Inside Dentistry®

eBooks

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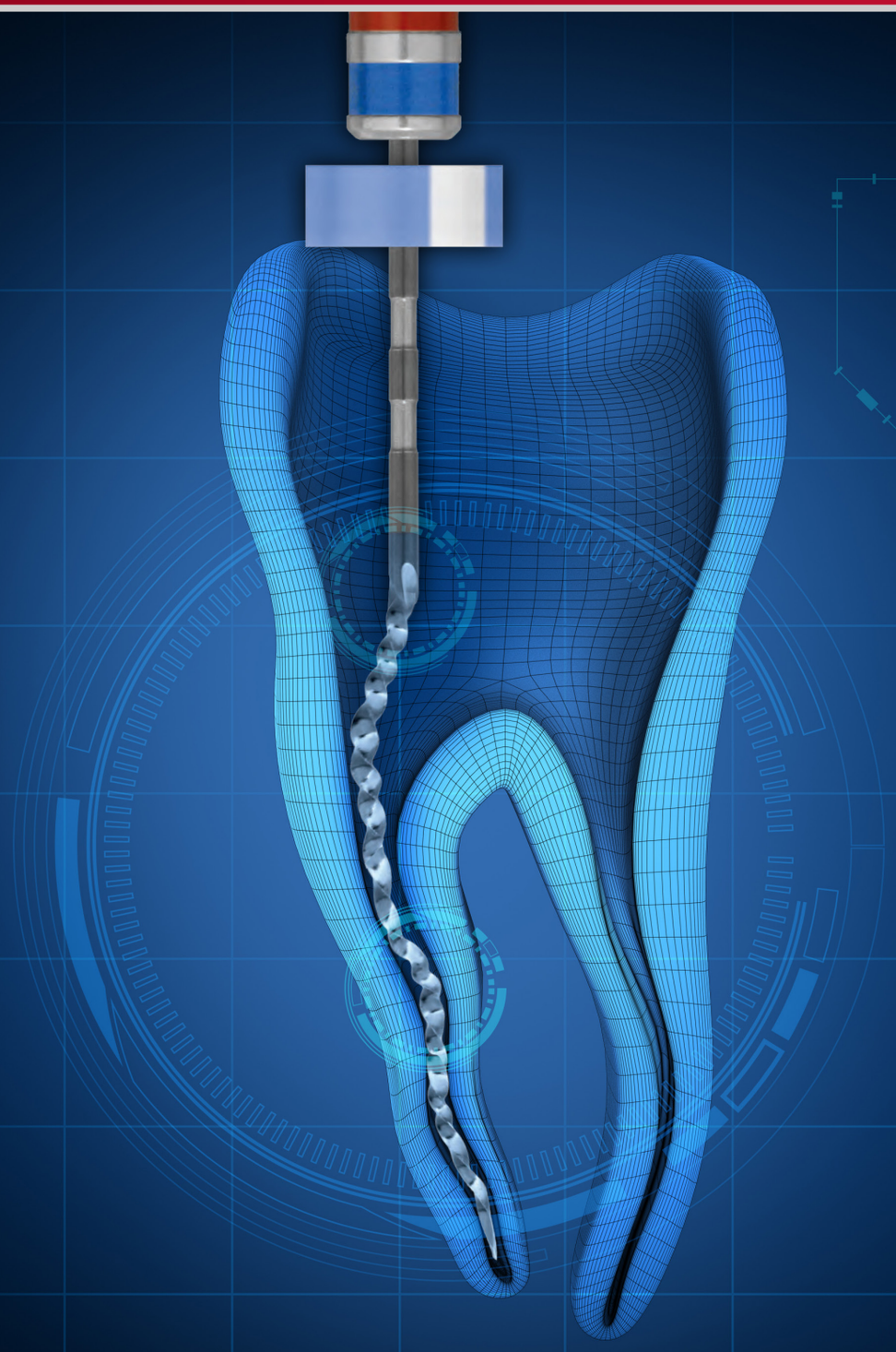


BIOLOGIC APPROACH TO ENDODONTICS

with 3D Shaping

COMPLEXITY OF THE Root Canal System

Nickel titanium (NiTi) instrumentation has undeniably had a significant impact on endodontic treatment protocols and outcomes. However, despite the benefit of improved efficiency, all traditional NiTi file systems have the same universal disadvantages:

NON-ANATOMICAL SHAPING

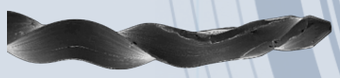
Although most canals have an irregular anatomic shape, conventional files can only make round shapes and cannot reach crucial areas during treatment.

Underprepared Canal

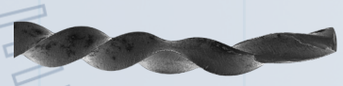
Overprepared Canal

EXCESSIVE TORQUE/FATIGUE

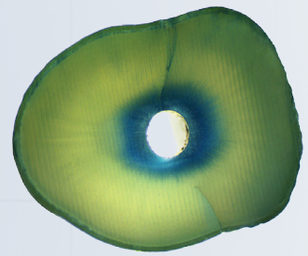
Traditional NiTi files are subject to file deformation and potential separation. In addition, they apply unwanted stress to the tooth.



