hand to hold lower lip away from teeth. Place end of same thumb against labial surface of mandibular teeth. “Shake” mandible quickly two or three times while pushing distally on lower anterior teeth to “break” muscle tension.

Have patient “relax jaw.” Continue to push distally with forearm aligned in midsagittal plane of patient (this procedure may not be applicable for patients with TMJ pain). Tell patient, “Do not bite, I will close your teeth for you.” Gradually occlude teeth until mandibular incisors contact soft compound (center vertical arrow) without posterior teeth touching tray.

As soon as mandibular incisors make proper impression in soft compound, instruct patient to “open your mouth quickly” (center arrow). Carefully remove tray from mouth without disturbing soft compound.

(If mandibular posterior teeth touching tray before anterior teeth touch compound, add more compound to increase vertical dimension. However, keep vertical dimension to a minimum for most accurate results.)
Quickly harden compound by dipping *Bite-Tray* in bowl of **cold** water (e.g. ice water) for several seconds.

It is recommended that a cotton roll, leaf gauge or CR occlusal splint be placed between incisors to keep posterior teeth separated to avoid neuromuscular reprogramming when record is not in mouth.

Cut back excess cold compound with **sharp** straight edged scalpel leaving mandibular incisor impression no more than 1 mm deep (retruded incisor registration).

Remove loose particles of compound from retruded incisor registration with soft toothbrush and/or compressed air.
Replace Bite-Tray in mouth to verify that mandibular incisors were in most retruded position. If incisors can be made to touch behind original indentions, warm compound with alcohol torch and repeat procedure.

**Note:** There should only be mandibular incisal edge contact in compound (no labial or lingual contacts).

Check right and left sides of bite-tray with thick occlusal ribbon (e.g. .5mm) for absence of mandibular posterior tooth contacts. If there is contact, add more compound to increase vertical dimension and repeat procedure.

**Note:** If patient has unstable TM Joints, condyles may go to higher position in fossae during brief time patient is biting on hardened compound registration, thus causing lower posterior teeth to come into contact with Bite-Tray.

Hold record firmly against maxillary teeth and have patient tap mandibular incisors into retruded compound registration without assistance from operator to be sure index is **comfortable, repeatable** position for patient.

**Note:** Effects of head posture may be tested at this time by having patient tip their head far backward and far forward while tapping into incisor registration to see if there are any differences.

Remove Bite-Tray from mouth and replace with cotton roll between incisors.
Add sufficient amount of bite registration paste (depending upon space between mandibular teeth and tray) to mandibular side of *Bite-Tray* to make contact with mandibular posterior teeth.

**OPTIONAL:** Pending bite registration material instructions, dip entire tray 1-2 seconds in water before placing in patient's mouth.

Stand or sit behind patient (patient may be in a sitting, straight up, 45°, or supine position). Place *Bite-Tray* in patient's mouth and hold against maxillary teeth with index fingers at serrated flange areas (arrows). Have patient retrace mandible and place anterior teeth in retruded compound record. Instruct patient to hold teeth in compound record with firm pressure, without clenching, until registration material hardens. (It is important that patients do not clench while registration paste is setting in order to avoid flexing mandible and/or intruding lower anterior teeth.) Do Not manipulate the mandible.

**Note:** The hardened anterior compound record (small horizontal arrow) represents apex of lateral border movements and acts as a fulcrum. Large vertical arrows represent muscle forces which seat condyles in superior anterior direction (small curved arrow). Normal physiologic centric relation position may be defined as anywhere on the arc of closure with the condyles bilaterally seated against the thin central bearing areas of their respective bi-concave discs in their most superior, anterior, medial position.
INTEROCCLUSAL RECORD (CENTRIC RELATION)

21. Place cotton roll between teeth to keep posterior teeth separated until record accuracy has been verified.

22. Place record in a bowl of cold water (e.g. ice water) a few minutes to produce maximum hardness. Record can also be placed in refrigerator to maximize hardness.

