Dr. William Clark has 50 years experience in orthodontic practice and continues to develop innovative appliances in orthodontic and orthopaedic techniques. He developed Twin Blocks in 1977 and is the author of “Twin Block Functional Therapy: Applications in Dentofacial Orthopaedics”, published by Mosby (1995 and, 2002).

Dr. Clark is the first recipient of an award of distinction from the British Orthodontic Society for an outstanding contribution to the specialty of orthodontics. In 2008, he received an award from the International Functional Association for outstanding personal international service to functionalism and orthodontics. In 2010, he completed a thesis on “New Horizons in Orthodontics & Dentofacial Orthopaedics” for a D.D.Sc. Degree from the University of Dundee.
The case studies found on the following pages were performed by Dr. Clark. They illustrate the potential of preformed invisible lingual appliances for sagittal and transverse arch development. Light, biological forces generated by enclosed nickel titanium springs achieve an excellent response from patients of all ages, from interceptive treatment in mixed dentition to adult therapy.

*TransForce*² Lingual Appliances integrate with all types of conventional fixed appliances at any stage to simplify treatment. This approach is affordable and efficient, and typically reduces the time required in a fixed appliance by 50%. This is a very important factor, especially in adult therapy. In many cases alignment and arch form can be improved to a stage where invisible finishing appliances may be used to detail the occlusion.

*TransForce*² Appliances are constructed to the highest engineering standards by *Ortho Orgnizers*®, advancing the future of orthodontics. They do not cover the palate and are comfortable to wear, so patients of all ages appreciate the advantages of *TransForce*² Appliances.

### Ease of Insertion
Placement blades are designed to insert easily into molar bands with standard .036" x .072" lingual sheaths

### Aesthetic Appearance
Lingual placement for a virtually invisible appearance

### Size Identification
Color-coded for easy identification

### Optimum Patient Comfort
*Nitinum*® Coil Springs enclosed in expansion modules provide slow continuous force

### No Laboratory Work Required
Select and order appliance by desired finish size

### Less Inventory
Universal sizes for upper or lower arches – no need to carry separate inventory

### Zero Patient Compliance
Appliance allows for up to 2 mm expansion every 6-8 weeks with minimum maintenance
Rapid improvement by maxillary arch development with a Transverse Expander corrected the crossbite and improved arch form in this case. After five months of treatment the Transverse Expander was kept in place for an additional three months. The final photographs show the occlusion and arch form four years later following 10 months of additional treatment with an upper fixed appliance.
In this case, the patient was unwilling to have fixed appliances, but was happy to wear lingual appliances. Upper Transverse and lower Sagittal Appliances were used and as treatment progressed the patient agreed to have a lower fixed appliance fitted. This severe malocclusion was not treated to an ideal result, but showed a marked improvement with simple treatment followed by the use of retainers.
This adolescent patient was treated entirely by TransForce² Sagittal Appliances, followed by invisible retainers. Lingually inclined upper and lower incisors responded well to treatment with lingual TransForce² Appliances to correct the arch form. This approach would apply equally to adult treatment of this type of malocclusion, followed by fixed lingual retainers.
In this case, rapid improvement by maxillary arch development with a Transverse Expander allowed efficient progression to fixed appliances over a period of five months with appointments at 10 week intervals. Final photographs were taken three years later.
This young adult with severe maxillary contraction was treated with TransForce² Appliances for lingual arch development. She enjoyed having invisible appliances for 11 months while her smile noticeably improved before proceeding with aesthetic fixed appliances to complete treatment.
The lingual approach presents minimum discomfort and inconvenience for adults. Invisible lingual appliances simplify treatment using biocompatible forces for gentle arch development. Typically the time in fixed appliances is reduced by 50%. In this case, treatment was completed in 19 months.
This eight year old girl presented with a Class III malocclusion with severe upper labial crowding treated in mixed dentition with upper and lower TransForce² Transverse Expansion Appliances. Active treatment was completed in eight months, and the TransForce² Appliances remained in place for three months to retain.
After TransForce² appliance retention, there was a period of observation while waiting for eruption of permanent teeth. This was followed by a short period of treatment with fixed appliances at age 11 to detail the occlusion. Interceptive treatment in mixed dentition to resolve anterior crowding simplified the finishing stage.
This demonstrates interceptive treatment for a Class III malocclusion in mixed dentition with an upper Sagittal TransForce² Appliance. The lingual occlusion was corrected after three months, and the appliance was used as a retainer for an additional six months.
No further treatment was required and the final photographs show the occlusion and arch form three years after eruption of permanent teeth. The profile and facial balance has improved after a short period of interceptive treatment with a Sagittal TransForce² Appliance.
A Class II Division 2 malocclusion with severe maxillary contraction was treated with Transverse TransForce² Appliances to accommodate the unerupted upper lateral incisor. The incisor erupted after 12 months and the appliances acted as retainers for an additional six months.
After eruption of permanent teeth TransForce® Sagittal Appliances correct slight residual crowding, followed by a lower fixed appliance for six months. No upper fixed appliance was required. Interceptive treatment with invisible lingual appliances simplified correction of this malocclusion.
TransForce² Lingual Appliances can be combined with fixed appliances to enhance arch development in adult therapy. This may be the first step in treatment to make space to align a crowded labial segment before placing brackets. The patient benefits by wearing invisible appliances in the first phase of treatment, while also reducing the time spent in full-fixed appliances.
The Carriere Self Ligating Bracket System is a highly efficient mechanism to detail the occlusion and deliver precision at the end of treatment. The brackets have a secure locking mechanism and are low profile, providing improved patient comfort, and delivering light, controlled forces throughout treatment. Treatment was completed in two years followed by fixed lingual retainers.
**TransForce² Transverse Arch Developer**

