INVENTOR

Prof. Won Moon D.M.D. M.S
from UCLA School of Dentistry

UCLA School of Dentistry, Certificate in Orthodontics, 1991
UCLA School of Dentistry, MS in Oral Biology, 1991
Harvard School of Dental Medicine, D.M.D., 1989
University of California, Irvine, BS in Mathematics, 1984

Dr. Won Moon is The Thomas R. Bales Endowed Chair in Orthodontics and serving as the program director for an orthodontic residency program, UCLA School of Dentistry. He has been a Diplomate of the American board of Orthodontics since 2002.

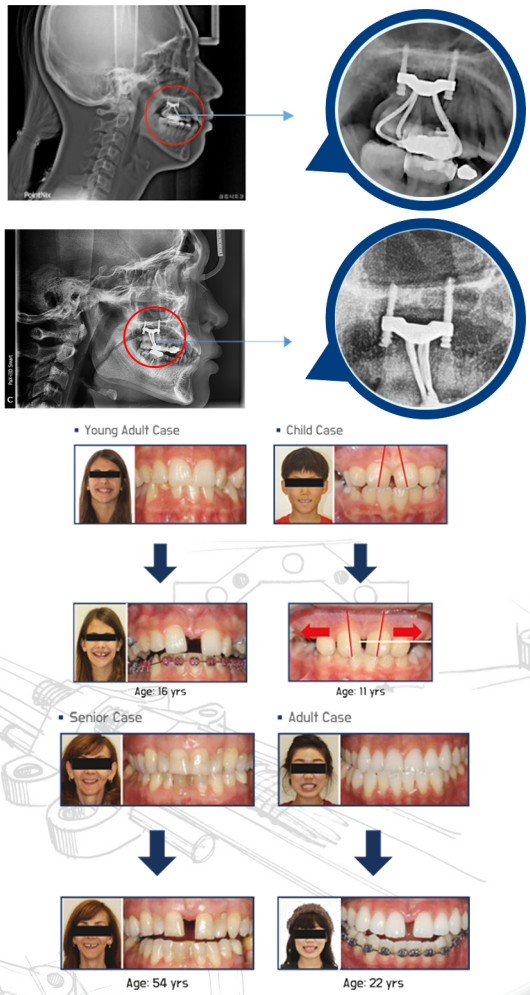
He completed his dental education at Harvard and Orthodontic education at UCLA. He studied mathematics prior to dentistry, and his research topics include 3D image analysis utilizing surface mapping functions and Elliptical Fourier's Descriptors, Genomewide Association Study of Craniofacial Phenotypes, Finite Elements Model Development and Simulation, Applications of 3D Printing in Orthodontics, Orthopedic Correction, Airway Changes with Orthopedic Corrections, Accelerated Tooth Movement, and Micro-implant (MI) Design study.

His work has been published in various journals, not necessarily limited to Orthodontics because of his background, and he is a co-author of two textvooks. He is currently working on a textbook, "Mid-facial Expansion". He has presented these findings in 17 countries, totaling over 150 presentations. His current focus has been establishing protocols for Orthopedic corrections with MI, improving the airway for patients sith nasal obstruction, and creating virtual patients utilizing image analysis.

His interest in Mid-facial expansion began in 2005 as Micro-implant became available in USA, and he is responsible for developing Maxillary Skeletal Expander (MSE), a unique Micro-implant assisted rapid palatal expander (MARPE). HE has been active in advocating non-surgical skeletal expansion in both children and adult patients, especially for those who may suffer from airway restrictions. His presentation in MSE has been widely accepted internationally, and numerous per reviewed publications are available.

Article

CLINICAL CASE



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MSE

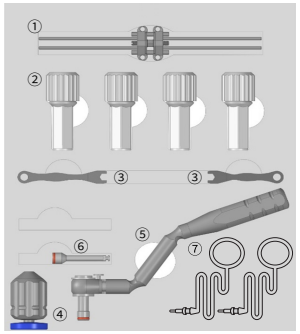
Maxillary Skeletal Expander

Invented by Prof. Won Moon
UCLA School of Dentistry

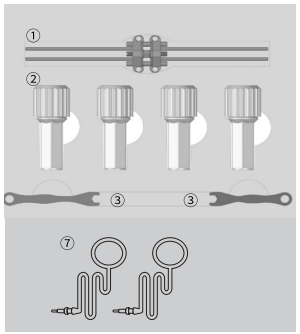
BIOMATERIALS KOREA

COMPONENTS

Starter kit



Refill kit



Components

① **MSE Expander** (Available expansion sizes : 8mm, 10mm & 12mm)
Choose an expander size according to a width of patient's palatal vault

② **Micro Implant(M.I)** (Ø 1.8mm X 11mm & 13mm Lengths are available)
Choose M.I length according to the thickness of patient's palatal bone

③ **2 Activation Keys** (1 Short & 1 Long)