23. With sharp straight edge scalpel, cut back excess registration material on mandibular side of tray until only cusp tip imprints about 1 mm deep remain.

24. To release mandibular teeth from registration material without warping tray; hold tray firmly against maxillary teeth with fingers of both hands along flanges (bilateral upward arrows); then instruct patient to open mouth (downward arrow). In this way the chances of the teeth sticking in the registration material and warping the Bite-Tray are greatly reduced.

Warning: must be used when cutting off excess registration material to avoid warping or distorting the record. (Handle record as though it were as fragile as an egg shell.)
Remove loose registration particles from record with soft toothbrush under cold running tap water.

Dry centric relation record with compressed air and inspect finished product.

**Note:** Use magnification to be sure all loose material has been removed.

Replace finished record in patient's mouth and verify its accuracy.

Remove any artifacts from casts such as cusp or incisal edge impression perforations and bubbles. Fit previously made stone casts of patients teeth into impressions in centric relation record. If casts do not fit registration impression in centric relation record, it is usually due to faulty casts rather than inaccuracies in record, since record fit to teeth was verified.
If centric relation record is acceptable, place in air tight, zip-lock plastic bag with moist 2 x 2 gauze pads soaked in sterilizing solution. Store record in protective cool place until ready for use.

Clean residual material from patient’s face and lips with baby oil on a gauze pad.
INTEROCCLUSAL RECORD (PROTRUSIVE)

To make protrusive interocclusal record, first repeat figures 2-20 of interocclusal record instructions on a separate Bite-Tray to obtain registration of maxillary teeth.

Verify fit of registration to maxillary teeth. If registration does not fit perfectly, reline with thin layer of fresh registration paste or discard record. Have patient practice retruding and protruding his/her "lower jaw" on command “forward” and “backward” so patient will understand the commands when the anterior compound record is made.

Note: Remove tray from mouth. Be sure to dry lower side of tray with compressed air.

While rotating compound stick, heat about 3cm until stick begins to slump.

Spread hot compound approximately 1cm wide and 3cm long (on thoroughly dried Bite-Tray) in anterior posterior direction. Bring compound anteriorly completely to flange.
Temper hot compound about 3 - 5 seconds in warm water (125°F / 40°C) before placing in patient’s mouth.

**Note:** The following procedure is shown for right handed operators, which should be considered when done by left handed operators.

Place upper-side impression carefully onto maxillary teeth. Hold *Bite-Tray* firmly against maxillary teeth with thumb and index finger of left hand at second pre-molar flange areas (bilateral arrows). Place thumb of right hand against mandibular incisors to hold mandible in most retruded position (vertical arrow).

Have patient close slowly in most retruded position enough to make slight contact of mandibular incisors with soft compound (arrow).

As soon as mandibular incisors contact soft compound, have patient immediately open mouth (vertical arrow). Note retruded impression of teeth.

With teeth separated a few millimeters (arrow 1), have patient protrude mandible approximately 5-7mm (arrow 2).
INTEROCCLUSAL RECORD (PROTRUSIVE)

With mandible protruded (avoid lateral deviation), instruct patient to bring teeth slowly together until mandibular incisors make impression in soft compound (vertical arrow).

Have patient open mouth immediately (arrow). Note two impressions in compound (retruded and protruded).

Remove tray carefully from patient's mouth to avoid touching pliable compound and distorting it.

Dip anterior end of tray immediately into bowl of cold water (e.g. ice water) to harden compound quickly.

Inspect protrusive compound record to see that it is approximately 5 - 7mm anterior to retruded impression. If record is unsatisfactory, warm compound with alcohol torch and repeat recording procedure.
INTEROCCCLUSAL RECORD (PROTRUSIVE)

13

With sharp straight edge scalpel, cut back excess compound, leaving rather deep (3mm) protrusive impression of anterior teeth. (The reason for leaving the protrusive imprint deep is to help the patient quickly relocate the recorded position with their mandibular incisors when the final stage of the recording is being done.)

