



2000 Series  
Articulator  
and  
QuickMount  
Face-Bow  
Instruction  
Manual



## WHIP MIX 2000 SERIES ARTICULATORS

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**Model 2240**



**Model 2340**

# CONTENTS

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<b>INTRODUCTION</b>	5
<b>OBTAINING FACE-BOW REGISTRATION</b>	6
I.    Preparing Face-Bow	6
II.   Preparing Face-Bow Fork	7
III.  Positioning Face-Bow on the Patient	9
IV.  Removing Face-Bow from the Patient	11
V.   Obtaining Interocclusal Records	12
<b>DIRECT MOUNTING THE MAXILLARY CAST ON 2000 SERIES ARTICULATORS</b>	16
I.    Preparing the Articulator for Mounting Casts	16
II.   Placing a Direct Mounting Face-Bow on the Articulator	19
III.  Mounting the Maxillary Cast with a Direct Mounting Face-Bow	21
<b>INDIRECT MOUNTING THE MAXILLARY CAST ON 2000 SERIES ARTICULATORS</b>	23
I.    Preparing the Face-Bow and Articulator for Mounting Casts	23
II.   Placing the Face-Bow Transfer Assembly on the Articulator	24
III.  Mounting the Maxillary Cast	25
<b>MOUNTING THE MANDIBULAR CAST</b>	26
<b>SETTING THE CONDYLAR GUIDANCE OF THE ARTICULATOR USING LATERAL INTEROCCLUSAL RECORDS</b>	30
<b>SETTING THE CONDYLAR GUIDANCE OF THE ARTICULATOR USING PROTRUSIVE INTEROCCLUSAL RECORDS</b>	35
<b>TECHNIQUE FOR FABRICATION OF A CUSTOM INCISAL GUIDE TABLE</b>	36
<b>COMPLETE DENTURE TECHNIQUE</b>	40
I.    Constructing Occlusion Rims	40
II.   Preparing the Face-Bow Fork	40
III.  Preparing the Face-Bow Armamentarium	41
IV.  Positioning the Face-Bow	41
V.   Obtaining Interocclusal Records	42
VI.  Preparing the Articulator for Mounting Casts	43
VII.  Mounting the Maxillary Cast	43

VIII.	Mounting the Mandibular Cast	45
IX.	Setting the Adjustable Incisal Guide Table	45
X.	Obtaining Protrusive Record	46
XI.	Fabricating a Remount Index	47
XII.	Remounting Casts	48
XIII.	Completed Dentures	48
<b>WHIP MIX RECORDING SYSTEMS</b>		49
<b>TRANSFER OF CASTS TO ANOTHER ARTICULATOR</b>		50
<b>INTERCHANGEABILITY WITH THE MODEL 2240 AND 2340 ARTICULATOR</b>		51
<b>REMINDERS AND SUGGESTIONS</b>		52
<b>MAINTENANCE</b>		53
<b>2000 SERIES ARTICULATORS PARTS LISTS</b>		54
	Model 2240 Articulator	54
	Model 2340 Articulator	55
<b>WHIP MIX FACE-BOW PARTS LISTS</b>		56
	Model 8645 Face-Bow (for Direct Mounting)	56
	Model 9600 Face-Bow (for Direct Mounting)	57
	Models 9175/9185/9195 Face-Bows (for Indirect Mounting)	58
	Models 9275/9285/9295 Face-Bows (for Indirect Mounting, Plastic Ear Bow)	59
<b>BIBLIOGRAPHY</b>		60

# INTRODUCTION

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The WHIP MIX Articulator and “QUICKMOUNT” Face-Bow are designed to enable the user to quickly and easily mount casts of a patient’s dentition on a mechanical device that will reproduce their natural relationship and movements with an acceptable degree of accuracy. The simplicity and speed with which the necessary registrations are obtained and transferred to the WHIP MIX Articulator enable the operator to accomplish corrective and restorative dentistry with much greater precision than has ever before been possible without the use of expensive equipment and time consuming techniques.

For those already using a fully adjustable instrument, a WHIP MIX Articulator serves as an excellent auxiliary instrument for diagnostic and patient-education purposes, as well as for constructing the clutches and recording devices needed to secure the proper recordings for setting the more complex instrument. Being arcon type instruments, WHIP MIX Articulators are ideal for the study of occlusion and the movements of the temporomandibular joint. With the condyle located on the lower frame and the guidance on the upper frame (arcon design), WHIP MIX semi-adjustable articulators have become the preferred choice of many teaching institutions. Advancing to a fully adjustable articulator becomes a much easier process after initial training on an arcon semi-adjustable articulator.

2000 Series Articulators feature the same sturdy construction and reliability which have been demonstrated successfully by other WHIP MIX Articulators. In addition, the following innovative and useful features have been incorporated.

- Ergonomic design
- The successful concepts of a curved eminentia and immediate side shift capability
- An easily positioned centric latch which provides a quick way to return to centric position
- A permanent intercondylar width of 110 mm — which is the same as the M setting found on other WHIP MIX Articulators
- Bilateral elastics function to hold the upper and lower members of the articulator together during excursive movement if secured

The WHIP MIX Model 2240 and 2340 Articulators are modified with the “ACCUMOUNT” Mounting System. This makes it possible to interchange mounted casts between any Model 2240 and 2340 Articulator without loss of accuracy.

Just as with other models in the WHIP MIX family of articulators, a variety of accessories are available. Each 2000 Series Articulator is packaged with the following items:

- 1 – Instruction Manual
- 1 – Serial Number Card
- 2 – #8580 Metal Mounting Plate, Set of 2
- 1 – Hex Driver

# OBTAINING FACE-BOW REGISTRATION

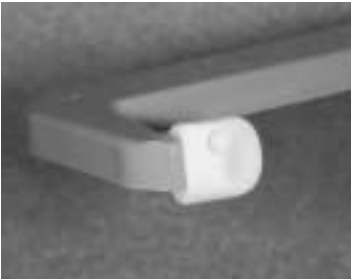
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**Fig. 1**

Items needed for a Face-Bow Registration:  
Face-bow including nasion relator and face-bow fork (bite fork)  
Elastomeric registration material  
Adhesive for elastomeric

## I. Preparing Face-Bow



**Fig. 2**

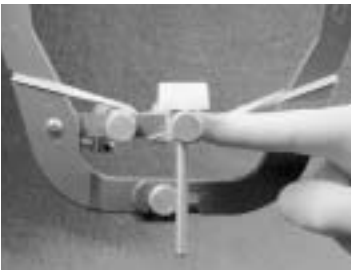
Clean and properly disinfect the plastic ear pieces before each use. If replacing them, make sure that the hole on the flat side of each is above the side arm and the plastic is seated until it touches the shoulder of the ear bow arm.



**Fig. 3**

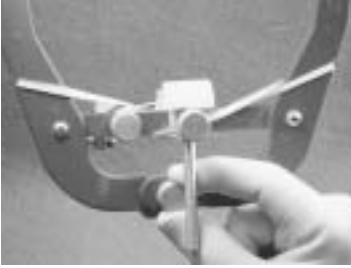
A rubber-band may be easily positioned on the face-bow to aid in its manipulation.

**Note the ability of the nasion relator assembly to move left and right along the cross bar and the face-bow caliper design allowing the side arms to move equal distances during the opening and closing motions.**



**Fig. 4**

Center the nasion relator assembly on the cross bar of the face-bow.



**Fig. 5**

Loosen the #8604 thumb screw on top of the face-bow. If using the metal face-bow, loosen the three #8604 thumb screws.



**Fig. 6**

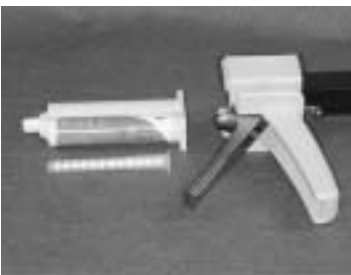
Loosen the #8640 thumb screw.



**Fig. 7**

Loosen the #8643 thumb screw.

## **II. Preparing Face-Bow Fork**



**Fig. 8**

Elastomeric registration material may be used as a bite registration medium for the bite fork.

Make sure the bite fork has been properly sterilized.



**Fig. 9**

Apply elastomeric adhesive uniformly over the top surface of the bite fork.



**Fig. 10**

Apply elastomeric registration material to the top surface of the bite fork.



**Fig. 11**

Position the bite fork so that the midline of the bite fork aligns with the facial midline and support the fork until the material is set.

The record should make a shallow registration of the maxillary cusp tips, and not perforate through to the bite fork.



**Fig. 12**

Inspect the registration for any soft tissue or deep occlusal registrations. It is only necessary to record the maxillary cusp tips, all else should be trimmed away using a sharp Bard-Parker blade.

### III. Positioning Face-Bow on the Patient



**Fig. 13**

Before attempting to place the face-bow onto the bite fork, it is suggested that the operator explain the procedure to the patient. Caution the patient that the plastic ear pieces in the auditory canal will greatly amplify noises during the procedure.



**Fig. 14**

Support the bite fork underneath by having the patient bite on cotton rolls. Some clinicians prefer to have the patient bite on the bite fork itself after registration material has been placed on both sides.



**Fig. 15**

A finger cot placed over each ear piece will help facilitate proper disinfection of the face-bow.

Remember, a rubber-band correctly placed will aid face-bow manipulation.



**Fig. 16**

With the bite fork positioned in the patient's mouth, start the toggle onto the bite fork shaft while the patient holds the side arms close to the ears.

**Note: Make sure the horizontal cross bar is above the bite fork shaft.**



**Fig. 17**

Instruct the patient to place each ear piece into the external auditory meatus and hold in place with a firm forward pressure.