The Transverse Appliance has an expansion module to increase the inter-canine width (expands at the cuspsids) and may be used in the upper or lower arch when expansion is required to accommodate crowding in the labial segments, or to correct arch width in constricted arches.

<table>
<thead>
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<th>CATALOG NUMBER</th>
<th>COLOR-CODE</th>
<th>TRANSVERSE SIZE: INTER-CANINE FULLY EXTENDED</th>
<th>TRANSVERSE SIZE: INTER-CANINE FULLY COMPRESSED</th>
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**Transverse Arch Development Planner** 424-500T

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**TransForce² Sagittal Arch Developer**

The Sagittal Appliance is specifically designed for anterior arch development (creates space by advancing the 3x3 labially) and is often indicated for simultaneous use in both arches. The appliance operates on the slide principle and may be used unilaterally or bilaterally to extend arch length.

<table>
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<tr>
<th>CATALOG NUMBER</th>
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<th>SAGITTAL SIZE: ANTERIOR-POSTERIOR FULLY EXPANDED</th>
<th>SAGITTAL SIZE: ANTERIOR-POSTERIOR FULLY COMPRESSED</th>
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**Sagittal Arch Development Planner** 424-700T
TransForce Orthodontics:
A new approach to invisible orthodontics in the hands of the Orthodontist

To purchase this new e-book visit <www.transforceorthodontics.com>

The TransForce Orthodontics Palatal Transverse Appliance has an expansion module to increase the inter-canine width (expands at the cuspids) and may be used in the upper or lower arch when expansion is required to accommodate crowding in the labial segments, or to correct arch width in constricted arches.

The TransForce Orthodontics Sagittal Appliance is specifically designed for anterior arch development (creates space by advancing the 3×3 labially) and is often indicated for simultaneous use in both arches. The appliance operates on the slide principle and may be used unilaterally or bilaterally to extend arch length.

Contact Dr William Clark

Thank you for your interest in my web site, my appliances and books. I am happy to answer any questions about my inventions and books, contact me by filling the form on this page.

Frequently Asked Question:
Where can I find a TransForce appliance?