14

Remove loose compound particles with soft toothbrush or air syringe.

15

Replace record in patient's mouth to be sure it fits teeth. Make sure there are no mandibular posterior tooth contacts with Bite-Tray. Also determine amount of registration paste needed to make contact between mandibular posterior teeth and tray.

16

Check right and left sides with thick ribbon (e.g. .5mm) for absence of mandibular posterior tooth contacts with Bite-Tray. If there is contact, add more compound to increase vertical dimension of record and repeat procedures.
 Mix an adequate amount of registration paste. Apply to right and left mandibular posterior areas of Bite-Tray. (Add excess amounts for distal edentulous areas in order to contact ridge.)

Dip tray briefly in cold water before placing in mouth.

Hold tray firmly against maxillary teeth bi-laterally at pre-molar areas (arrows). Have patient place mandibular anterior teeth in protrusive index. Instruct patient to bite firmly in index until registration material hardens. Continue to hold tray against maxillary teeth while registration material is setting to prevent posterior end of tray from separating from maxillary posterior teeth.

To release mandibular teeth from registration material without warping tray; hold tray firmly against maxillary teeth with fingers of both hands along flanges (bilateral upward arrows); then instruct patient to open mouth (downward arrow). In this way the chances of the teeth sticking in the registration material and warping the Bite-Tray are greatly reduced.
Cut back excess registration material with sharp scalpel, leaving impression of cusp tips approximately 1mm deep.

Remove loose registration particles with soft toothbrush under cold running tap water. Dry with compressed air. Inspect with magnification to be sure all loose particles have been removed.

Place record in cold sterilizing solution. Seal record in Zip-lock bag with moist 2x2 gauze pad soaked in sterilizing solution. Store record in protected cool place until ready to use.

Clean residual material from patient's face and lips with Baby Oil on gauze pad.
INTEROCCLUSAL RECORD (LEFT LATERAL)

To make left lateral interocclusal record, first repeat figures 2-20 of interocclusal record procedure on a separate Bite-Tray to obtain registration of maxillary teeth.

Verify fit of impression to maxillary teeth. If impression does not fit teeth, impression must be relined or redone. If impression is acceptable, dry lower side of tray thoroughly with compressed air.

While rotating compound stick, heat 3cm end until stick slumps.

Spread 3cm portion of hot compound on mandibular side of dry Bite-Tray at left canine area just anterior to serrated finger grips on edge of tray.
5

Temper compound two or three seconds in warm water before placing in patient's mouth.

6

Seat Bite-Tray registration completely against maxillary teeth and hold in place with thumb and index finger of one hand at pre-molar flange areas. Place thumb of other hand against mandibular incisors and hold patient in retruded position with teeth separated. Instruct patient to move mandible slowly to the left (arrow).

7

Stop lateral jaw movement about 3mm (canine tip to tip). Have patient close slowly until mandibular canine makes imprint 2-3mm deep in soft compound (vertical arrow).

8

As soon as mandibular canine has made approximately a 3mm imprint in soft compound, have patient "open mouth" immediately (vertical arrow).
Carefully remove tray from mouth. Harden compound quickly by dipping registration in bowl of ice water. With sharp straight edge scalpel, remove all tooth imprints except canine cusp tip. Shave back canine imprints so it is between 2-3mm deep.

Remove loose compound material with soft toothbrush under cold running water. Dry compound index with compressed air.

Clean all loose material from patient's teeth. Replace tray in mouth to make sure there are no mandibular posterior tooth contacts with tray. Have patient close into left lateral compound index to check fit of index to canine cusp tip.

Check both right and left sides to be sure there is interocclusal space. A thick marking ribbon may be used between mandibular teeth and tray to see that there are no posterior contacts on either side. Also determine amount of registration material needed to make contact between tray and mandibular teeth.
Place adequate amount of bite registration paste on mixing pad.