**Fig. 18**

Center the plastic nose piece on the patient's nasion and exert firm pressure on the nose piece shaft while tightening the thumb screw of the nasion relator assembly. This pressure will help to firmly seat the ear pieces into the external auditory meatus.



**Fig. 19**

Tighten the #8604 thumb screw on top of the face-bow.



**Fig. 20**

Push the #8642 toggle back on the fork shaft until it is near, but not touching the lips.



**Fig. 21**

To prevent torquing of the face-bow and discomfort to the patient, support the fork and the horizontal bar with one hand and tighten the #8640 thumb screw.



**Fig. 22**

Next, tighten the #8643 thumb screw on the vertical bar while supporting the face bow, again taking care not to tilt the face-bow.



**Fig. 23**

The completed face-bow transfer.



#### **IV. Removing Face-Bow from the Patient**

**Fig. 24**

Loosen the #8604 thumb screw and slide the nasion relator away from patient's nose.



**Fig. 25**

Have the patient hold both arms of the face-bow and loosen the center thumb screw on top of the face-bow.



**Fig. 26**

The entire face-bow assembly is removed by advising the patient to pull the ear pieces out of their ears while helping to remove the bite fork from the mouth. Now is a convenient time to make the interocclusal records necessary to mount the mandibular cast and set the condylar guidance of the articulator.

## **V. Obtaining Interoclusal Records**

There are several materials available that may be used to make interocclusal records. There are also different techniques and philosophies for making these records. The material selected should complement the particular technique used. The technique suggested in this manual is one method and Whip Mix does not imply that this is the only correct technique.

The following interocclusal records (check bites) should be utilized to relate the mandibular cast to the maxillary mounting and to program the condylar guidance of the articulator:

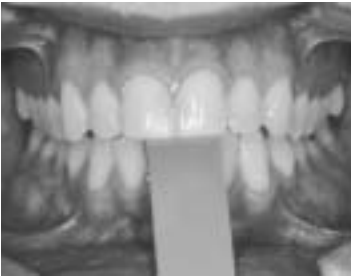
- Centric Relation and/or Maximum Intercuspatation
- Right Lateral
- Left Lateral
- Protrusive (optional)

## Centric Relation Record



**Fig. 27**

Many clinicians prefer to use an anterior deprogramming device such as a leaf gauge to help the patient achieve a centric relation position.



**Fig. 28**

Place the leaf gauge between maxillary and mandibular incisors. Instruct the patient to protrude and then retrude the mandible while closing on the leaf gauge.



**Fig. 29**

Additional leaves are required if posterior contacts are present. Ideal disocclusion is 0.5 mm in posterior.

Instruct the patient to move his mandible forward, back, and squeeze. This cycle should be repeated once a minute for a total of ten minutes. The patient should be instructed to bite with only enough force to hold the leaf gauge in position.



**Fig. 30**

During the ten minute period verify that posterior disocclusion is maintained. Add leaves as necessary.



**Fig. 31**

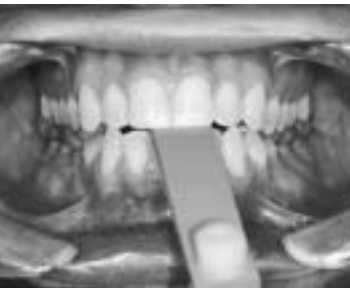
Usually after the ten minute period, a centric relation record can be made. The teeth are dried with cotton gauze.

**Note: Do not allow the patient to occlude while the leaf gauge is not in position.**



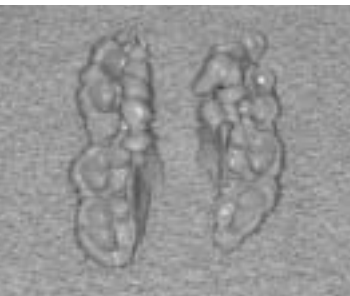
**Fig. 32**

Inject elastomeric registration material onto the mandibular occlusal surfaces.



**Fig. 33**

Place leaf gauge into position and instruct the patient to close into registration material. The patient is now instructed to protrude, retrude, squeeze together, and hold until the material is set.



**Fig. 34**

Remove and examine the centric relation record for:

- a. The presence of adequate cuspal indents.
- b. The absence of perforations through the material.

## Lateral Interocclusal Records



**Fig. 35**

Manipulate the mandible into centric relation. Inject elastomeric registration material onto the mandibular occlusal surfaces. Instruct the patient, while open, to slowly move the jaw toward his right shoulder.



**Fig. 36**

After moving 4–6 mm laterally, instruct the patient to close into the elastomeric until “cuspal indents” have been created.

Maintain this position until the registration material is set. The clinician may find it useful to support the mandible during this time.



**Fig. 37**

Remove and examine the right lateral record for:

- a. The presence of adequate cuspal indents.
- b. The absence of perforation and/or soft tissue contact.

Repeat this procedure for the left lateral check record, having the patient move his or her jaw toward his or her left shoulder.

# DIRECT MOUNTING THE MAXILLARY CAST ON 2000 SERIES ARTICULATORS

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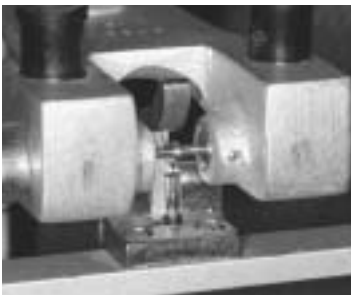
## I. Preparing the Articulator for Mounting Casts



**Fig. 38**

The following items are needed for mounting casts on a 2000 Series Articulator:

- Face-Bow Registration
- Interocclusal Records
- Maxillary and Mandibular Casts
- 2 – Clean QuickMount Plates
- 2 – Metal Mounting Disks
- Mounting Stone
- Spatula
- Graduated Cylinder
- Rubber Bowl
- Sticky Wax
- Rigid Wire
- Plaster Knife



**Fig. 39**

Set the centric latch in the “open” position.



**Fig. 40**

Detach the bilateral elastics from the lower frame.



**Fig. 41**

Loosen the #8511 incisal guide pin screw and remove the incisal guide pin.



**Fig. 42**

Set each condylar guide to the "FB" (Face-Bow) marking on the condylar inclination scale in preparation for attaching the face-bow assembly to the upper frame of the articulator.



**Fig. 43**

The Model 2340 Articulator's condylar guide should be set to 30° on the condylar inclination scale in preparation for attaching the face-bow assembly to the upper frame of the articulator.



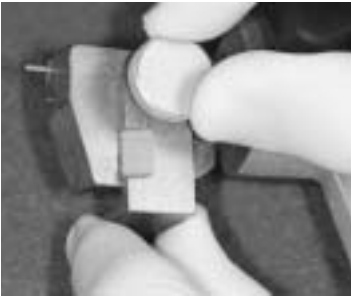
**Fig. 44**

Firmly tighten each Clamp Screw. This may be accomplished by using the black thumb screws or the hex driver.



**Fig. 45**

The immediate side shift guide settings are irrelevant at this point. However, it is advisable to set them to the “0” mark.



**Fig. 46**

On the Model 2340 Articulator, the progressive side shift should be set to the “0” mark.



**Fig. 47**

Place a metal mounting disk into each QuickMount Magnetic Plate.



**Fig. 48**

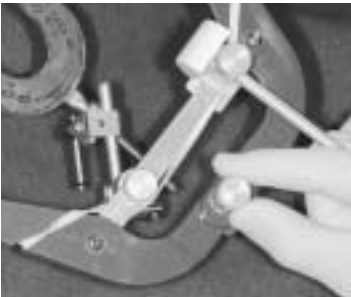
Attach QuickMount Magnetic Plates to the upper and lower frames of the articulator. The articulator is now ready to have the face-bow secured to its upper frame.

## II. Placing a Direct Mounting Face-Bow on the Articulator



**Fig. 49**

Slide the plastic nasion relator assembly to the side of the horizontal crossbar of the face-bow if this has not already been done.



**Fig. 50**

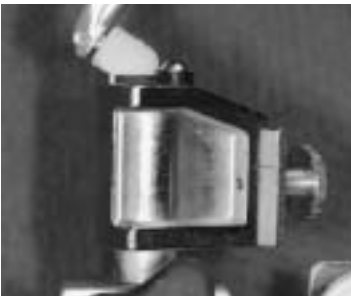
Loosen the thumb screw on the top of the face-bow.

**Note:** A rubber-band properly positioned aids in manipulation.



**Fig. 51**

Guide the face-bow beneath the upper frame of the articulator. The ear pieces should be even with the brass mounting pin.



**Fig. 52**

Position the brass mounting pin located on the outer flange of the left condylar guide assembly into the hole on the medial side of the left plastic ear piece of the face-bow. While holding the left side of the face-bow in place, guide the right brass mounting pin into the hole in the right face-bow ear piece.



**Fig. 53**

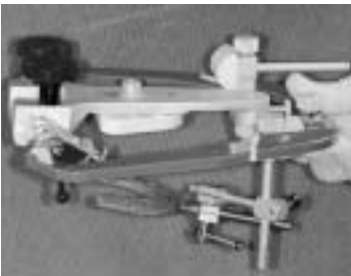
Allow the anterior end of the upper frame of the articulator to rest on the horizontal cross bar of the face-bow.



**Fig. 54**

Securely tighten the thumb screw on top of the face-bow.

**Note that the rubber-band maintains the ear pieces against the brass mounting pins with a slight pressure which helps facilitate stable placement of the face-bow on the articulator.**



**Fig. 55**

Because the guidance of this instrument is part of the upper frame and the face-bow is, in effect, one piece with this frame, the face-bow fork is in fixed relation to the upper frame.



