

# CUSTOM-MADE STRAIGHT WIRE

Twin Force Therapy  
Class II treatment



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## Class II treatment

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Class II malocclusion should be considered not only as a sagittal plane abnormality, but also as transverse and vertical plane abnormalities, too.

In sagittal plane, McNamara studies indicated that the majority of Class II malocclusions were characterized by mandibular retrusion and not maxillary protrusion, and therefore the majority of the Class II malocclusion patients treated without extractions improve their profiles.

Apart from the sagittal plane, in the majority of the cases a transverse plane is also affected by maxillary contraction. In cases treated with mandibular advancement the casts must be placed in Class I in order to evaluate the transverse molar occlusion in advanced position of the mandible. If posterior cross bite is observed, an upper expansion must be carried out.

In many Class II malocclusion cases, the vertical plane is also affected, and patients present a vertical pattern with mandibular clock-wise rotation that which worsens skeletal Class II malocclusion and profile.

In short, many skeletal Class II patients benefit from a treatment including mandibular advancement, maxillary expansion and vertical control.

### Class II Treatment Scheme using CSW Technique

Mixed dentition treatment	
	Treatment
Upper protrusion patient	Active C plate. Duyzings appliance with a shield
Mesofacial or braquifacial patient with mandibular retrusion	Twin Block
Dolychofacial patient with mandibular retrusion	Headgear with high pull-up
Treatment in permanent dentition	
	Treatment
Mesofacial or dolychofacial patient with upper protrusion	Extractions and anchorage using microimplants
Braquifacial patient with upper protrusion	Distalization using Pendulum and microimplants
Mesofacial, braquifacial or moderate dolychofacial patient with mandibular retrusion	Mandibular advancement using Twin Force
Treatment using surgery	
	Treatment
Patient with maxillary normoposition and mandibular retrusion	Sagittal mandibular advancement osteotomy
Patient with mandibular and maxillary retrusion	Lefort I for maxillary advance
	Lefort I for maxillary advance and impactation
	Segmented Lefort I for maxillary advance and expansion
	Sagittal mandibular advancement osteotomy
	Sagittal mandibular advancement osteotomy and counter-clock wise rotation
	Possible mentoplasty

## Description of the appliance: Twin Force® Bite Corrector (TFBC) Double-Lock

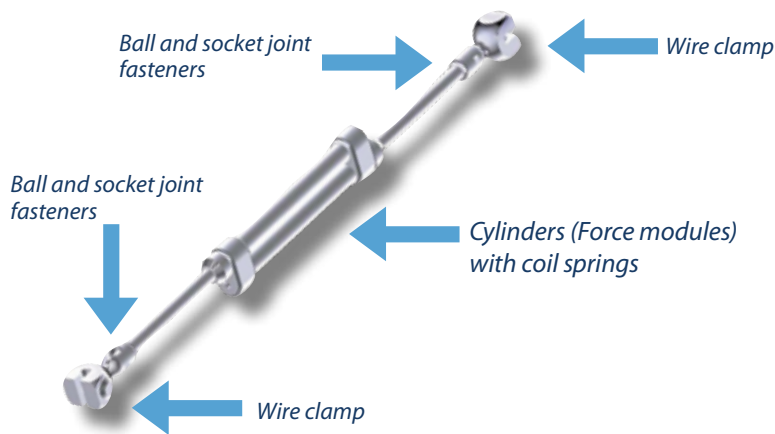
*Twin Force* BiteCorrector Double-Lock is an intraoral and intermaxillary appliance and it is used in Class II malocclusion treatment. It requires a minimal cooperation from the patient.

The insertion and removal of the appliance is easy and rapid and there is no necessity for laboratory fabrication. It is fixed to SS .0172 x .025" arch for the .018" slot and to SS .018" x .025" arch for the .022" slot by simply adjusting and securing the screw with a *Twin Force* wrench. Its NiTi components offer a very safe adjustment system in the arch.

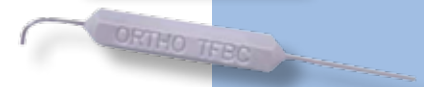
Ball and socket joint fasteners situated at its ends (next to the wire clamps) allow a wide range of jaw motion including the lateral jaw movements, which increase the comfort of the patient.

The plunger/tube telescopic assemblies on each side contain NiTi coil springs that deliver constant and light forces to position the mandible.

Many doctors do not believe in the mandibular moving forward. Mostly distal driving the upper arch.