Be sure to add more paste to Bite-Tray on contralateral (non-working) side and position paste somewhat lingually to register molars on contralateral side (arrows). Add more than usual amount of material to register any distal edentulous ridge areas.

**OPTIONAL**, depending on operating time needed. Dip Bite-Tray briefly in cold water before placing in patient's mouth to accelerate setting time of bite registration paste in mouth.

Fit upper side registration carefully to maxillary teeth and hold tray firmly against teeth with thumb and index finger at pre-molar areas. Place wrist and forearm against patient's forehead (arrows) to stabilize head against head-rest on dental chair. Instruct patient to move mandible to the left and place mandibular canine in compound index.
While patient holds mandibular left canine in compound index (fulcrum), the operator's index finger is placed under the angle of the mandible to keep the condyle from subluxating while the thumb is placed against the lateral side of the mandibular angle. The vector of force is in line toward the ipsilateral (working) condyle. Operator pushes with firm pressure upward and inward against angle of mandible (small arrow) to induce maximum Bennett shift. Hold with constant pressure against angle of mandible until paste hardens.

Dotted lines illustrate Bennett shift of condyles. Compound index prevents anterior teeth from moving beyond 3mm and also acts as fulcrum point so that full Bennett path of condyles can be achieved without posterior tooth interferences.

Note: The contralateral (non-working) condyle moves downward and forward while it moves medially. While the ipsilateral (working) condyle basically shifts laterally.

Remove hardened record from mouth. Clean all residual bite-registration paste from patient's face, lips and teeth with baby oil.

With sharp straight edge scalpel (Bard-Parker), cut back all excess material, leaving approximately 1mm deep impressions of cusp tips and/or edentulous ridge areas on both right and left sides.
INTEROCCLUSAL RECORD (LEFT LATERAL)

21
Remove loose registration particles with soft toothbrush under cold running water.

22
Dry completed registration with compressed air and make final inspection.

23
Wrap finished record in sterilizing solution soaked 2x2 gauze. Place in sealed plastic bag. Store bag in sturdy plastic box for protection until ready to use.
INTEROCCLUSAL RECORD (RIGHT LATERAL)

To make right lateral interocclusal record, first repeat figures 2-20 of interocclusal record procedure on a separate Bite-Tray to obtain registration of the maxillary teeth.

Verify fit of upper impression to maxillary teeth. If impression does not fit teeth, impression must be relined or redone. If impression is acceptable, dry lower side of tray thoroughly with compressed air.

While rotating compound stick, heat 3cm end until stick slumps.

Spread 3cm portion of hot compound on mandibular side of dry Bite-Tray at right canine area just anterior to serrated finger grips on edge of tray.
Temper compound two or three seconds in warm water before placing in patient's mouth.

Seat Bite-Tray registration completely against maxillary teeth and hold in place with thumb and index finger of one hand at pre-molar flange areas. Place thumb of other hand against mandibular incisors and hold patient in retruded position with teeth separated. Instruct patient to move mandible slowly to the right (arrow).

Stop lateral jaw movement about 3mm (canines tip to tip). Have patient close slowly until mandibular canine makes imprint 2-3mm deep in soft compound (vertical arrow).

As soon as mandibular canine has made approximately a 3mm imprint in soft compound, have patient "open mouth" immediately (vertical arrow).
Carefully remove tray from mouth. Harden compound quickly by dipping registration in bowl of ice water. With sharp straight edge scalpel, remove all tooth imprints except canine cusp tip. Shave back canine imprints so it is between 2-3mm deep.

Remove loose compound material with soft toothbrush under cold running water. Dry compound index with compressed air.

Clean all loose material from patient's teeth. Replace tray in mouth to make sure there are no mandibular posterior tooth contacts with tray. Have patient close into right lateral compound index to check fit of index to canine cusp tip.

Check both right and left sides to be sure there is interocclusal space. A thick marking ribbon may be used between mandibular teeth and tray to see that there are no posterior contacts on either side. Also determine amount of registration material needed to make contact between tray and mandibular teeth.
Place adequate amount of bite registration paste on mixing pad.

