NEW HORIZONS IN ORTHODONTICS

TransForce®² ARCH DEVELOPER APPLIANCES
Clinical Cases
**TRANSFORCE² ARCH DEVELOPER APPLIANCES**

*TransForce*² Transverse and Sagittal Arch Developing Appliances are manufactured by *Ortho Organizers* as a series of preadjusted fixed appliances that are designed to correct contracted dental arches. The appliances deliver smooth, continuous force with a pre-activated expansion module that incorporates a *Nitianium* Coil Spring (generating approximately 200 grams of gentle biocompatible force), which is enclosed in a tube.

Each of these appliances can be used in mixed dentition, regardless of the patients’ class of malocclusion. Both require zero patient compliance, are mounted lingually for an inconspicuous appearance, and can be easily adjusted per patient. Designed for ease of use, the *TransForce² Arch Developer Appliances* are preprogrammed to allow appliances to be placed without laboratory work. Both the Transverse and Sagittal styles may be placed using first molar bands with standard .036 x .072 lingual sheaths.

### TRANFORCE² TRANSVERSE ARCH DEVELOPER

The 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.

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>COLOR-CODE</th>
<th>TRANSVERSE SIZE</th>
<th>MAXIMUM AMOUNT OF INTER-CANINE EXPANSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>424-500</td>
<td></td>
<td></td>
<td>FULLY COMPRESSED</td>
</tr>
<tr>
<td>424-500T</td>
<td></td>
<td></td>
<td>INTER-CANINE WIDTH</td>
</tr>
<tr>
<td>424-526</td>
<td>Red</td>
<td>18 mm 27 mm</td>
<td>26 mm 36 mm</td>
</tr>
<tr>
<td>424-528</td>
<td>Green</td>
<td>20 mm 30 mm</td>
<td>28 mm 38 mm</td>
</tr>
<tr>
<td>424-530</td>
<td>Purple</td>
<td>22 mm 32 mm</td>
<td>30 mm 40 mm</td>
</tr>
<tr>
<td>424-532</td>
<td>Pink</td>
<td>24 mm 35 mm</td>
<td>32 mm 43 mm</td>
</tr>
</tbody>
</table>

### TRANFORCE² 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>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>COLOR-CODE</th>
<th>SAGITTAL SIZE</th>
<th>MAXIMUM AMOUNT ANTERIOR-PERIOR EXPANSION</th>
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<tbody>
<tr>
<td>424-700</td>
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<td></td>
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<tr>
<td>424-700T</td>
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<td></td>
<td>ANTERIOR POSTERIOR</td>
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<td>424-730</td>
<td>Purple</td>
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<td>30 mm 31 mm</td>
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<td>424-732</td>
<td>Pink</td>
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<tr>
<td>424-734</td>
<td>Blue</td>
<td>30 mm 30 mm</td>
<td>34 mm 32 mm</td>
</tr>
<tr>
<td>424-736</td>
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<td>36 mm 36 mm</td>
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<tr>
<td>424-738</td>
<td>Yellow</td>
<td>32 mm 35 mm</td>
<td>38 mm 37 mm</td>
</tr>
<tr>
<td>424-740</td>
<td>White</td>
<td>34 mm 35 mm</td>
<td>40 mm 38 mm</td>
</tr>
</tbody>
</table>
The case studies found on the following pages were performed by Dr. William J. 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.

_TransForce²_ 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.

_TransForce²_ Appliances are constructed to the highest engineering standards, 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 _TransForce²_ 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**
_Nitaium_ 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

**Blades**
For ease of insertion

**Color-Code**
Easy size identification

**Expansion Modules**
Slow continuous force
Rapid improvement by maxillary arch development with a Transverse Expander corrected the crossbite and improved arch form in this case. After 5 months of treatment the Transverse Expander was kept in place for an additional 3 months. The final photographs show the occlusion and arch form 4 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.
TREATMENT OF LABIAL CROWDING

In this case, rapid improvement by maxillary arch development with a Transverse Expander allowed efficient progression to fixed appliances over a period of 5 months with appointments at 10 week intervals. Final photographs were taken 3 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 8 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 8 months, and the *TransForce²* Appliances remained in place for 3 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 3 months, and the appliance was used as a retainer for an additional 6 months.
No further treatment was required and the final photographs show the occlusion and arch form 3 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.
PHASE 1
TRANSVERSE ARCH DEVELOPMENT

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 6 months.
After eruption of permanent teeth, TransForce Sagittal Appliances correct slight residual crowding, followed by a lower fixed appliance for 6 months. No upper fixed appliance was required. Interceptive treatment with invisible lingual appliances simplified correction of this malocclusion.
ARCH DEVELOPMENT IN ADULT THERAPY

*TransForce*² 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 2 years followed by fixed lingual retainers.
MEET THE DOCTOR

DR. WILLIAM J. CLARK
Oxnard, CA

Dr. William J. Clark has 50 years experience in orthodontic practice and continues to develop innovative appliances in orthodontic and orthopaedic techniques. He developed Twin Block 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 mission of Henry Schein® Orthodontics™ is to provide state-of-the-art orthodontic products and innovative clinical solutions that enable our customers to offer exceptional patient care, while expanding the scope and profitability of their practices.