Response:
You may take my free TransForce Brochure on this website. It is designed to illustrate the benefits of TransForce treatment. Orders can be placed through info@OrthoOrganizers.com. Get in touch with us by filling in the form on this page and we can help advise you.

Purchase e-book for $120 during the AAO Congress in Washington
TransForce Orthodontics:
A new approach to invisible orthodontics in the hands of the Orthodontist
To purchase this new e-book visit <www.transforceorthodontics.com>

Purchase e-book for $120 during the AAO Congress in Washington
Clark Twin Blocks

Preformed Clark Twin Blocks®:
One size fits all models

Clark Twin Blocks® with Palatal & Lingual Wires can be assembled in the laboratory for fitting in 20 minutes compared to spending half a day making customised removable Twin Blocks.

The new design is “Patient Friendly” as the palatal and lingual wires do not cover the palate and this allows the tongue freedom to adapt into the palate as treatment progresses.

The breakthrough is based on simple appliances with preformed occlusal blocks and preformed lingual wires that can be placed on models in a trial set up and adapted to the patient’s construction bite. The appliances are then filled with materials suitable for removable appliances or for temporary or permanent fixation to the teeth. An indirect technique eliminates errors of positioning of the blocks in the mouth. Visit www.twinblocks.com for further information.

Instructions for Clark Twin Blocks®

1. Impressions & Construction Bite: Impressions of the patient’s dentition are taken with an intra-oral construction bite to register the mandibular advancement required to correct the malocclusion. The models are mounted on an articulator
   
2. Preformed lingual wires: Place the wires on the models and adapt the width to fit.
   
3. The Upper Wire: Designed to engage mesial to the second premolars and pass distally over the first molars.
   
4. The Lower Wire: Fits mesial to the first premolar and passes distally over the second premolar
   
5. Preformed Blocks: There are 4 preformed occlusal blocks in the kit, one for each quadrant
   - Place the upper blocks on the model over the wires to fit mesial to the second premolar and extending distally over the molars.
   - Place the lower blocks over the premolars with the buccal extension over the canines.
   - The lower block is designed to move mesio-distally to occlude with the upper block and adapt to the construction bite
   
6. Indirect Technique: Customise the Twin Blocks on models. Adapt the inclined planes to 70° or 45° as required, Trim to gingival margins prior to transferring the appliances to the mouth.
Removable Twin Blocks

- Apply a primer plasticizer before filling the blocks with clear material and adapt on the models as removable appliances. Clear acrylic may be light cured to ensure complete polymerization and removal of free monomer.
- **Temporary Fixation of Twin Blocks: Class 1a materials** are suitable for temporary fixation for up to 1 month to adapt to full time wear to resolve problems of patient compliance.
- **Class 1a Materials:**
  - *Isofolan ®*: Clear Spacer Foils (120 x 0.1 mm) are pressure molded on models to separate plaster from resin. They do not bond to self curing resin.
  - *Clear Blokker ® or Durasplint ®*: Class 1a material from Scheu Dental may be used to fill occlusal blocks to customise on models for temporary fixation for up to 30 day
  - **Triad ® provisional materials** in a range of dental shades.

Fixed Twin Blocks

**Class 2a materials** meet the international regulations for fixation in the mouth for an extended period of treatment. **Orthocryl ® CV Clear**, supplied by Dentaurum is biocompatible and non toxic and may be used to customise occlusal blocks on models prior to fixing in the mouth.

**Dental Fixatives** can be used to fix the blocks to the teeth. For example glass ionomer cements may be used for temporary fixation.

A range of composite materials may be used to bond the customised blocks to the teeth, for example **Reliance Excel ®** is commonly used to fit the bonded Herbst appliance.

**Clark Twin Blocks** do not cover the anterior teeth. This is an important advantage as fixed appliances can be fitted on the anterior teeth and molar tubes may be placed on the buccal surface of the upper blocks. In the lower arch bands may be placed on lower first molars with a utility arch to control the lower incisors.