Be sure to add more paste to Bite-Tray on contralateral (non-working) side and position paste somewhat lingually to register molars on contralateral side (arrows). Add more than usual amount of material to register any distal edentulous ridge areas.

OPTIONAL, depending on operating time needed. Dip Bite-Tray briefly in cold water before placing in patient’s mouth to accelerate setting time of bite registration paste in mouth.

Fit upper side registration carefully to maxillary teeth and hold tray firmly against teeth with thumb and index finger at pre-molar areas. Place wrist and forearm against patient's forehead (arrows) to stabilize head against head-rest on dental chair. Instruct patient to move mandible to the right and place mandibular canine in compound index.
INTEROCCLUSAL RECORD (RIGHT LATERAL)

The operator's index finger is placed under the angle of the mandible (pointing anteriorly) to keep the condyle from subluxating while the thumb is placed against the lateral side of the mandibular angle. The vector for inducing the Bennett shift is in a line toward the ipsilateral (working) condyle. While patient holds mandibular right canine in index, push medially with firm steady pressure against angle of mandible on contralateral (non-working) side to induce maximum amount of Bennett shift. Hold constant pressure against mandible until paste is hard.

Dotted lines illustrate Bennett shift of condyles. Compound index prevents anterior teeth from moving beyond 3mm and also acts as fulcrum point so that full Bennett path of condyles can be achieved without posterior tooth interferences.

**Note:** The contralateral (non-working) condyle moves downward, forward and medially while the ipsilateral (working) condyle basically shifts laterally.

Remove hardened record from mouth. Clean all residual bite-registration paste from patient's face, lips and teeth with baby oil.

With sharp straight edge scalpel (Bard-Parker), cut back all excess material leaving approximately 1mm deep impressions of cusp tips and/or edentulous ridge areas on both right and left sides.
21. Remove loose registration particles with soft toothbrush under cold running water.

22. Dry completed registration with compressed air and make final inspection.

23. Wrap finished record in sterilizing solution soaked 2x2 gauze. Place in sealed plastic bag. Store bag in sturdy plastic box for protection until ready to use.
Grind mandibular mounting surface of cast parallel to occlusal plane of teeth with model trimmer. Grind perimeter of cast with approximately 10-15° bevel to depth of buccal and labial vestibules. Avoid touching teeth or buccal and labial gingival areas with trimmer wheel.

Cut retention grooves in trimmed cast with laboratory knife or carborundum disc.

Score mounting surface of cast with laboratory knife or carborundum disc.

Raise and lock maxillary frame against incisal pin about 3-4 mm above heavy "0" ring depending on thickness of centric record. (If vertical dimension is not being changed by thickness of centric record, i.e. closed-bite interocclusal record, leave incisal pin set at "0").

**Note:** The raising of the maxillary frame on the incisal pin is an arbitrary procedure and does not change the relationship of the occlusal surfaces of the maxillary teeth to the protrusive path which will be set in the articulator at a later time.
5. Rotate centric latch forward to engage latch with axis shaft and depress centric pin into centric channel of lower frame of articulator.

6. The mandibular mounting stand has two hole locations. The top hole is used for High (H) model articulators; the bottom hole is used for Low (L) model articulators.

7. Grasp articulator upside down in one hand and vertical support arm of mounting stand with other hand. Insert "far side" extending analog axis pin into appropriate hole in mounting stand.

8. Flex "near side" vertical support arm outward to allow arm to spring inward and capture extending end of analog axis pin in appropriate hole in support arm.
Hinge mandibular frame back to open position. Adjust and lock support pin with thumb screw.

Place centric record carefully on maxillary cast and verify fit. Pay particular attention to see that there are no contacts of centric record material with soft tissue unless it is a designated area to support a distal edentulous ridge.

Remove any occlusal bubbles or artifacts if present in tooth area of mandibular cast. Place mandibular cast carefully into cusp tip impressions in centric record and verify fit.

