

# Distalization Using the FAST BACK Expansor™

## Requirements, Ideas, Comparisons and Applications

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Modern orthodontics is continually searching for new treatments which conserve the dentition of the patient. This has led to an increasing tendency to avoid, as far as possible, any treatment that involves extractions.

The disadvantage of this is that there is no space readily available in the arches, resulting in a need for appliances which can create or enlarge the space required by acting both in a transversal and distal direction.

Many appliances designed to retract the upper molars have recently been brought onto the market in an attempt to resolve this problem.

Italian researchers have distinguished themselves in this field and have achieved excellent results.

One of the main reasons for their commitment is undoubtedly the considerable difficulties experienced by clinicians in gaining the patient's cooperation if extraoral headgear, the conventional distalization appliance, is prescribed. It is therefore necessary to develop distalization appliances to replace the headgear.

In our opinion, the ideal distalization appliance should include the following features:

- no requirement for patient cooperation
- a high degree of bio-mechanical control
- minimum loss of retention
- extremely compact design
- minimum interference when chewing, swallowing or speaking
- no impairment of aesthetics
- no pain or feeling of tension during distalization of the teeth.
- easy and gradual activation by the operator
- completely safe treatment
- automatic stop of the orthodontic movement
- simple construction
- compatibility with different orthodontic techniques
- easily cleaned



In our many years of working daily with very different appliances we were able to gather a wealth of personal experience and carry out evaluations which encouraged us to develop the Fast Back Expansor. This new orthodontic distalization appliance is customized for each patient and consists of

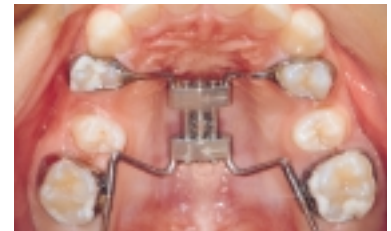
specially developed and fabricated components.

The table gives a summary of our observations on the distalization appliances we used and assessed. In 1999 we began development work on our project for a new distalization appliance which was intended to overcome at least some of the negative features of previously tested appliances.

The project was intended to achieve the following aims:

1. produce an appliance that the patient does not have to activate at home.
2. enable precise regulation of the degree and direction of the forces applied
3. provide the option of using vestibular appliances during distalization
4. guarantee good retention during and after distalization
5. reduce the number of activations required
6. simplify the activation procedure
7. guarantee reliability when in use by excluding the possibility of overactivation
8. allow different treatment options on both sides of the jaw
9. guarantee a high degree of tolerance on the part of the patient and no impairment of aesthetics by the appliance.

Thanks to the combination of clinical experience (Dr. C. Lanteri and his orthodontic team) and technical expertise (Filippo Francolini - Firenze Ortodonzia laboratory) and the availability of the most up-to-date production technology (Leone in collaboration with the research and development department led by Gabriele Scommegna with technicians Riccardo Sinibaldi,



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Andrea Morgia and engineer Maurizio Dolfi), several prototypes of the distalization appliance, which we called the Fast Back Expansor, were developed in the early months of 2000.

Following a trial period of approximately 18 months for the various prototypes, the final version of the appliance was developed. In our opinion, this version included all relevant features and was therefore ready to be presented to orthodontic colleagues.

Some of these prototypes are shown in the photographs accompanying this report to illustrate the individual stages of the research and development work carried out on this appliance during the trials. The final photographs of the Fast Back Expansor show the finished version of the appliance with the special screws and components manufactured by Leone.

## SUMMARY DESCRIPTION OF THE FAST BACK EXPANSOR APPLIANCE FOR MOLAR DISTALIZATION

The Fast Back Expansor was fabricated according to the principle of placing forces on the molars by incorporating Memoria® springs which deliver a constant force (each pack contains two springs with different forces of 200g and 300g for different orthodontic requirements).

To achieve this result, while still enabling precise control of tooth movement and ensuring the greatest comfort possible for the patient, an arm is fabricated to fit into a small tube (1.1 mm

diameter) which is soldered onto the palatal surface of the bands on the molars to be distalized. An open Memoria® spring is added to the arm and delivers the required force to move the tooth in the desired direction, which is determined by the arm sliding inside the tube. The spring must be reactivated after the tooth has retracted approximately 1.5 – 2 mm: the operator activates the distal screw as required so that it compresses the spring again (after distalization has begun, activation should be carried out, on average, every 30 – 45 days).

A Nance palatal pressure button, which also contains the anterior components of the screws, ensures stability of the anterior region and anchorage.

This design allows the Fast Back Expansor to deliver continuous, preset forces (option of two types of springs, 200g and 300g). The direction of the spring is determined by the arm on the expansion appliance and does not require the cooperation of the patient during treatment.

The Fast Back Expansor also has a self-locking terminal stop, which makes the appliance fully programmable and considerably increases its safety during use.

The Fast Back Expansor also enables vestibular treatment to be initiated using any multibracket technique without having to wait until distalization is complete.

In our next report we will go into the clinical indications and working stages for fabricating the appliance in detail.

**QUESTIONS? CALL (800) 242-9986**

## FAST BACK EXPANSOR KIT

DESCRIPTION	CODE NUMBER	Q.TY FOR PKG.	CLASS
FAST BACK EXPANSOR KIT	A1760-91	1	03
ARM BENDING INSTRUMENT FOR FAST BACK	P1622-00		



*Fast Back on the model*

### ALL REPLACEMENT PARTS FOR FAST BACK EXPANSOR KIT (A1760-91) ARE AVAILABLE IN REFILL PACKAGES

DESCRIPTION	QTY. FOR KIT	REFILL PART NUMBERS	QTY. FOR PKG.	CLASS
DISTALIZER 9MM UR F.B. EXPANSOR	1	A1760-09	1	03
DISTALIZER 9MM UL F.B. EXPANSOR		A1761-09		
SPHERICAL ENDS	4	A1763-00	10	
SPRING COMPRESSION RINGS		A1763-01		
MEMORIA® COIL SPRINGS 200 G		A1763-02		
MEMORIA® COIL SPRINGS 300 G	2	A1763-03		
MIM® PALATAL TUBES 1,1 mm DIAM.		A1730-04		
KEYS	1	A1763-04		11
SAFETY RING LEASH FOR KEY		A0557-02	100	03



*Coil spring in detail*



*Fast Back Expansor Kit*