**Accessories:**  
spare Allen screws and  
Twin Force wrench



### Determination of the appropriate size of the Twin Force

A *Twin Force* Bite Corrector Lock is fixed directly to the arch using its wire clamps.

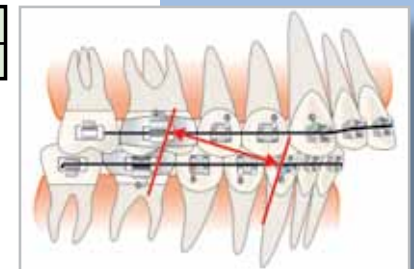
After aligning and levelling, and with a patient in habitual maximal occlusion, measure from the mesial edge of the upper 1<sup>st</sup> molar tube to the distal edge of the lower cuspid bracket.

If the distance is less than 27mm – the *Twin Force* Small is used.

If the distance is equal or greater than 27mm - the *Twin Force* Standard is used.

### Advantages:

- Improves the profile of the patient
- A minimal cooperation of the patient is required
- It produces continuous and light forces due to its NiTi coil springs
- It allows lateral jaw movement, which is more comfortable for the patient
- Resilient
- No laboratory work is required (time and costs reduction)  
It is inserted directly at the clinic using a simple procedure
- It is easy to remove it at the clinic in order to check the position of the mandible and insert it again, if necessary
- The patient can remove it in case of emergency
- It can be used both in extraction and non-extraction cases



1



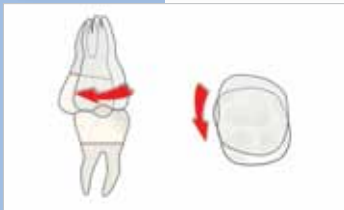
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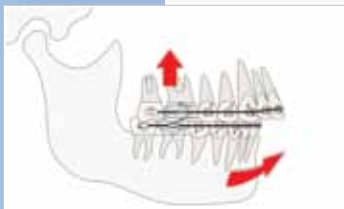
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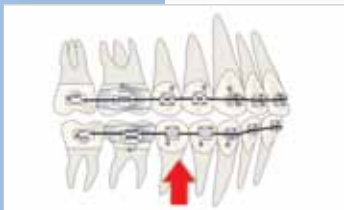
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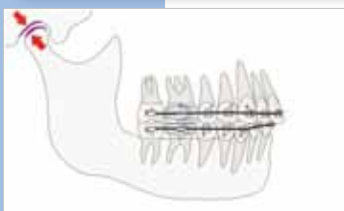
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7



## 7 mechanisms of Twin Force action:

### Growing patient or with finished growth:

1. Complete maxillary distalization from 1mm to 1.5mm – Overjet and molar class correction.
2. Complete mandible protrusion from 1mm to 1.5mm – Overjet and molar class correction.
3. Remodelling of the glenoid cavity and condyle (approx. 1mm) – Overjet and molar class correction.
4. Molar distal rotation – Molar class correction.
5. Intrusion of the upper molars and counter clockwise rotation of the mandible – Overjet, molar class and profile correction (in anterior open bite cases).
6. Lower molars extrusion to fix the jaw position – Overjet and molar class correction (anterior deep bite cases)

\*\*\* In adult patients a 3mm to 5mm profile reduction can be expected due to orthodontic effects.

### Growing patient:

7. Condyle and glenoid cavity growth.

### Indications:

1. Skeletal Class II malocclusion with mandibular retrognathia
2. Facial type:
  - a. Braquifacial
  - b. Mesofacial
  - c. Moderate dolychofacial
3. Permanent dentition
4. Growing patient – orthopaedic effect
5. Non-growing patient – orthodontic effect

### Limitations:

1. Skeletal Class II malocclusion with maxillary protrusion
2. Severe or medium dolychofacial patient

Class II div. 2 malocclusion patients should be treated to Class II div. 1 malocclusion patients in order to be able to carry out mandibular advancement