Close mandibular frame of articulator over cast until incisal pin touches incisal table to determine amount of plaster needed for mounting. Grind mounting surface of cast if necessary so there will be at least a 5mm space between mounting plate and cast (area indicated by spatula).
Mix quick set mounting stone to consistency of whipped cream. Place amount of soft stone first on mounting plate, being sure to get stone into retention areas of plate.

Place minimum amount of soft stone on mounting surface of cast to make connection with stone on mounting plate. **Note:** Do not add more stone than required to make a small to moderate sized connection. If the mounting space is large it is best to build up on the cast and mounting plate and allow this stone to harden. Then make the final connection with a small amount of stone to keep the expansion errors to a minimum.

Adjust length of support post to level mounting surface of mandibular cast (arrow).

Spray entire mandibular frame, including condylar element and analogs with silicone lubricant spray. Also spray the mounting stand for protection of stand and easy removal of any residual mounting stone.
Close mandibular frame to join two pads of soft mounting stone until end of incisal pin rests on incisal table (arrow). Press cast tightly into centric record with thumb and fingers at premolar areas (arrows) while palm of hand rests on frame of articulator. Hold in this manner until quick-set stone reaches initial set. Then remove hand and leave articulator undisturbed until mounting stone has completely hardened.

Remove articulator from mounting stand by first pulling laterally on one support arm of stand to flex arm sufficiently to release axis pin of analog (arrow) and then twist articulator slightly to free extending analog axis pin from support arm.

Pull articulator toward you to release other analog axis pin from its support arm on mounting stand. Lift articulator upward and away from mounting stand.

Release centric latch to allow for easy removal of centric record.
When mounting stone has hardened, loosen mounting plate screw and remove cast from lower frame.

For added strength and esthetics, add soft mix of quick-set plaster using edge of mounting plate and cut edge of buccal and labial vestibules of cast as guides for spatula. Allow plaster to reach final set.

Remove any residual plaster on mounting plate and articulator mounting surface and replace mandibular cast on articulator. Always rotate cast in direction the mounting screw is being tightened to maintain highest accuracy.
Raise and lock incisal pin and support pin (arrow) at least 5mm above incisal table.

Loosen thumb screws and retract right and left Dyna-Link pins (arrow).

Place Dyna-Link pins in storage holes in articulator legs (arrow).

Release centric latch (arrow) to allow centric pin to spring upward and lift lower end of pin out of centric channel in mandibular frame. (If centric pin does not spring upward when latch is retracted, rotate centric pin cap to release it.)

These instructions apply to the following items:

1610, 1620, 1701, 1801, 1210, 1211, 1230, 1231
5. Separate maxillary frame from mandibular frame of articulator.

6. Stretch elastic band on lower surface of mandibular frame over extending latch arm to keep latch retracted back and down out of the way.

7. Loosen right and left analog shaft lock screws with hex wrench.

8. Rotate and lock both motion analogs in their "0" positions using only thumb screws to maintain position. The "0" line should be equal to the upper surface of the analogs. The analogs should be in contact with the calibrated sides of the articulator.
Place protrusive interocclusal record on mandibular cast. Fit maxillary cast vertically into protrusive record. (Be sure centric and incisal pins have been raised.)

While placing straight downward pressure on maxillary cast (vertical arrows) to keep maximum contact with protrusive record, loosen incisal pin screw and allow incisal pin to drop down to make contact with incisal table (horizontal arrow). Lock incisal pin firmly before proceeding.

**Note:** This procedure produces a larger tripod along with the casts and protrusive record for better stabilization.

While holding downward pressure on the casts with one hand, move the other hand to grasp the right analog thumb screw.

While continuing downward pressure above cast, loosen thumb screw and allow right side analog to "fall" (rotate) downward to contact superior surface of condylar element (curved arrow). Tighten axis shaft thumb screw to hold the analog angular position.
Angular setting is read where upper surface of analog corresponds to a calibration line on side of articulator (arrow).

