

HYCON® Device

Fast, precise and successful space closure made easy!

25 years - around the globe
research - design - manufacturing - distribution



The HYCON® Device



Fast, precise, successful space closure and midline corrections made easy!



Eliminating guesswork and stress when closing spaces.

Amount of force, the length of force application, the degree of archwire deflection, the amount of friction, the stress of closing loops, the difficulty in handling....space closing was a long list of difficult, stressful unknowns.

The challenge to eliminate this long list of problems was brought to me by Dr. Winifried Schütz. His dream appliance consisted of a post and screw and presented a truly technical-mechanical challenge.

The HYCON® Device is designed specifically to provide the optimal metabolic state for safe, fast and predictable tooth movement. To achieve adequate tissue reaction very little force is needed, however with the common space closing techniques, additional force is always required to overcome the friction within the mechanical system. The mechanics of a screw can be precisely measured - the size of the threads is directly proportional to the movement of the screw. The amount of force generated by the screw is adequate enough to overcome any amount of frictional forces, but does not generate any additional dynamic force, providing the perfect stimuli for tooth movement.

Once we understood this principal, exact screw thread size was calculated, now we were able to mathematical calculate the distance the screw travelled, setting distance as our known calculator for safe, efficient and predictable tooth movement, putting the orthodontist in control of treatment.

Successful

"My colleagues tell me that they are able to treat cases with the HYCON® device that before would have been beyond therapy. I close all my spaces with the HYCON® – it has never failed me." Dr. Schütz, Germany



Fast

The HYCON® is activated in small steps at intervals that create an intermittent tooth movement. This allows recovery of the tissue in-between activations, and provides the physiological stimulus for the alteration processes. This perfect balance provides a high efficiency in tooth movement

HYCON® Tube

Post inserted into the auxiliary-tube of your double buccal tube.

Painless

Activated in small steps at intervals best suited to maintain adequate blood supply, closely emulates ideal bodily movement and produces pain free space closure for the patient

HYCON® Clip On

Clips on directly to your archwire (perfect when no auxiliary tube is available)

Precise

The movement of the tooth is determined solely by the advancement of the thread of the screw. The thread has been precisely calculated to a pitch of 0.014", now you can precisely calculate this pitch by number of turns to precisely advance the screw and in-turn close the space with complete understanding and control

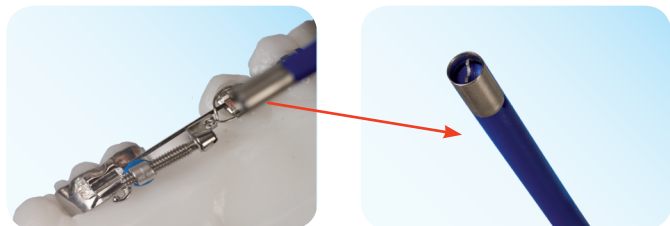
Easy

Easily installed at the beginning of space closure with two options to choose from. Can be used with or without an auxiliary tube on your buccal tube. Also easily activated, a small screwdriver with a uniquely design safety head is simply used to turn the screw





Eliminate the uncertainties with space closure



The force necessary to move a tooth must overcome the friction between arch-wire and bracket, and also must stimulate tissue response.

With elastic forces the amount of stretching or deflection is proportional to the total force required. In order to achieve the appropriate amount of force, the activation length of an elastic mechanism has to be far greater than the periodontal gap.

In contrast to this the threaded screw-type mechanism allows the separation of force and distance. The movement of the tooth is determined solely by the advancement rate of the thread and the amount of activation turns.

Being independent of elastic forces it is thus possible to exert a very precise activation at a fairly high force level, but at a very short and controlled distance.