### Prevention of side effects:

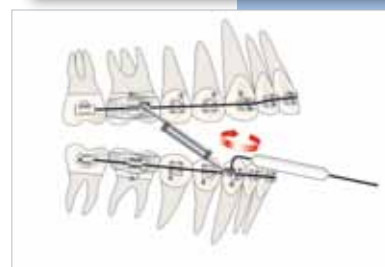
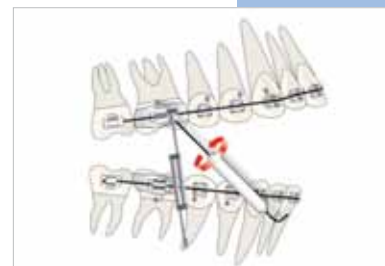
1. To prevent solely the upper molars distalization – upper distal closure using ligated hook and ligated omega
2. To prevent proinclination of lower incisors – lower distal closure using ligated hook and omega, plus lingual splinting from lower canine to lower canine
3. To avoid excessive distal rotation of upper molars – transpalatal bar

### Insertion and removal of the appliance

Place archwire clamp of the *Twin Force* at 1 mm mesial to the upper first molar tube and tighten the adjustable screw using a *Twin Force* wrench. Repeat the procedure on the opposite side.

When the left and right *Twin Force* Bite Correctors are fixed to upper arch, place the other archwire clamp 1 mm distal to the canine bracket on the lower arch and tighten adjustable screw with the *Twin Force* wrench.

Check if the appliance is secure on both ends, and ask the patient to make mandibular movements in all directions.



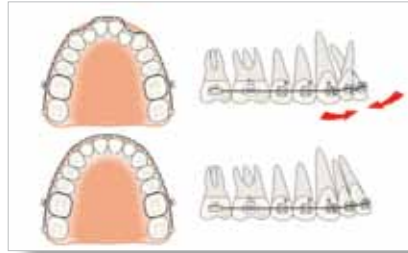
### Instructions for the patient:

1. Brush the *Twin Force* Bite Corrector at the same time when brushing teeth
2. In case of de-bonding of a bracket or a band, or if *Twin Force* moves from its position, try to place it back using the wrench, or remove also the opposite end, place Class II elastics and contact the orthodontist as soon as possible
3. Try to limit the excessive mouth opening movements, such as yawning
4. While adjusting the *Twin Force*, do not completely remove the screws from the wire clamps

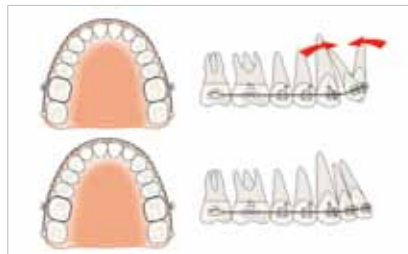
## Biomechanical sequence

Before inserting the *Twin Force* appliance, dental occlusion should be brought into the position of mandibular advancement:

1. Diagnosis. Correct diagnosis and *Twin Force* use checking (Indications; Limitations page 5)
2. *Elite® Opti-MiM® Mini-Twin®* brackets bonding with Roth prescription. In CSW technique a .018" slot is used, but .022" slot can also be used. In case you use the .022" slot, arch size should be adapted to it. *Carriere LX®* Self-Ligating Brackets can be used, too.
3. Align, level and correct rotations – ALR - .016" NiTi (Super Elastic *NITANIUM®*). Depending on the crowding level, a thermal .016" NiTi arch (*BIO-KINETIX®*) or .016" *Black Ti™* or .014" NiTi (Super Elastic *NITANIUM*) can be used.



4. Torque correction - .016" x .022" NiTi (Super Elastic *NITANIUM*) or thermal .016" x .022" NiTi (*BIO-KINETIX*) or .016" x .022" *Black Ti*.



5. Level the curve of Spee - .016" x .022" NiTi (Super Elastic *NITANIUM* RCS) or thermal NiTi (*Bio-Kinetix* RCS) arch with reverse curve



6. Transverse correction with plaster casts in Class I. Check it with the model casts positioned in Class I, expansion indication.

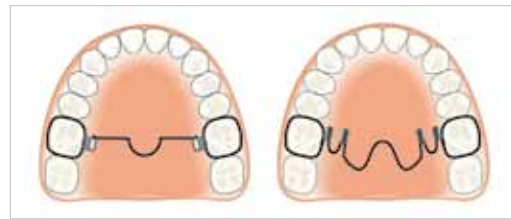


Transpalatal Bar

Nitium Palatal Expander

Quad Helix

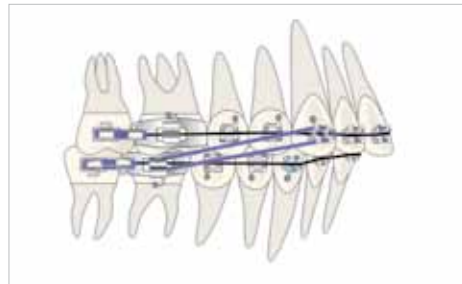
7. Correct rotations in upper molars.