After analog angulations have been obtained, make sure analogs are in contact with calibrated sides of articulator. Tighten both analog axis shaft lock screws with hex wrench to retain analog angulation.

While maintaining downward pressure on casts (large arrow), loosen left side axis shaft thumb screw to obtain angular inclination for left side. If analog does not rotate freely downward into contact with condylar element, tap lightly on upper anterior surface of analog.

**Note:** If the patient's condyles did not protrude symmetrically, it may be necessary to move the analogs slightly laterally away from the calibrated side of the articulator to make contact with condyle element.

Reinsert right and left Dyna-Link pins (arrow) and lock in place with retaining thumb screws. Release elastic centric latch hold down and engage centric latch over centric pin cap.
When centric latch is engaged and articulator is closed, extending arm of latch automatically depresses centric pin (arrow) and places lower end of centric pin in centric channel of mandibular frame.

Centric pin engaged in centric channel (arrow). Eccentric movements (lateral & protrusive) should never be attempted when centric latch is engaged or when centric pin is in centric channel.

To occlude casts in centric relation, raise and lock incisal pin and support post both about 5mm above incisal table. Hinge maxillary frame by lifting up on lower end of incisal pin.

To execute protrusive and lateral movements, release centric latch by pushing distally on protruding end of latch (arrow). Be sure centric pin springs upward to disengage centric channel on mandibular frame.
If centric pin does not spring upward when latch is released, rotate centric pin cap (arrow) to release it.

Depress centric pin cap with finger (arrow) to temporarily locate centric relation during use of instrument. (Hinging movement can be made with centric pin depressed but lateral movements should never be attempted with centric locator pin in depressed position.)

To make protrusive - retractive movement, grasp vertical frame of articulator with one hand. Separate casts by pushing down on incisal table (lifting up on incisal pin). Then pull forward on incisal table (push distally on incisal pin) (arrows) until incisor teeth are edge to edge. Slowly release finger pressure and allow mandibular frame to retrude to centric relation.
To occlude teeth in a right lateral chewing motion, grasp end of incisal pin with thumb and index finger and left maxillary frame (depress mandibular) to separate teeth. Then move mandibular frame right (incisal pin left) approximately 3mm (cusp to cusp). Bring casts slowly into cusp contact. Keep slight forward pressure on incisal pin to assure condylar border movement while occluding cast slowly back to centric relation.

For left lateral movement use same basic procedure as for right lateral movement.

To reconnect centric latch when articulator is closed, rotate latch upward and forward with fingers (curved arrow) until cradles of latch engage analog axis shafts. (This procedure will automatically depress centric pin into centric channel of mandibular frame of articulator.)

Centric latch can also be engaged when articulator is in open position by exerting distal pressure on latch bar with fingers (arrow).
To lock centric locator pin in down position when centric latch is disengaged, place finger on flange of pin cap (arrow).

then depress centric pin cap and rotate clockwise (arrows).

Lingual approach to teeth is accomplished through lingual access area of articulator.

When articulator is not in use, it is recommended that incisal pin be locked in contact with incisal table (arrow), slightly separating the teeth to prevent tooth breaking from casts.
Magna-Split II System Instructions

1. Fasten Metal Mounting Plate to Articulator with fastening screws.

2. Attach Magnet to Mounting Plate with mounting plate screw.

3. Place plastic index plate to metal magnetic mounting plate.

4. Add plaster to plastic index plate and study cast to mount models in usual manner.

5. To prevent losing the magnet assembly, Do not try to remove your casts by unscrewing the knob, the magnet housing and magnet will fall out or stay with the mounted casts.

6. To prevent casts from separating from mounting plate, grasp the cast and mounting plate with thumb and fingers. Tilt the mounted cast assembly sideways to release cast from mounting plate magnet. (Do not pull on mounted casts.)

Check to make sure your magnet is still on your articulator, without a magnet, your stone transfer plates will not connect.

2860: If used more than one time, insert may come loose and plate will no longer index to base plate.