**Fig. 56**

The face-bow only relates to the upper member and not to the lower member of the articulator. The relationship of the face-bow to the lower member is of no consequence at this point and the lower member will only serve as a convenient support during the mounting of the maxillary cast.



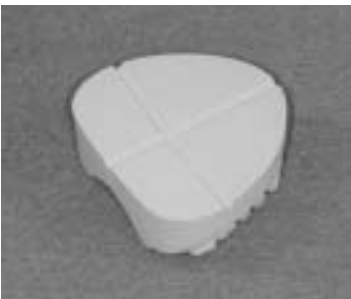
**Fig. 57**

Engage the centric latch for added stability.



**Fig. 58**

The Face-Bow Fork Support is a convenient accessory used to support the bite fork during the mounting of the upper cast. The face-bow fork support attaches to the lower frame in place of the lower mounting plate. Its cross arm is raised to gently contact the under-surface of the face-bow fork to prevent flexing of the fork. (The 28706 is shown here.)



### **III. Mounting the Maxillary Cast with a Direct Mounting Face-Bow**

**Fig. 59**

Indices should be placed in cast if it will need to be recovered and replaced at any time, otherwise retentive undercuts should be placed in the base.



**Fig. 60**

Soak the maxillary cast in clean slurry water.



**Fig. 61**

Seat the maxillary cast in the face-bow registration and make sure it is stable with no rocking. The cast will need additional trimming if the upper frame will not close so that the front end of the upper frame contacts the face-bow cross bar.



**Fig. 62**

Whip Mix MOUNTING STONE is ideal for mounting casts because it is formulated to have a short working time, great stacking ability and extremely low setting expansion.

Lift the upper frame of the articulator and apply mounting stone to the base of the cast and the mounting plate.

An inaccurate mounting will result if the bite fork flexes during mounting.



**Fig. 63**

Close the upper frame to contact the cross bar, bringing the mounting stone on the two surfaces together. Do not use too thick a mix of mounting stone or attempt to apply force when the stone has already begun to set. Hold the upper frame in position until the mounting stone has set.



**Fig. 64**

It is not necessary that the mounting stone be smooth and all voids filled with the first mix. Many clinicians prefer to utilize a second mix to fill the voids after the first mix has set.

## INDIRECT MOUNTING THE MAXILLARY CAST

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**Fig. 65**

Whip Mix Indirect Mounting Face-Bows combine the face-bow registration technique of the traditional “QUICKMOUNT” Face-Bow with the many advantages of indirect mounting. The indirect mounting procedure offers the user more access, increased stability, greater ease of use, and optimum instrument efficiency.

Incorporating the indirect mounting technique does not require dramatic technique changes. The face-bow registration is taken on the patient utilizing the same technique as with the original Whip Mix “QUICKMOUNT” Face-Bow. Once the registration is obtained, the Transfer Assembly is removed from the face-bow and positioned onto the lower frame of the articulator.



**Fig. 66**

All Whip Mix “QUICKMOUNT” Face-Bows can be modified to have indirect mounting capability.

The conversion package includes:

- 1 – Transfer Base Assembly
- 1 – Cross Bar
- 1 – Transfer Assembly



**Fig. 67**

### **I. Preparing the Face-Bow and Articulator for Mounting Casts**

Unscrew the #8604 Locking Screw on the cross bar to release the transfer assembly which holds the bite registration from the face-bow.



**Fig. 68**

Position the #8686 Support Bar onto the top of the Transfer Assembly and secure in place with the same #8604 Locking Screw.

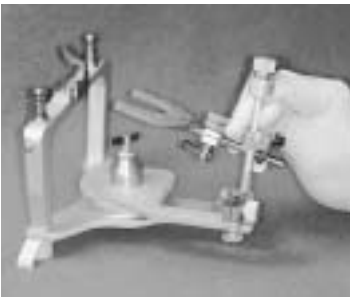
Remove the upper frame of the articulator from the lower frame and then remove the incisal guide pin.



**Fig. 69**

Place the transfer base assembly on the lower member of the articulator and secure it using the magnetic face-bow fork support.

Set the condylar inclination to the "FB" marking on each condylar inclination scale for articulators with immediate side shift. Set the condylar inclination to 30° for models with progressive side shift. Next, set the immediate or progressive side shift guides to "0".



## II. Placing the Face-Bow Transfer Assembly on the Articulator

**Fig. 70**

Insert the vertical rod of the transfer assembly into the transfer base and lower it until the bottom of the vertical rod contacts the transfer base. Tighten the #9184 Clamp Screw so that the vertical rod fits securely in the Transfer Base.



**Fig. 71**

Place the upper frame of the articulator onto the lower frame so the front of the upper frame now rests on the #8686 Support Bar and place a QuickMount Magnetic Plate on the upper frame.



**Fig. 72**

Raise the face-bow fork support until it touches the under-surface of the face-bow fork.



**Fig. 73**

Engage the centric latch or spring latch on the articulator to keep the condyles in contact with the posterior and superior walls of the condylar guides.



### **III. Mounting the Maxillary Cast**

**Fig. 74**

Position the upper cast into the bite registration.



**Fig. 75**

Apply Whip Mix MOUNTING STONE to the upper mounting plate and the top of the upper cast and carefully hinge the upper frame so that it contacts the top of the #8686 Support Bar.

When the stone has set, remove the upper frame to allow removal of the transfer assembly and transfer base. Replace the incisal guide pin in the upper frame and re-attach to lower frame. Also, replace the mounting plate on the lower frame and proceed with the mounting of the lower cast as described in the Articulator Instruction Manual.

## MOUNTING THE MANDIBULAR CAST

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**Fig. 76**

Replace the incisal guide pin in the upper frame, rounded end down.



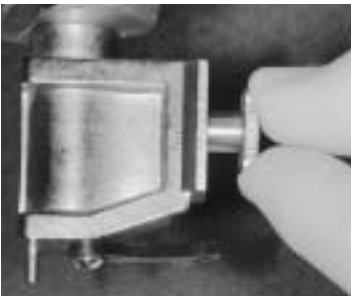
**Fig. 77**

The pin should be adjusted 3–5 mm above the zero mark (the dark line encircling the pin) to compensate for the thickness of the centric relation (CR) or maximum intercuspation (MI) registration used to mount the mandibular cast.



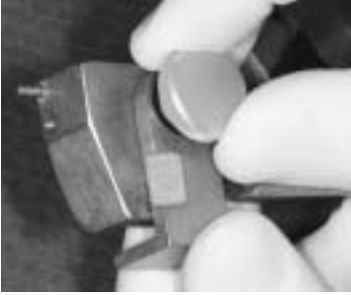
**Fig. 78**

Make sure the centric latch is engaged.



**Fig. 79**

Set both immediate side shift guides to the “0” position.



**Fig 80**

If using the Model 2340 Articulator, set both progressive side shift guides to the "0" position.



**Fig 81**

Reattach the bilateral elastics to the lower frame.



**Fig. 82**

Place the articulator upside down, resting on the incisal guide pin and the two clamp screws.



**Fig. 83**

Trim interocclusal records so that only the cusp tips are remaining and place the CR or MI interocclusal registration on the maxillary cast. Make sure the record is completely seated on the maxillary cast.

Make sure that retention grooves or indices have been cut into the base of the mandibular cast.



**Fig. 84**

Position the mandibular cast on the CR or MI registration, verify cast is completely seated into the registration and check for stability. Secure three 3-inch sections of coat hanger wire to maxillary and mandibular casts with sticky wax or impression compound.

Make sure the mandibular cast has been properly wetted prior to mounting.



**Fig. 85**

Hinge the lower frame into an open position and apply mounting stone to the base of lower model and the lower mounting plate.



**Fig. 86**

Hinge the lower frame closed until the incisal guide pin meets the incisal guide block. Make sure the condylar elements are seated flush against the posterior and superior walls of the condylar guides. Carefully hold the articulator in this position until the mounting stone has set.



**Fig. 87**

Prepare a second mix to fill any voids so that an aesthetic product results. Remove the stiff wire and interocclusal records.

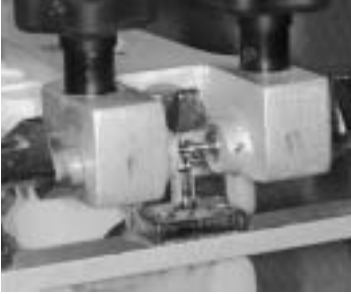


**Fig. 88**

Finally, loosen the incisal guide pin screw and lower the pin until the maxillary and mandibular casts contact. Retighten the incisal guide pin screw and make sure the incisal guide pin is positioned in the center of the incisal guide table.

# SETTING THE CONDYLAR GUIDANCE OF THE ARTICULATOR USING LATERAL INTEROCCLUSAL RECORDS

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**Fig. 89**

Release the centric latch.



**Fig. 90**

Detach the bilateral elastics from the lower frame.



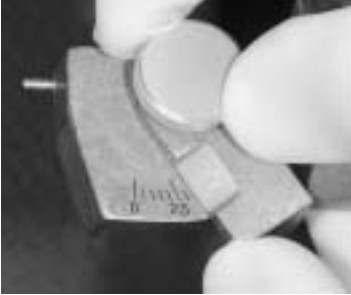
**Fig. 91**

Set both condylar guides to the 0° setting indicated on the condylar inclination scale – firmly tighten the right condylar guide locking screw and lightly secure the left condylar guide locking screw.



**Fig. 92**

Set both immediate side shift guides to their most open position.



**Fig. 93**

If using the Model 2340 Articulator, set the progressive side shift guides to their most open position.