Tranapalatal Bar

Nitanium molar rotation

8. .017" x .025" Stainless Steel arches with hooks and omegas ligated to molar band.



9. Indicate the use of Class II elastics 3/6" – 2.5 oz. (TOUCAN) or 3/6" – 4.5 oz. (ZEBRA) a month before insertion of *Twin Force*, so the patient get used to advanced mandible position.

10. *Twin Force*



Check list of the *Twin Force* use in cases of deep bite (see page 8).  
 Check list of the *Twin Force* use in cases of open bite (see page 9).

### How long must I wear *Twin Force*?

It is recommended to use *Twin Force* during 1 month per each millimeter of the planned correction of overjet. As far as only orthodontics is concerned, it is used during 3 to 4 months.

### Checking the effect of *Twin Force*


Remove the *Twin Force* and try to retract the mandible. If the mandible moves back, put the *Twin Force* back. If the mandible does not move, take the *Twin force* out and put the Class II elastics 3/6" – 2.5 oz. (TOUCAN) or 3/6" – 4.5 oz. (ZEBRA).

### Case Finishing

Finish intercuspation and midline correction using intermaxillary elastics.

**Twin Force in Class II malocclusion cases with anterior deep bite. Checklist.**


1  Elite Opti-MIM Mini-Twin or Carriere LX Roth .018" x .025" brackets


2  Stainless Steel arches:  
with .018" slot and .017" x .025" arch  
with .022" slot and .018" x .025" arch  
Minimum wire size

3  Convertible molar tube

4  Crimpable hook or tube with hook


5  Lingual sheaths

6  Transpalatal bar (Palatal Bar) adapted to palatine vault

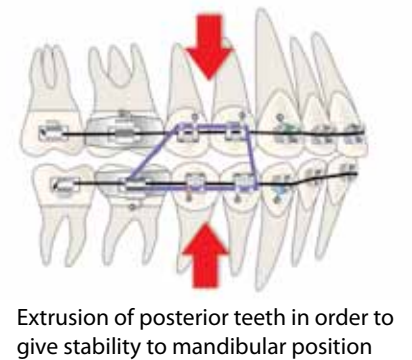
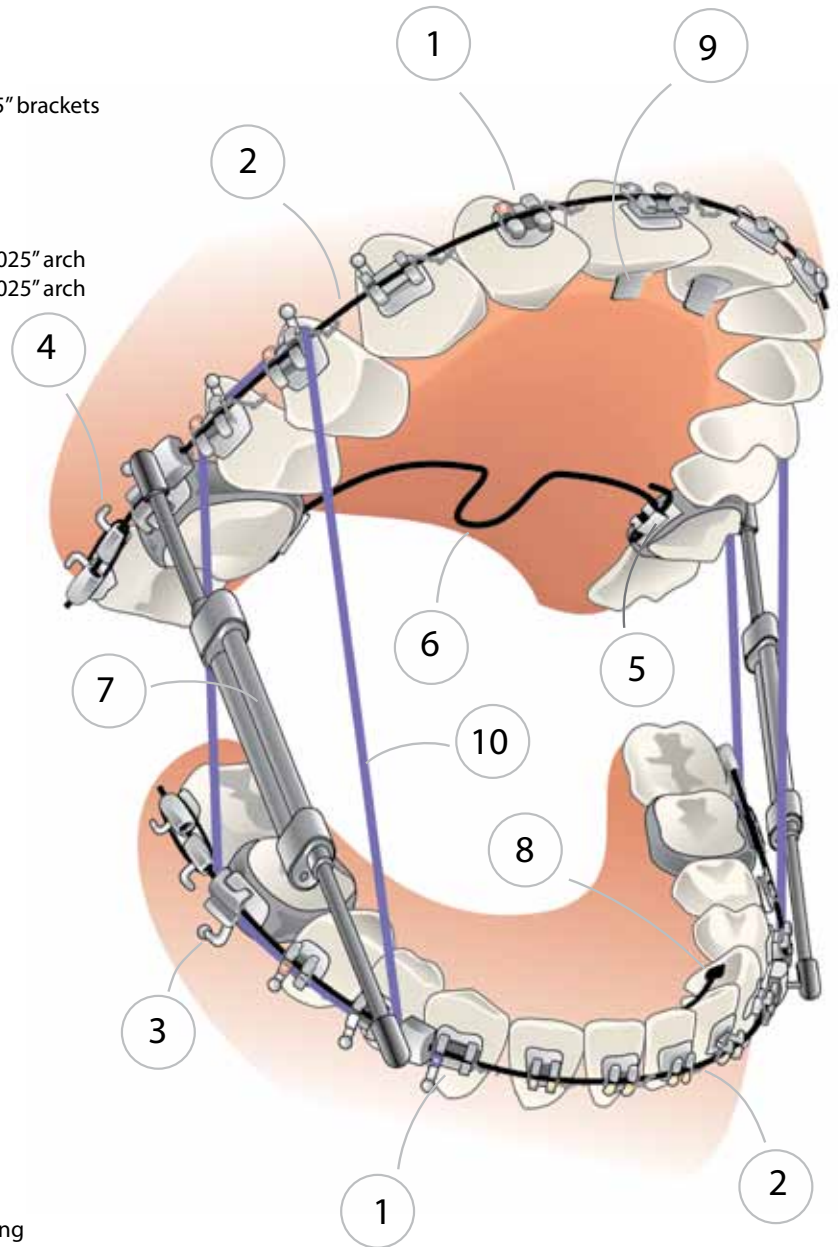
7  Twin Force