Speed up treatment – optimal recovery of the periodontal tissue

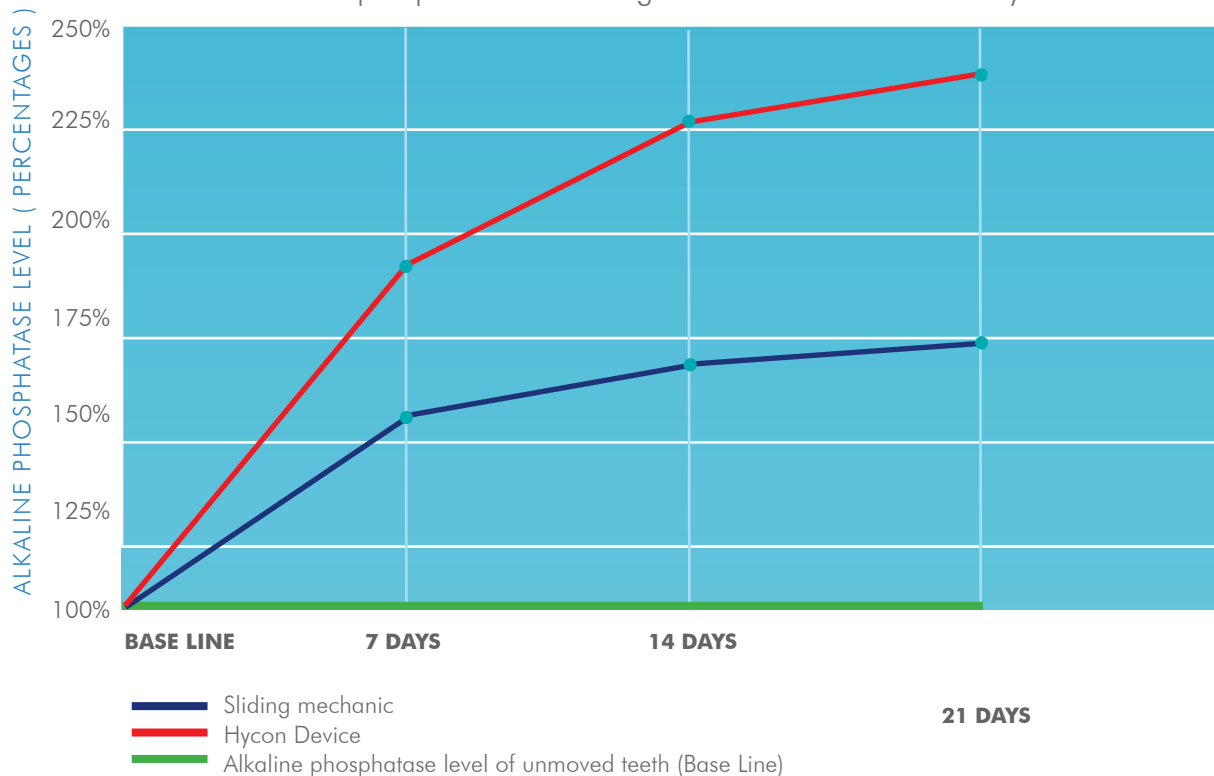
The HYCON® is activated in small steps at intervals which can be determined according to the condition of the periodontal tissue. By creating intermittent tooth movement, the HYCON® allows recovery of the tissue in between activation steps. In contrast to the characteristics of elastic elements of force, where the power being generated is proportional to the activation stretch - a screw driven mechanism enables the separation of activation distance

and force. The screw's force only plays a role insofar as being adequate enough to overcome frictional forces. After the adjustment of the HYCON®screw the appliance is once again passive. There are no existing elastic forces, what remains from the activation is a slight increase in "tissue pressure". This is the physiological stimulus for the desired alteration processes.

Alkaline phosphatase study, used as an indicator substance, increased 140%.

The alkaline phosphatase, bone specific also known as bones alkaline phosphatase BAP, is an enzyme that is active in the alkaline milieu. It is generated as a by-product of bone synthesis, produced by the osteoblasts and additionally serves as a marker for bone regeneration processes. From this Prof. Dr. Anmol Khala concluded, that out of the quantity of measured alkaline phosphatase the activity of the bone metabolism and consequently the rate of bone turnover can be determined.

Increase of alkaline phosphatase level during tooth movement within 21 days.

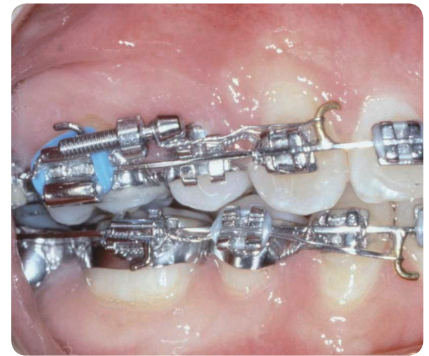
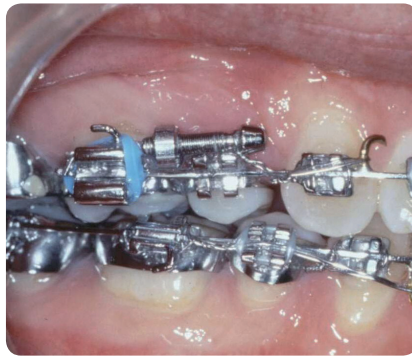
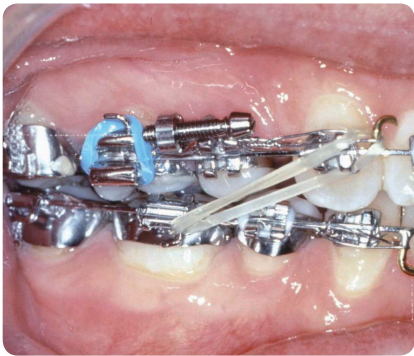


Data reported by Dr. A. Khala 2005.