**Fig. 94**

Loosen the incisal guide pin screw. Raise the incisal guide pin to prevent any interference and retighten the screw.



**Fig. 95**

With the upper frame and its cast inverted, carefully seat the right lateral excursion interocclusal records on the upper cast.



**Fig. 96**

Holding the upper frame in one hand and the lower frame in the other, place the right working condylar element in the right condylar guide. Make sure that the right condyle is seated "flush" against the rear wall. Gently seat the lower cast into the right lateral record and lightly hold the articulator and casts in position on the right side.



**Fig. 97**

Notice that the left condylar element has moved away from both the superior and posterior surfaces of the condylar guide and toward the medial wall.



**Fig. 98**

To set the inclination of the left condylar guide, carefully loosen its locking screw and rotate the guide until the superior wall touches the condyle element.

It is advisable when making these adjustments that the contact between the condyle and the superior wall should also be judged by sight, rather than depending solely on the sense of touch. This helps to make certain that the casts are not forced out of position.



**Fig. 99**

Tighten the condylar guide locking screw to clamp the guide in position. **DO NOT USE EXCESSIVE PRESSURE** when tightening the locking screw.



**Fig. 100**

To set the left immediate side shift, loosen the left side shift clamp screw and slide the left side shift guide until it touches the side of the condyle element.




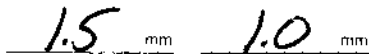

**Fig. 101**

If using the Model 2340 Articulator, loosen the left side shift guide holding screw and move the side shift guide until it touches the side of the condyle element.



**Fig. 102**

Retighten the left side shift clamp screw and then return the articulator to its upright position.

		Patient <u>JOHN DOE</u>	
Articulator No. <u>228885</u>		Date <u>3-6-03</u>	
Immediate Side Shift		Condylar Inclination	
Right	Left	Right	Left
<u>1.5</u> mm	<u>1.0</u> mm	<u>40°</u>	<u>37°</u>
			

**Fig. 103**

Record the amount of condylar inclination and immediate side shift found on the left side on a Patient Registration Card.



**Fig. 104**

The right condylar guidance is adjusted using the left lateral excursion record and repeating the above procedure.

# SETTING THE CONDYLAR GUIDANCE OF THE ARTICULATOR USING PROTRUSIVE INTEROCCLUSAL RECORDS

---



**Fig. 105**

Many clinicians wish to set the condylar inclination of the articulator with a protrusive record. To utilize the protrusive record, first neutralize the condylar inclination and immediate side shift settings. Place the protrusive record on the inverted upper frame of the articulator and gently seat the lower cast into the protrusive record.



**Fig. 106**

Both condylar elements will have moved away from the posterior and superior surfaces of their respective condylar guides.



**Fig. 107**

Using sight and touch, rotate the right condylar guide until it contacts the condylar ball, then tighten the condylar locking screw. Record the reading and repeat the procedure on the left side. The lateral records are then used to determine the immediate side shift settings.



**Fig. 108**

The completed mounting on a Model 2240 Articulator.

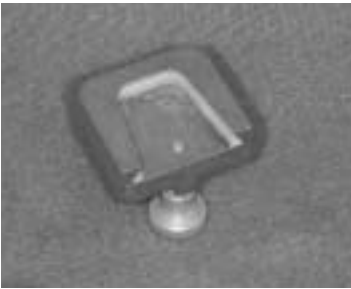
## TECHNIQUE FOR FABRICATION OF A CUSTOM INCISAL GUIDE TABLE

---



**Fig. 109**

To prevent possible abrasion of the stone casts during manipulation of the articulator, or to make a permanent disocclusive record of a specific case, the natural incisal guidance may be recorded. This is done by adding a layer of self-curing resin to the plastic guide block and forming the guidance path into the resin as it cures.



**Fig. 110**

The Dovetail Incisal Block is a convenient accessory which has been designed so that a custom acrylic guide may be easily removed and can later be easily replaced. Its dovetail sides and centering screw assure the user of accurate repositioning.



**Fig. 111**

Materials needed for fabrication of a custom incisal guide table.



**Fig. 112**

Raise the incisal guide pin 2–3 mm and release the centric latch.



**Fig. 113**

Lubricate the rounded end of the incisal guide pin. Next, prepare the surface of the incisal guide table with 1–2 drops of self-curing acrylic monomer.



**Fig. 114**

Mix enough acrylic to cover the incisal guide table to approximately a 6 mm thickness.



**Fig. 115**

Once the acrylic is in a doughy state, place the acrylic onto the incisal guide table.



**Fig. 116**

Close the articulator in centric position.



**Fig. 117**

Move the upper frame of the articulator to produce a straight protrusive movement terminating in an end-to-end incisal relationship.



**Fig. 118**

From centric, move the upper member of the articulator to give a straight right lateral movement.



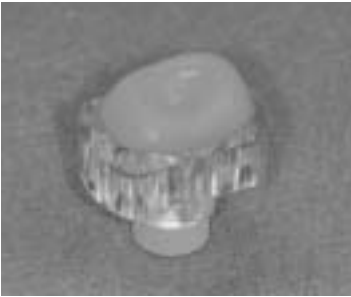
**Fig. 119**

Then, move the upper member of the articulator to give a straight left lateral movement.



**Fig. 120**

Move through all intermediate excursions between the lateral and protrusive positions. Repeat the excursive movements until the acrylic has reached a firm stable consistency. Allow the acrylic to polymerize and trim off excess.



**Fig. 121**

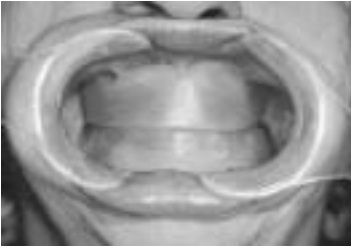
Final custom incisal guide table.

# COMPLETE DENTURE TECHNIQUE (Shown on Model 2240 Articulator)

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## I. Constructing Occlusion Rims

Having obtained a master cast, wax occlusion rims should be formed on well-adapted record bases (base plates) for the upper and lower arches. After examination of the upper record base in the patient's mouth, adjust the base plate, if necessary.



**Fig. 122**

Contour the upper and lower occlusion rims, establish occlusal vertical dimension and plane of orientation.



**Fig. 123**

Create wedge-shaped V indices in the wax occlusion rims.

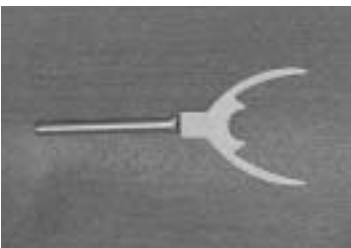
## II. Preparing the Face-Bow Fork



**Fig. 124**

Apply elastomeric adhesive to a properly sterilized bite fork.

**Note: Adhesive not mandatory when using perforated bite fork.**



**Fig. 125**

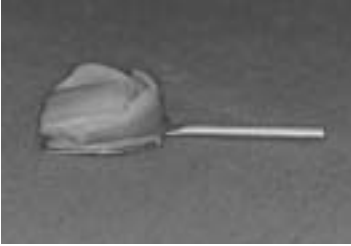
Some clinicians prefer to utilize a pronged bite fork.

### III. Preparing Face-Bow Armamentarium

Follow the same procedure as that outlined earlier on pages 6–7.

### IV. Positioning Face-Bow

**Fig. 126**



Extraorally, record the maxillary wax rim indices onto the bite fork using elastomeric. Make sure the mid-line of the palate and the stem of the bite fork are properly aligned.



**Fig. 127**

Place bite fork/wax rim assembly into patient's mouth.



**Fig. 128**

Position the face-bow onto the patient as described on pages 9-12.



**Fig. 129**

Tighten the thumb screw on top of the face-bow.



**Fig.130**

Tighten the thumb screw on the horizontal bar first. Next, tighten the thumb screw on the vertical bar.



**Fig. 131**

Once the face-bow record has been made, remove the wax rim and record base from the bite fork registration. Set aside the face-bow assembly for later mounting.

## V. Obtaining Interoclusal Records



**Fig. 132**

To make the jaw relation record, an elastomeric registration material or other appropriate record medium is placed onto the V indices of the wax rim.



**Fig. 133**

The patient is guided into centric relation and is allowed to close until the wax rims come into contact. The registration material is allowed to set and is then removed.

## VI. Preparing the Articulator for Mounting Casts



**Fig. 134**

Many operators prefer to replace the plastic incisal guide block with an adjustable metal table, such as the #2460 Adjustable Guide Table (shown).



**Fig. 135**

To install the adjustable guide table, remove the #8526F Plastic Incisal Guide from the articulator. Slide the adjustable table into the thumb screw slot in the lower frame of the articulator and tighten the thumb screw.



**Fig. 136**

Adjust the position of the adjustable guide table until the chiseled end of the incisal guide pin lies directly over the scribed line on the guide table.

**Note:** Guide pin must be set at "0" on upper member.

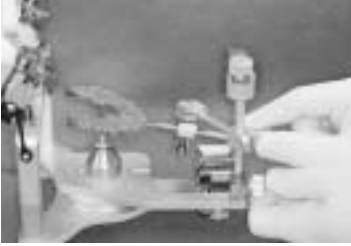
## VII. Mounting the Maxillary Cast

The indirect technique of mounting the maxillary cast will be demonstrated. However, the direct mounting technique may also be used to mount the maxillary edentulous cast.



**Fig. 137**

The transfer assembly has been removed from the face-bow and the support bar is placed into position.



**Fig. 138**

The QUICKMOUNT transfer base has been placed onto the lower member of the articulator and is held in position by the QUICKMOUNT cast support. The transfer assembly is inserted into the transfer base and the clamp is securely tightened.