8  Lower lingual splinting

9  Opti-MIM Bite Guide

10  Vertical elastics

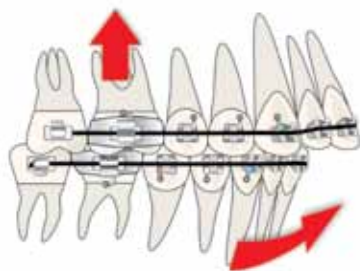
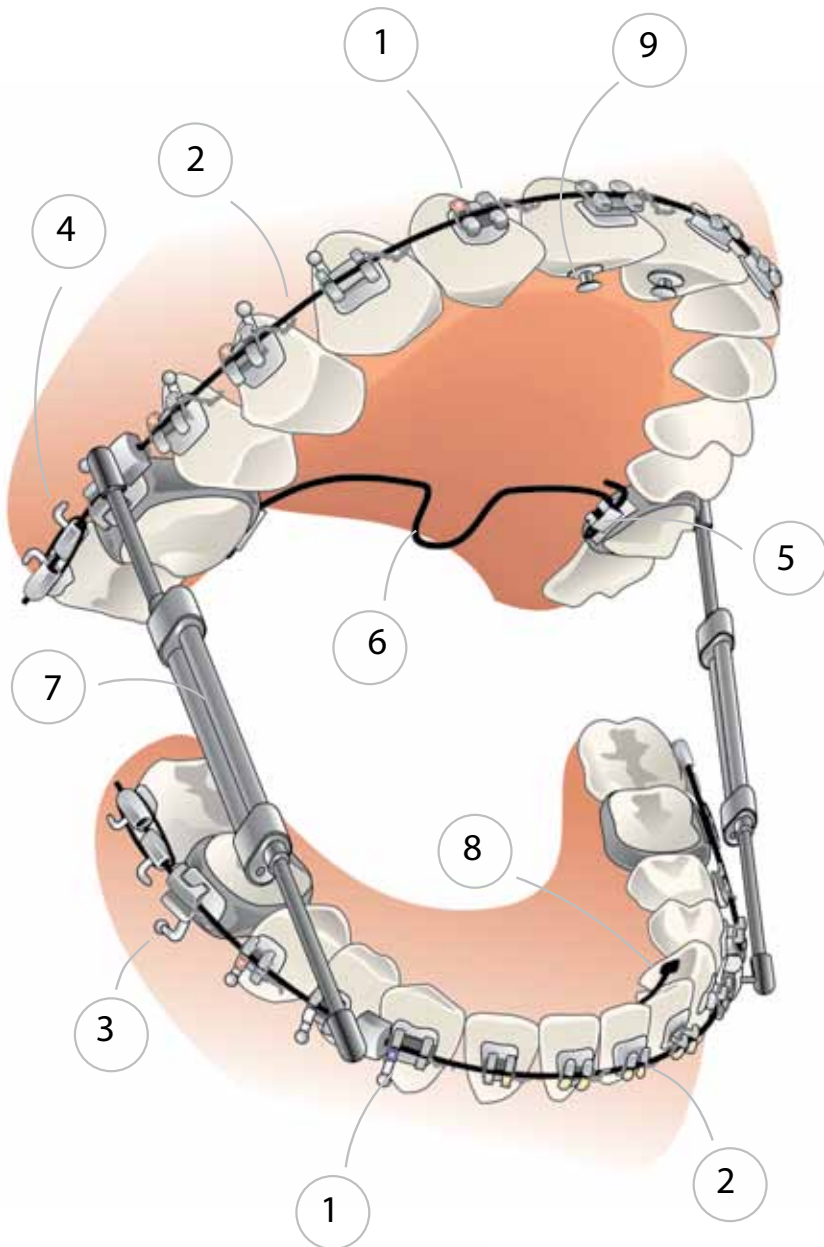
**1/8"** Giraffe 18" (45.7 cm) Light 2.5 oz.  
Chimpanzee 18" (45.7 cm) Medium 4.5 oz.  
**3/16"** Toucan 21" (53.3 cm) Light 2.5 oz.  
Zebra 21" (53.3 cm) Medium 4.5 oz.