His experiment consisted of measuring the concentration of alkaline phosphatase in the gingival crevicular fluid of the shifted tooth. Here, the teeth - divided into two groups – were moved by different mechanisms. Group 1 was drifted by sliding mechanics, while with group 2 the Hycon was put into action. After a 3 week treatment period, there was a significant difference in the amount of alkaline phosphatase. Based on the phosphatase level of unmoved teeth, set at 100 percent, a considerable increase could be discovered in both groups. While in group 1 there was an increase of 65 percent, in group 2 (the Hycon group) the measured level of increase was found to be approximately 140 percent. This indicates that group 2 had the highest metabolic activity.

Consequently, the largest rate of bone turnover and hence quickest tooth movement took place here.

Clinical Case Class I dental pattern – Class II skeletal pattern

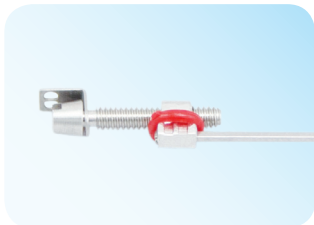


This 30.4 year old male presented with a Class I dental pattern and a moderate Class II skeletal pattern. He showed severe crowding in his lower anterior segment. Four first bicuspids were extracted. During treatment space closure occurred routinely in the lower arch however was slower in the

upper arch. The HYCON® device was used in the upper arch to efficiently complete space closure. Photos showing space closure with the HYCON® with a .019 x .025 stainless steel wire. Space closure took 3 months.

case by: Dr. Schütz

HYCON® Tube



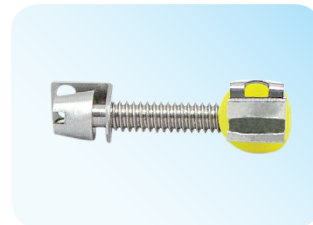
Designed specifically with a support-wire which is inserted into the auxiliary-tube of the molar band from the mesial side and bent back.

A double buccal tube is required for the use of this appliance.



Holding pin of the HYCON® Tube is inserted into auxiliary tube on your buccal tube.

HYCON® ClipOn



If a double buccal tube is not available, the HYCON® ClipOn simply clips onto the archwire.



HYCON® self-ligating locking clip is shown in open state, revealing the HYCON's slot.



Close the HYCON® ClipOn by applying pressure with the pliers.

If the 1st and 2nd molars are banded place the HYCON® ClipOn distally to the 1st molar.

If the 2nd molar is not banded place the HYCON® ClipOn mesially to the first molar

HYCON® order info

Item #	.018	.022	Sales Unit
HYCON Tube*	HCN-018-5	HCN-022-5	5 Patient Kit
HYCON ClipOn	HCNC-018-5	HCNC-022-5	5 Patient Kit

*Available in .018" slot technique with a .018x.025 support wire

*Available in .022" slot technique with a .021x.025 support wire

Patients Beginning Records

This 22.8 year old male presented with a Class I dental and skeletal pattern. He showed a satisfactory profile and had previously been treated orthodontally with extraction of his lower second bicusps. His upper lateral incisors were congenitally missing, however, upper space closure had not been completed during past orthodontic treatment. These spaces were closed during treatment with the Hycon (Note-This case was treated at the University of Southern California by Dr. Mark Fagin, under the supervision of Dr. McLaughlin.)



Photos showing space closure with the Hycon Device - .019 x .025 stainless steel wire.