**Fig. 139**

The QUICKMOUNT cast support is adjusted until it lightly makes contact with the bottom of the bite fork.



**Fig. 140**

The cast is placed into the occlusion rim, which is then seated into the registration on the bite fork. The assembly is now completed and ready for the addition of Whip Mix MOUNTING STONE.



**Fig. 141**

The completed mounted maxillary cast. The transfer assembly and transfer base may be removed and the incisal guide pin replaced.

## VIII. Mounting the Mandibular Cast



**Fig. 142**

Place the jaw relation records between the wax occlusion rims. Be certain the casts or record bases are not in contact with one another. Casts may be secured in this position by using rigid wire and sticky wax.



**Fig. 143**

The mounted maxillary and the affixed mandibular casts can now be placed on the articulator. The casts and articulator are inverted and Whip Mix MOUNTING STONE is added.



**Fig. 144**

The mounting is complete. Additional jaw relation records can verify its accuracy. Accurate fit of the verification records into the V-shaped indices will denote a precise mounting.

## IX. Setting the Adjustable Incisal Guide Table

After the anterior denture teeth are positioned, the adjustable guide table may be set.



**Fig. 145**

Release the latch on the articulator. Loosen the #2472 Indicator Clamp Knob of the incisal guide table and bring the anterior teeth into edge-to-edge contact.



**Fig. 146**

Adjust the inclination of the guide table until it contacts the incisal pin, then retighten the #2472 Indicator Clamp Knob.



**Fig. 147**

Move the teeth into a left lateral relation.



**Fig. 148**

Loosen the #2466 Clamping Knob and raise the right wing of the table until it touches the chisel end of the guide pin. Tighten the clamping knob to secure this position and repeat the same operation for the left wing with the teeth in a right lateral position.

## **X. Obtaining Protrusive Record**



**Fig. 149**

The aesthetic try-in appointment affords the clinician the ability to verify tooth setup and obtain a well-indexed protrusive record. The record should be created at an extended protrusive position to allow for bilateral condylar movement.



**Fig. 150**

Set condylar inclinations on the articulator as described previously on pages 36–41.

## **XI. Fabricating a Remount Index**



**Fig. 151**

After denture processing, replace the maxillary denture and cast onto the indexed mounting. Replace the mounting, cast, and denture onto the articulator. Attach the QUICKMOUNT remount jig to the lower frame.



**Fig. 152**

Add sufficient stone to the remount jig to index only the cusp tips of the denture teeth.



**Fig. 153**

The completed remount index.

## XII. Remounting Casts

After the dentures have been polished, the maxillary denture can be mounted to the articulator in anticipation of a clinical remount to evaluate the denture occlusion.



**Fig. 154**

Obtain remount casts. Using the remount index, mount the maxillary denture and remount cast to the articulator.



**Fig. 155**

During the clinical placement of the dentures following adjustment of tissue surfaces, new centric relation records are made and used to mount the mandibular denture and remount cast. The denture occlusion may be evaluated and adjusted as needed.

## XIII. Completed Dentures

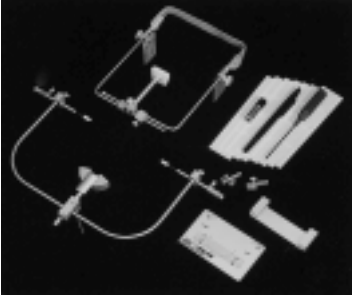


**Fig. 156**

The patient and her completed dentures.

## WHIP MIX RECORDING SYSTEMS

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**Fig. 157**

For the clinician who desires a recording system, Whip Mix offers the #8450 QUICK SET RECORDER.

The #8450 QUICK SET recording systems offers a time saving method for recording the protrusive condylar path and measuring the amount of immediate side shift. The #8450 QUICK SET RECORDER provides this information from an approximate hinge axis location.

Listed below are other potential uses of the #8450 QUICK SET RECORDER.<sup>1</sup>

1. Measurement of the timing or absence of a click during splint therapy.
2. Comparison of click patterns in vertical opening and lateral and protrusive excursions.
3. Setting an articulator for analysis or treatment.
4. Comparison of eminence angles before side-to-side restorative dentistry.
5. Estimates of eminence angles before surgical eminectomies.
6. Measurement of condylar movement after TMJ surgery.

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<sup>1</sup> Bates, Robert E., Welsch, Boyd B., and Stewart, Carol M., "Temporo Mandibular Joint Disk Position as Determined by a Simple Recorder," *Journal of Prosthetic Dentistry*, Vol. 56, No. 2, pp. 221-224, 1986.

## **TRANSFER OF CASTS TO ANOTHER ARTICULATOR**

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It is often desirable to remove the casts from the Whip Mix Articulator on which they were originally mounted and to place them on another Whip Mix instrument. This is a great convenience when the casts are to be forwarded to an out-of-town laboratory.

The only change from the customary procedure for mounting is the method of mounting the mandibular cast. The “split-cast” mounting technique using notches is followed, OR, the cast is attached to its mounting plate so that it can be easily removed later without danger of damage.

The following are sent to the laboratory:

- The mounted maxillary cast
- The mandibular cast (removed from its mounting)
- A duplicate patient registration card
- The interocclusal centric registration used in the original mounting
- The plastic incisal guide table on which the incisal guidance has been recorded

The technician places the mounted maxillary cast on the articulator. Using the centric registration, the mandibular cast is then mounted to the lower frame of the second articulator. The incisal guide table is positioned, and the incisal pin is adjusted to the correct vertical height. The condylar guidance is set from the notations on the patient's record card, and the transfer is complete.

If the “split technique” was used on the first mounting of the mandibular cast, this original mounting should be saved. When the casts are returned, they can be quickly replaced on the original articulator.

# INTERCHANGEABILITY WITH THE MODEL 2240 AND 2340 ARTICULATOR

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**Fig. 158**

The Model 2240 and 2340 Articulators incorporate the basic design of the Model 2200 and are modified with the “ACCUMOUNT” Mounting System. The “ACCUMOUNT” System makes it possible for the dental practitioner and the dental laboratory to interchange casts without exchanging articulators.



**Fig. 159**

During manufacture, each Model 2240 or 2340 Articulator has a special table firmly and precisely attached to the lower frame using a special fixture and low-fusing alloy.



**Fig. 160**

The relationship between the upper and lower mounting plate is checked to verify precise alignment. This assures that casts can be interchanged between any Model 2240 Articulator or between Model 2340 Articulators without loss of accuracy.

## Features and Advantages

1. When clinicians and dental students use a dental laboratory that has a Model 2240 or 2340 Articulator, casts need no longer be mounted on an articulator when shipped to such a laboratory.
2. Clinicians can purchase fewer instruments while maintaining the same level of care for their patients.
3. Instrument damage caused by shipping the articulator to and from the dental lab is eliminated.
4. Precise alignment of the upper and lower frames is checked at the factory prior to shipping.

## **REMINDERS AND SUGGESTIONS**

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1. When securing interocclusal records to be used in mounting casts and setting the articulator, never allow the teeth to penetrate the recording material (Impression compound, wax, gypsum, impression paste, etc.) too deeply. They should never contact the opposing teeth, the metal face-bow fork, or any firm material that may be used as a carrying tray or handle. Any record showing evidence of penetration should be discarded and remade.
2. The more stable a recording material is, the more it will resist distortion during its later use. Any such material should be in a very soft state, however, during the initial recording procedure.
3. The following technique may be used to secure interocclusal records of partially edentulous patients.

If natural dentition opposes the edentulous space, the partial occlusion rim is built up to nearly touch the opposing teeth. Zinc oxide and eugenol impression paste is then added to the surface of the occlusion rim of sufficient depth to register the tips of the opposing teeth when brought into the desired relationship.

When the opposing spaces are both edentulous, one occlusion rim is built up in the customary manner to near the occlusal plane, while the opposing rim is built to near this plane with small cones of hard wax (or plastic) to indicate the registration in the impression paste.

When absence of teeth makes it necessary to obtain interocclusal records on partial occlusion rims, these records must be made with the supporting soft tissue in as near a static condition as is possible; some combination of these ideas can be planned to accomplish this with acceptable accuracy.

4. With casts of unusually thin vertical dimensions, which would necessitate the use of a great bulk of mounting stone, it is suggested that the mounting plate be built up to near the correct thickness with a mix of mounting stone. This mix should be allowed to set for twenty minutes or longer before the actual mounting procedure is performed.
5. Mounted casts that have been attached to their mounting plates on one 2200 or DB2000 instrument cannot be transferred to another. Should it be necessary to remove the mountings from an articulator before completion of the case, it is advisable to clearly mark the serial number of the instrument on the casts so they may be returned to the correct instrument when desired.
6. A thin film of lubricant (Whip Mix LUBRIPLATE) applied occasionally to the surfaces upon which the condylar elements move will provide a smooth action of these parts.
7. For Model 2240 and 2340 Articulators, make a split cast mounting on the articulator before mounting the first case. This will be used for reference purposes should the articulator ever be dropped or mishandled. If the split cast mounting ever shows any discrepancy, return the articulator to the dealer for factory recalibration at a nominal charge.