④ **Mini Hand Driver**
Use with initial insertion of M.I placement
The best way is to use Mini Hand Driver for initial

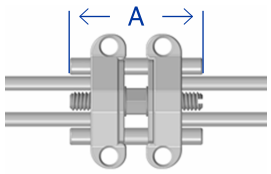
⑤ **Ratchet Wrench Driver**
Inserting and Removing M.I

⑥ **Short Engine Blade** (Shaft)
Attach to Mini Hand Driver

⑦ **Safety Leashes**
With ③ activation key

PRODUCT SPECIFICATION

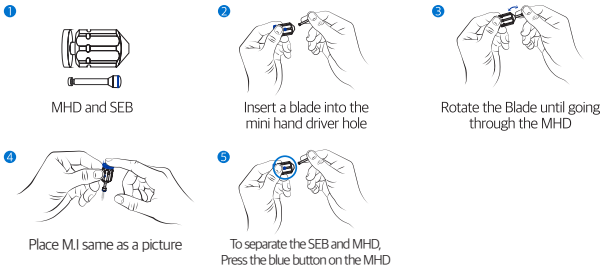
Expander Size



MSE	8mm	10mm	12 mm
A	14.1mm	16.1m	18.1mm

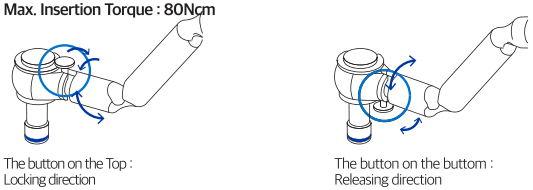
HOW TO USE COMPONENTS

Mini Hand Driver + Short Engine Blade

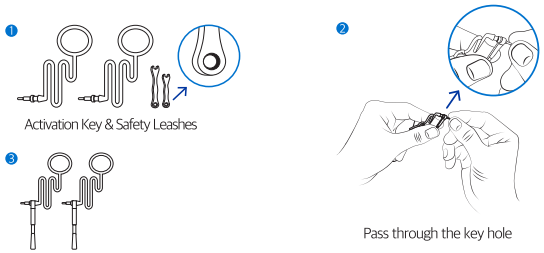


Ratchet Wrenches

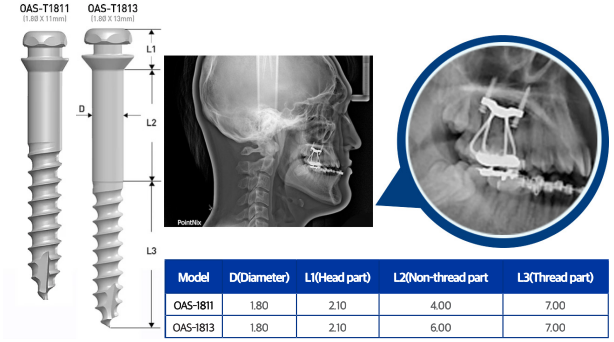
Max. Insertion Torque : 80Ncm



Safety Leash + Activation Key



MINI SCREW



Model	D(Diameter)	L1(Head part)	L2(Non-thread part	L3(Thread part)
OAS-1811	1.80	2.10	4.00	7.00
OAS-1813	1.80	2.10	6.00	7.00

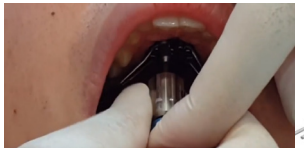
LAB WORK

Less than 1mm space between palatal vault and the expander
Keep at leat 3mm space between supporting arms and soft tissue in order to prevent tissue impingement

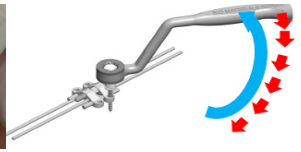
Soldered arms to the molar bands are intended as a guide for proper MSE placement

Even if the Mid-Palatal suture line is not in the middle, MSE must be placed vertically from the Mid-Line of the maxilla

INSERTION M.I



* [Manual Driver]_MHD + SEB



* [Manual Driver]_RW

The inventor recommends to use the manual driver for placing M.I Because You can feel insertion torque and Bi-Cortical engagement as well.

If you use motor driver, You can't feel insertion torque and bi-cortical engagement.

Please don`t insert the TAD too tightly because MSE body will be bent by strong pressures or forces.

ACTIVATION PROTOCOL

Caution : There could be situation when the hexagonal nut is not able to turn by the activation key In this case, stop activation for max 3 weeks for bone regeneration

MSE II

6 Turns ≒ 0.8mm (1 revolution)
ex) MSE II – 12 means to expand 12mm, Max. 90 turns

Early teens	6X / week (0.80mm / week)
Late teens	2X / day (0.27mm / day)
Early to Mid-20's	4~6X / day (0.53~0.80mm / day)
Older	Min. 4~6X / day
After Diastema	2X / day (0.27mm / day)