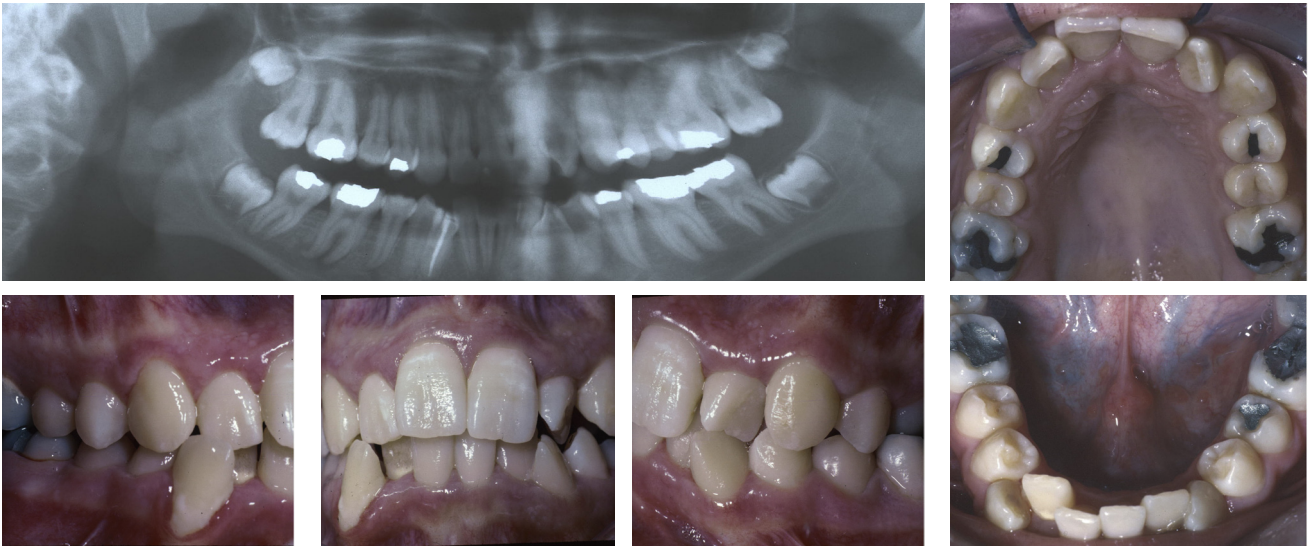


Photos showing completed case. Space closure was at the rate of 1mm per month.

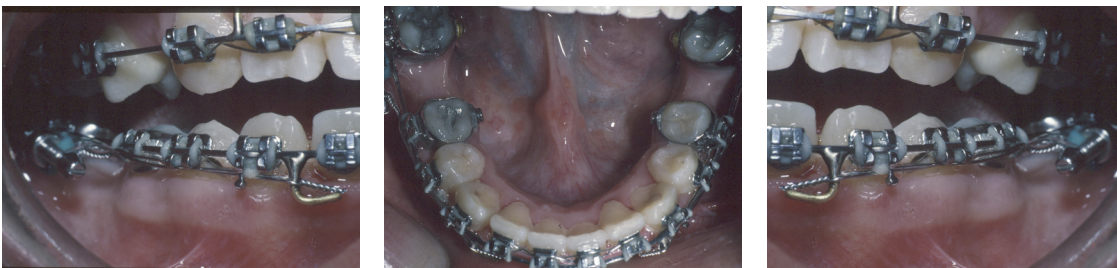


Patients Beginning Records

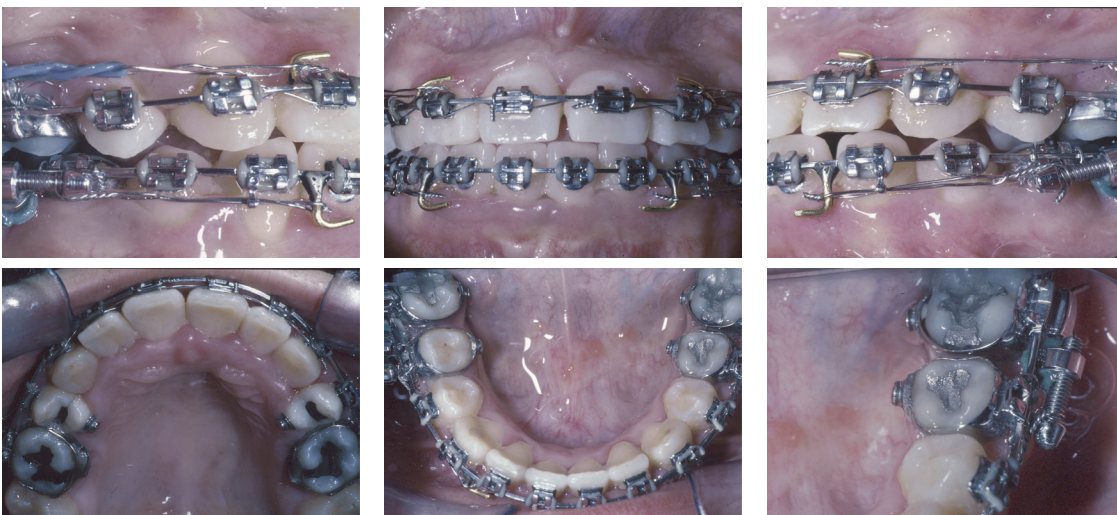
This 17.0 year old female presented with a Class I dental and skeletal pattern. She showed a satisfactory profile with moderate crowding in her upper and lower arches. Her lower first molars were restored with large restorations and her lower right first molar had developed a peri-apical abscess. Upper first bicuspid and lower first molars were extracted. The upper spaces were closed with normal sliding mechanics. Lower space closure was completed with the Hycon device. A .021 x .025 stainless steel wire was used in the lower arch to avoid any deepening of the curve of Spee during space closure. (Note-This case was treated at the University of Southern California by Dr. Steven Olsburgh, under the supervision of Dr. McLaughlin.)



Hycon Device placed on mandibular arch. Please note size of extraction spaces.



Photos showing completed case. Space closure was at the rate of 1mm per month.







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