## MAINTENANCE

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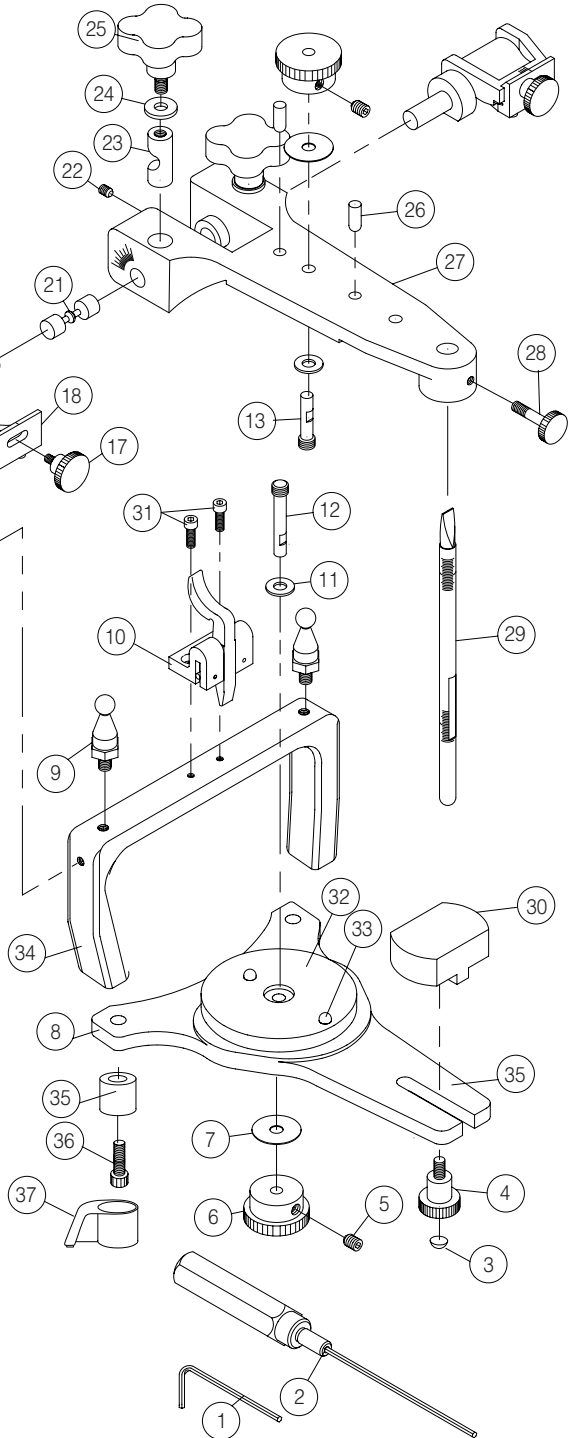
The Whip Mix Articulator is a sturdily constructed instrument that will provide many years of service with reasonable care. Both the upper and lower frames are made of cast aluminum. All aluminum parts are anodized to prevent corrosion or staining. The condyle elements are made of stainless steel and the condylar guide assemblies are made of chrome-plated silicon bronze.

- Avoid getting wax or stone in the screw holes which may damage the threads.
- Tighten screws snugly, but not too tightly. Overtightening the retaining screws can strip the threads.
- It is a good idea to use a carrying case when the articulator is transported. Dropping the articulator may result in bent or broken parts which may affect the articulator's ability to accurately reproduce a patient's mandibular movements.
- Failing to remove excess stone, or not keeping the articulator clean, may result in corrosion of articulator surfaces.
- A thin film of lubricant (Whip Mix LUBRIPLATE) applied to the surfaces upon which the condylar elements move will provide a smooth action of these parts.
- Every couple of months, place a drop or two of hand piece oil inside the #2019 Latch Assembly to insure optimum movement.
- Apply silicone spray to articulator frame to prevent plaster or stone from sticking to surfaces.

# 2000 SERIES ARTICULATOR PARTS LISTS

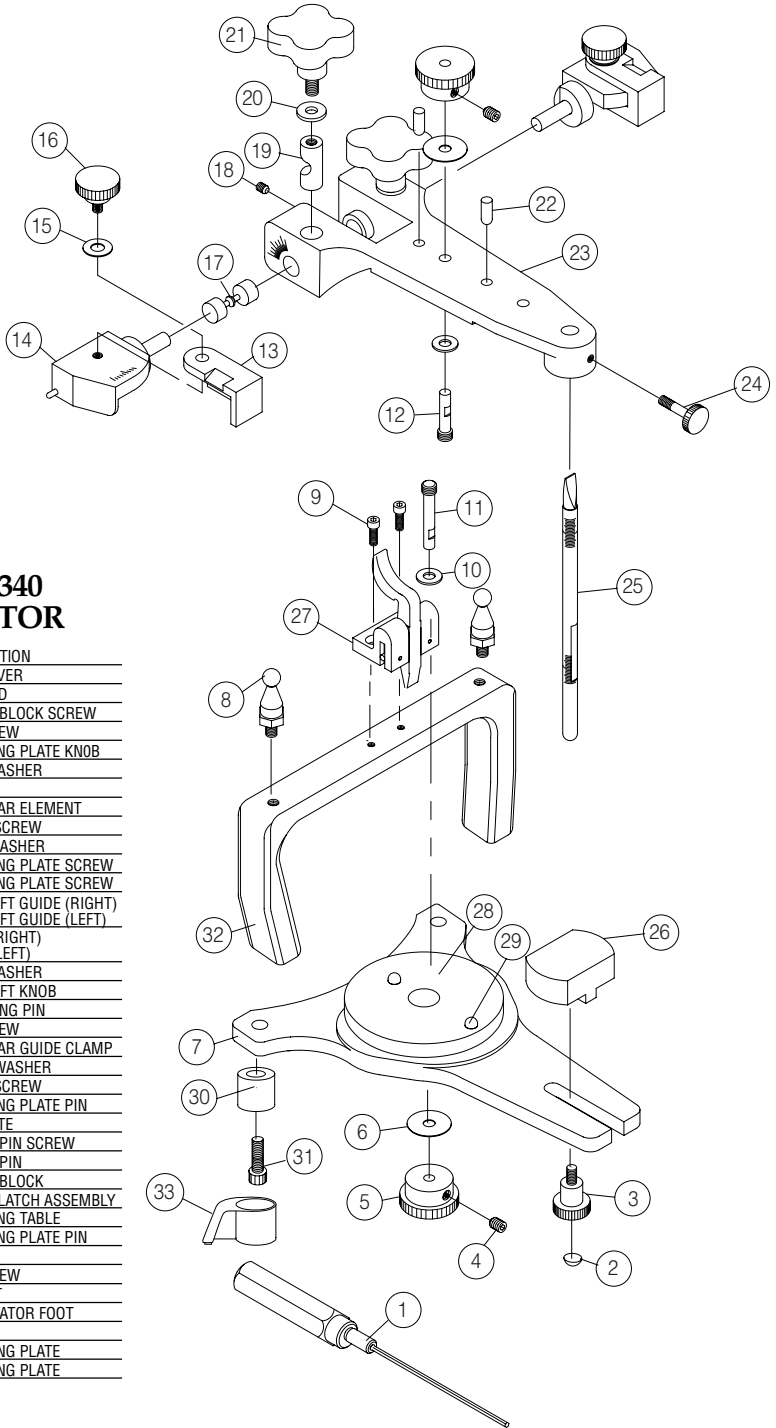
## MODEL 2240 ARTICULATOR

#	PART#	QTY.	DESCRIPTION
1	MA2014	1	HEX WRENCH
2	MA8614	1	HEX DRIVER
3	MA8543	1	FOOT PAD
4	MA8527	1	INCISAL BLOCK SCREW
5	MA8548	2	SET SCREW
6	MA8508	2	MOUNTING PLATE KNOB
7	MA8546	2	FIBER WASHER
8	MA2038	1	BASE
9	MA8504	2	CONDYLAR ELEMENT
10	MA2019	1	LATCH ASSEMBLY
11	MA8545	2	STEEL WASHER
12	MA2242	1	MOUNTING PLATE SCREW
13	MA8507	1	MOUNTING PLATE SCREW
14	MA2030	2	PIN
15	MA2016	2	STRAP
16	MA2026	2	BUTTON HEAD SCREW
17	MA8309	2	SIDE SHIFT CLAMP SCREW
18	MA8306	1	SIDE SHIFT GUIDE (LEFT)
18	MA8305	1	SIDE SHIFT GUIDE (RIGHT)
19	MA8519	2	FACE-BOW MOUNTING PIN
20	MA2204	1	FOSSA (LEFT)
20	MA2203	1	FOSSA (RIGHT)
21	MA2018	1	CENTERING PIN
22	ME4415	1	SET SCREW
23	MA8803	2	CONDYLAR GUIDE CLAMP
24	MA8804	2	CLAMP WASHER
25	MA2041	2	CLAMP SCREW
26	MA8810	2	MOUNTING PLATE PIN
27	MA2001	1	TOP PLATE
28	MA8511	1	INCISAL PIN SCREW
29	MA2201	1	INCISAL PIN
30	MA8526F	1	INCISAL BLOCK
31	MA8513	2	SCREW
32	MA8342	1	MOUNTING TABLE
33	MA8509	1	MOUNTING PLATE PIN
34	MA2037	1	UPRIGHT
35	MA8505	2	LEG
36	MA8506	2	LEG SCREW
37	MA2042	2	ARTICULATOR FOOT
NOT SHOWN			
	MA8580	2	MOUNTING PLATE
	MA8580B	2	MOUNTING PLATE