Extrusion of posterior teeth in order to give stability to mandibular position

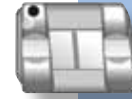


# Twin Force in Class II malocclusion cases with anterior open bite. Checklist.



Intrusion of upper molars to initiate counter clockwise rotation of mandible.

Elite Opti-MIM Mini-Twin rriere LX Roth .018" x .025" brackets



Stainless Steel arches: with .018" slot and .017" x .025" arch with .022" slot and .018" x .025" arch



Convertible molar tube



Crimpable hook or tube with hook



Lingual sheaths



Transpalatal bar (Palatal Bar) separated from palatine vault



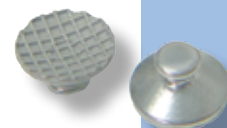
Twin Force



Lower lingual splinting



Opti-MIM Direct Bonding Button for tongue reeducation

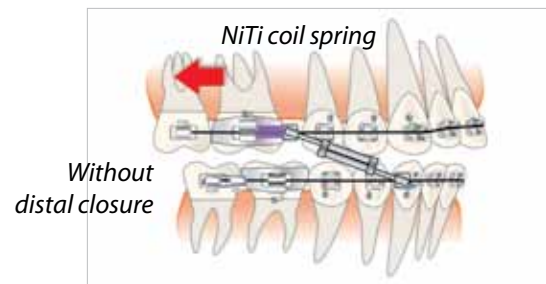


## Biomechanical sequence using .018" or .022" slots

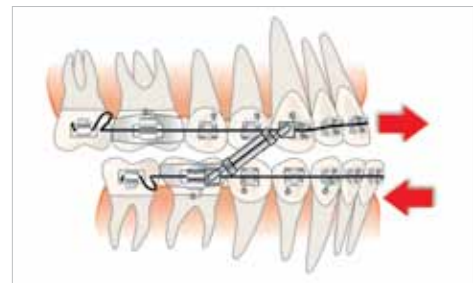
Brackets	.018"	.022"
Aligning and levelling	.016" NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX) Black Ti	.016" x .018" NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX) Black Ti
Torque establishing	.016" x .022" NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX) Black Ti	.017" x .025" NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX) Black Ti
Curve of Spee leveling	.016" x .022" RCS NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX)	.017" x .025" RCS NiTi Super Elastic NITANIUM Thermal NiTi (BIO-KINETIX)
Transverse correction	Transpalatal bar Titanium Palatal Expander <sup>®2</sup> Quad Helix	
Molar rotation	Transpalatal bar Titanium Palatal Rotator	
Twin Force arches and finishing	.017" x .025" Stainless Steel	.018" x .025" Stainless Steel

### Other uses:

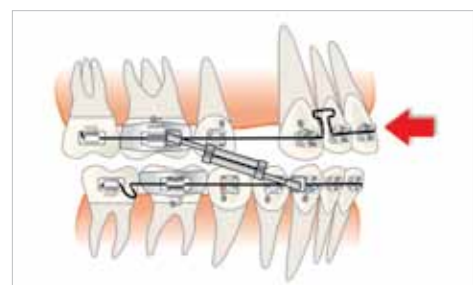
Distalization of upper molars



Inverse use in Class III malocclusion treatment



Anchorage reinforcement in extraction cases



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<http://www.centroladent.com>

<http://www.orthoorganizers.com>



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