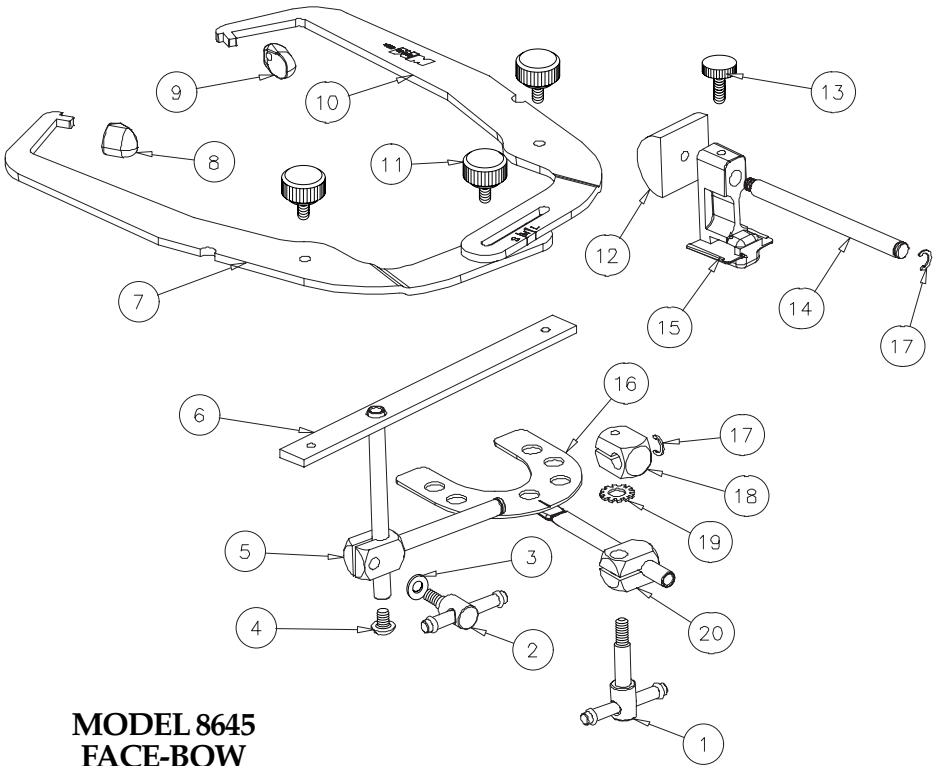


## MODEL 2340 ARTICULATOR

#	PART#	QTY.	DESCRIPTION
1	MA8614	1	HEX DRIVER
2	MA8543	1	FOOT PAD
3	MA8527	1	INCISAL BLOCK SCREW
4	MA8548	2	SET SCREW
5	MA8508	2	MOUNTING PLATE KNOB
6	MA8546	2	FIBER WASHER
7	MA2038	1	BASE
8	MA8504	2	CONDYLAR ELEMENT
9	MA8513	2	CLAMP SCREW
10	MA8545	2	STEEL WASHER
11	MA2242	1	MOUNTING PLATE SCREW
12	MA8507	1	MOUNTING PLATE SCREW
13	MA8523	1	SIDE SHIFT GUIDE (RIGHT)
	MA8524	1	SIDE SHIFT GUIDE (LEFT)
14	MA2321	1	FOSSA (RIGHT)
	MA2322	1	FOSSA (LEFT)
15	MA8547	2	FIBER WASHER
16	MA8520A	2	SIDE SHIFT KNOB
17	MA2018	1	CENTERING PIN
18	ME4415	1	SET SCREW
19	MA8803	2	CONDYLAR GUIDE CLAMP
20	MA8804	2	CLAMP WASHER
21	MA2041	2	CLAMP SCREW
22	MA8810	2	MOUNTING PLATE PIN
23	MA2001	1	TOP PLATE
24	MA8511	1	INCISAL PIN SCREW
25	MA2201	1	INCISAL PIN
26	MA8526F	1	INCISAL BLOCK
27	MA2019	1	SPRING LATCH ASSEMBLY
28	MA8342	1	MOUNTING TABLE
29	MA8509	2	MOUNTING PLATE PIN
30	MA8505	2	LEG
31	MA8506	2	LEG SCREW
32	MA2037	1	UPRIGHT
33	MA2042	2	ARTICULATOR FOOT
			NOT SHOWN
	MA8580	2	MOUNTING PLATE
	MA8580B	2	MOUNTING PLATE



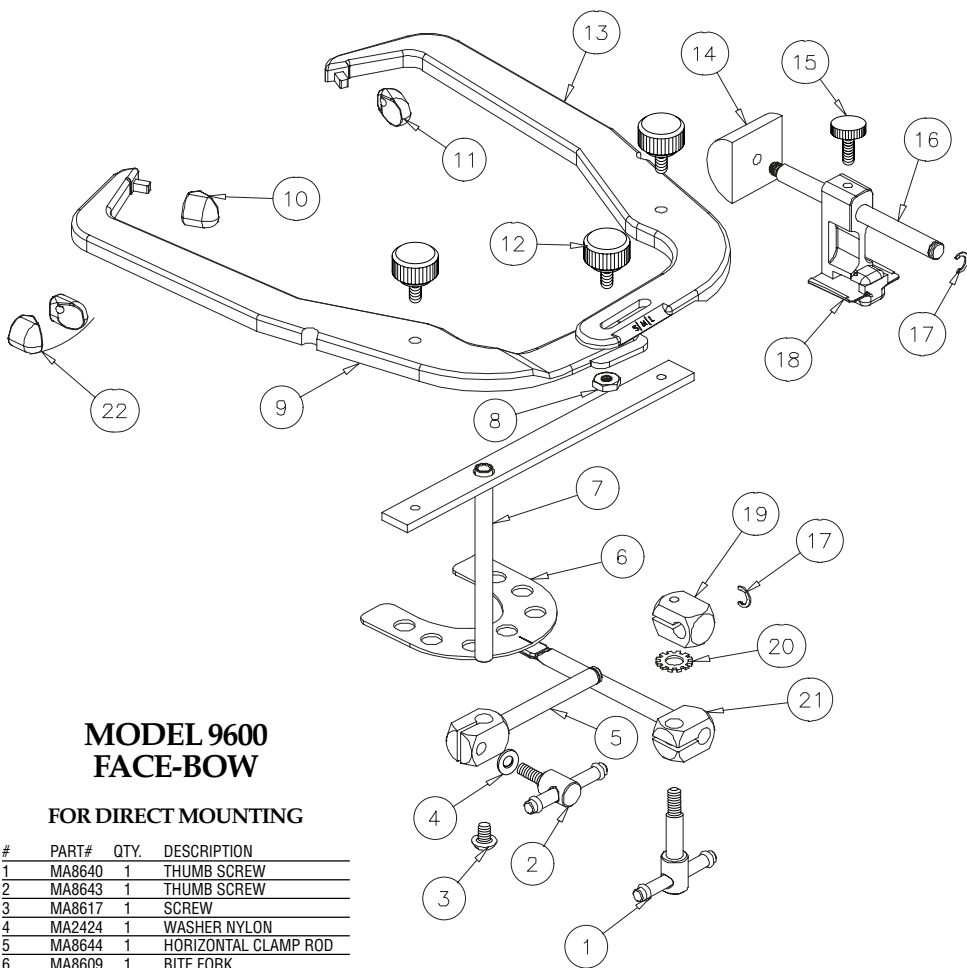
# WHIP MIX FACE-BOW PARTS LISTS



## MODEL 8645 FACE-BOW

### FOR DIRECT MOUNTING

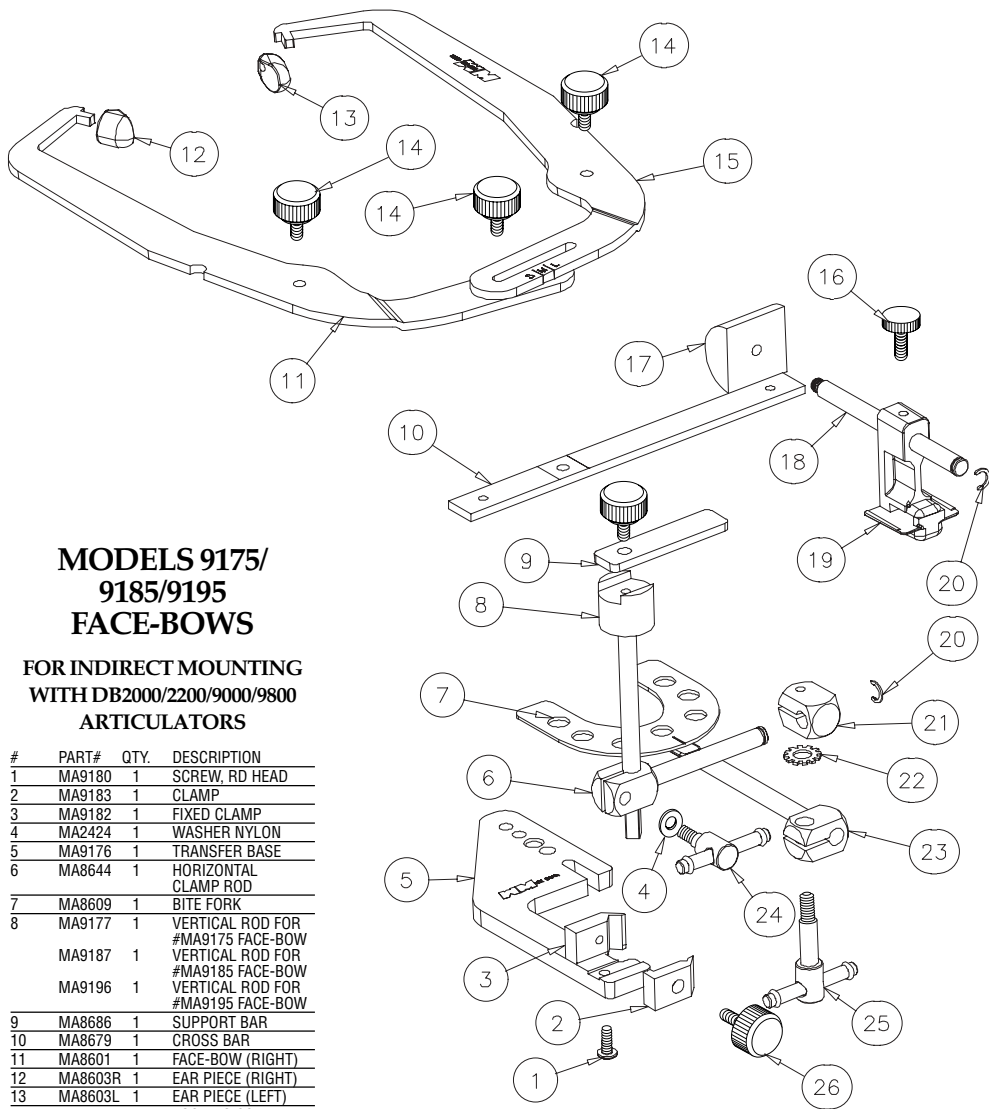
#	PART#	QTY.	DESCRIPTION
1	MA8640	1	THUMB SCREW
2	MA8643	1	THUMB SCREW
3	MA2424	1	WASHER NYLON
4	MA8617	1	SCREW
5	MA8644	1	HORIZONTAL CLAMP ROD
6	MA8608	1	SLIDE BAR ASSEMBLY
7	MA8601	1	FACE-BOW (RIGHT)
8	MA8603R	1	EAR PIECE (RIGHT)
9	MA8603L	1	EAR PIECE (LEFT)
10	MA8602	1	FACE-BOW (LEFT)
11	MA8604	3	LOCKING SCREW
12	MA8607	1	NOSE BLOCK
13	MA8622	1	SCREW FOR UPRIGHT POST
14	MA8606	1	NOSE PIECE SHAFT
15	MA8605	1	UPRIGHT POST
16	MA8609	1	BITE FORK
17	MA8619	2	RETAINING RING
18	MA8641	1	TOGGLE
19	MA8616	1	LOCK WASHER
20	MA8642	1	TOGGLE
NOT SHOWN	MA8549		PKG. OF 6 RUBBER BANDS



## MODEL 9600 FACE-BOW

### FOR DIRECT MOUNTING

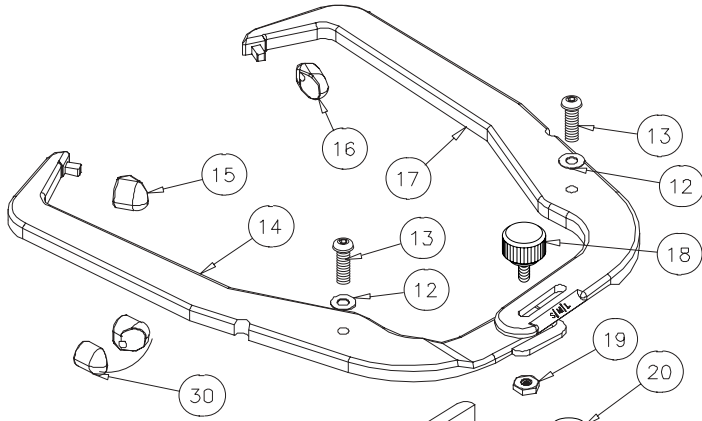
#	PART#	QTY.	DESCRIPTION
1	MA8640	1	THUMB SCREW
2	MA8643	1	THUMB SCREW
3	MA8617	1	SCREW
4	MA2424	1	WASHER NYLON
5	MA8644	1	HORIZONTAL CLAMP ROD
6	MA8609	1	BITE FORK
7	MA8608	1	SLIDE BAR ASSEMBLY
8	MA9605	1	NUT
9	MA9601-1	1	FACE-BOW (RIGHT)
10	MA8603R	1	EAR PIECE (RIGHT)
11	MA8603L	1	EAR PIECE (LEFT)
12	MA9606A	3	SCREW
13	MA9602-1	1	FACE-BOW (LEFT)
14	MA8607	1	NOSE BLOCK
15	MA8622	1	SCREW FOR UPRIGHT POST
16	MA8606	1	NOSE PIECE SHAFT
17	MA8619	2	RETAINING POST
18	MA8605	1	UPRIGHT RING
19	MA8641	1	TOGGLE
20	MA8616	1	LOCK WASHER
21	MA8642	1	TOGGLE
22	MA8603A	1	EAR PIECE SOFT SET
NOT SHOWN	MA8549		PKG. OF 6 RUBBER BANDS



## MODELS 9175/ 9185/9195 FACE-BOWS

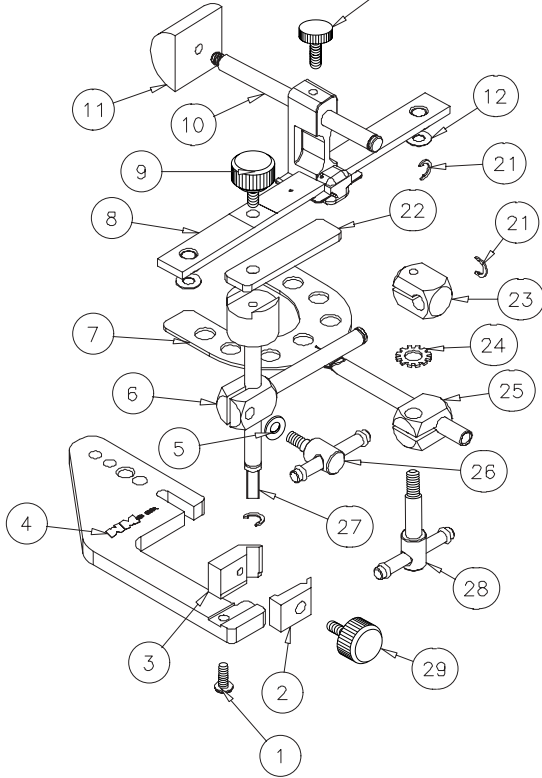
FOR INDIRECT MOUNTING  
WITH DB2000/2200/9000/9800  
ARTICULATORS

#	PART#	QTY.	DESCRIPTION
1	MA9180	1	SCREW, RD HEAD
2	MA9183	1	CLAMP
3	MA9182	1	FIXED CLAMP
4	MA2424	1	WASHER NYLON
5	MA9176	1	TRANSFER BASE
6	MA8644	1	HORIZONTAL CLAMP ROD
7	MA8609	1	BITE FORK
8	MA9177	1	VERTICAL ROD FOR #MA9175 FACE-BOW
	MA9187	1	VERTICAL ROD FOR #MA9185 FACE-BOW
	MA9196	1	VERTICAL ROD FOR #MA9195 FACE-BOW
9	MA8686	1	SUPPORT BAR
10	MA8679	1	CROSS BAR
11	MA8601	1	FACE-BOW (RIGHT)
12	MA8603R	1	EAR PIECE (RIGHT)
13	MA8603L	1	EAR PIECE (LEFT)
14	MA8604	4	LOCKING SCREW
15	MA8602	1	FACE-BOW (LEFT)
16	MA8622	1	SCREW FOR UPRIGHT POST
17	MA8607	1	NOSE BLOCK
18	MA8606	1	NOSE PIECE SHAFT
19	MA8605	1	UPRIGHT POST
20	MA8619	3	RETAINING RING
21	MA8641	1	TOGGLE CLAMP
22	MA8616	1	LOCK WASHER
23	MA8642	1	TOGGLE CLAMP
24	MA8643	1	THUMB SCREW
25	MA8640	1	THUMB SCREW
26	MA9184	1	CLAMP SCREW
NOT SHOWN	MA8549		PKG. OF 6 RUBBER BANDS



## MODELS 9275/ 9285/9295 FACE-BOWS

FOR INDIRECT MOUNTING  
WITH 2240/2340/8340  
ARTICULATORS  
(PLASTIC EAR BOW)



#	PART#	QTY.	DESCRIPTION
1	MA9180	1	SCREW, RD HEAD
2	MA9183	1	CLAMP
3	MA9182	1	FIXED CLAMP
4	MA9176	1	TRANSFER BASE
5	MA2424	1	WASHER NYLON
6	MA8644	1	HORIZONTAL CLAMP ROD
7	MA8609	1	BITE FORK
8	MA9610	1	CROSS BAR ASSEMBLY
9	MA8604	1	LOCKING SCREW
10	MA8606	1	NOSE PIECE SHAFT
11	MA8607	1	NOSE BLOCK
12	MA9608	4	WASHER NYLON
13	MA9607	2	SCREW BUTTON HEAD
14	MA9601-1	1	FACE-BOW (RIGHT)
15	MA8903R	1	EAR PIECE (RIGHT)
16	MA8603L	1	EAR PIECE (LEFT)
17	MA9602-1	1	FACE-BOW (LEFT)
18	MA9606A	1	SCREW
19	MA9605	1	NUT
20	MA8622	1	SCREW FOR UPRIGHT POST
21	MA8619	3	RETAINING RING
22	MA8686	1	SUPPORT BAR
23	MA8641	1	TOGGLE
24	MA8616	1	LOCK WASHER
25	MA8642	1	TOGGLE
26	MA8643	1	THUMB SCREW
27	MA9177	1	VERTICAL ROD FOR #MA9275 FACE-BOW
	MA9187	1	VERTICAL ROD FOR #MA9285 FACE-BOW
	MA9196	1	VERTICAL ROD FOR #MA9295 FACE-BOW
28	MA8640	1	THUMB SCREW
29	MA9184	1	CLAMP SCREW
30	MA8603A	1	EAR PIECE SOFT SET
NOT SHOWN	MA8549		PKG. OF 6 RUBBER BANDS

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