Solid core bent



Solid core broken

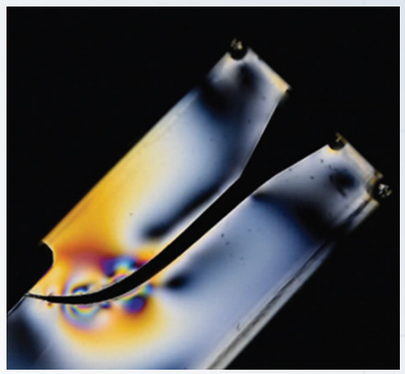


Micro crack

MULTIPLE NITI FILES REQUIRED

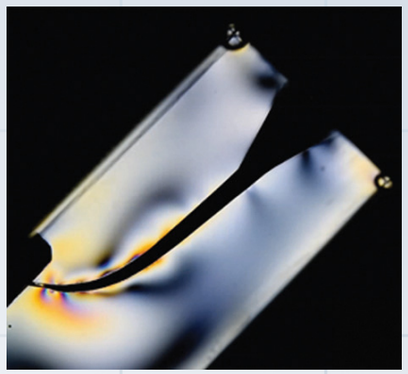
Multi-file sequencing techniques need to be utilized to reduce cyclic and torsional fatigue—adding cost, complexity, and chair-time.

Competitor A



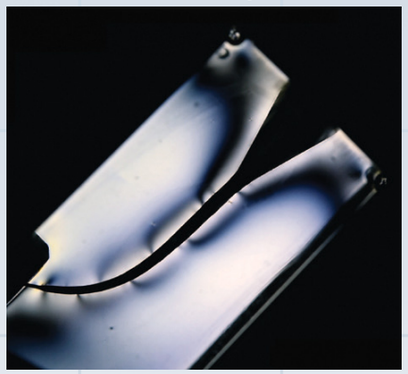
Alternating Movement: Very High Stress

Competitor B



Rotary Movement: High Stress

XP-3D Shaper™



Rotary Movement: Very Low Stress

VIEW VIDEO

ADAPT
to the Natural Canal

The XP-3D Shaper overcomes the disadvantages of traditional NiTi instrumentation while ushering in a new biologic standard of care in endodontic instrumentation. Its unique design safely, efficiently, and effectively cleans the root canal system three-dimensionally while respecting the canal anatomy.

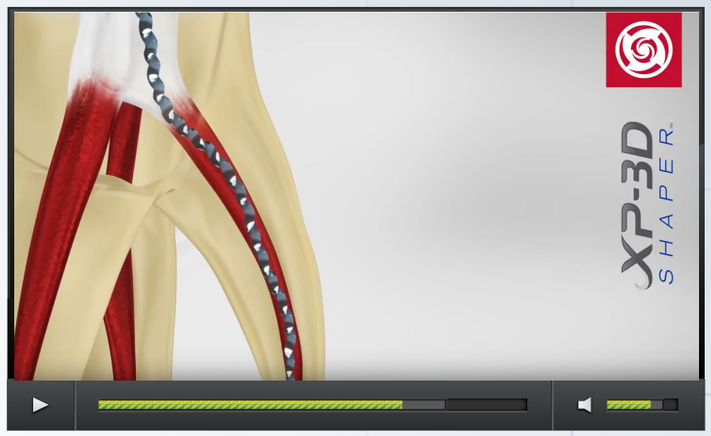
HOW IT WORKS

Adaptive Core Technology allows the smaller central core of the file to move freely and adapt to the canal's natural morphology. This facilitates debris removal, making it more efficient without occluding the dental tubules.

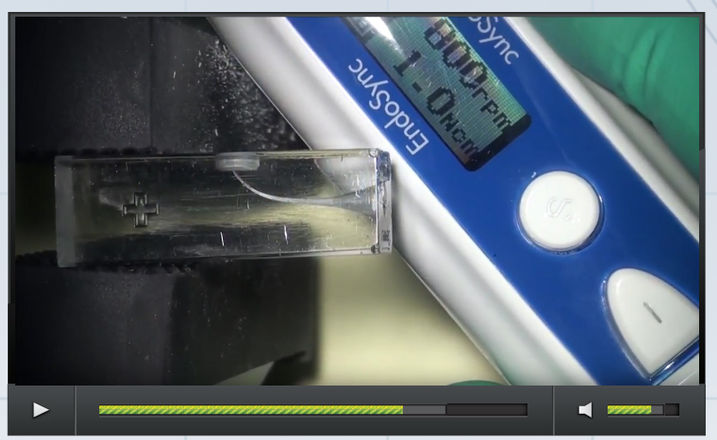
Maxwire® Technology adapts to the canal's natural anatomy by expanding once exposed to body temperature.

Booster Tip design helps guide the serpentine XP-3D Shaper around curvatures and keeps it centered in the canal. The tip of the XP-3D transitions from an ISO# 15 to an ISO# 30 within 1 mm from the tip, functioning as both a scouting and finishing file.

Gentle, Low-Stress Mechanical Debridement design characteristics drastically limit the amount of torque and stress applied to both the instrument and the canal. This results in reduced instrument separation and dentinal micro-cracks.



SEE IT IN ACTION



VIEW A TECHNIQUE TUTORIAL

WHY CHOOSE XP-3D? SEE WHY

MAKING THE MOVE
to Minimally Invasive

Endodontic treatment approaches have evolved to preserve natural tooth structure. Each segment of the endodontic procedure—cleaning, shaping, and obturation—works with and should enhance the others. This new biologic standard of care is an integral part of the restoration of a tooth.

With the development of advanced technology for both instrumentation and materials, we now have the power to save more teeth and improve their long-term prognoses.

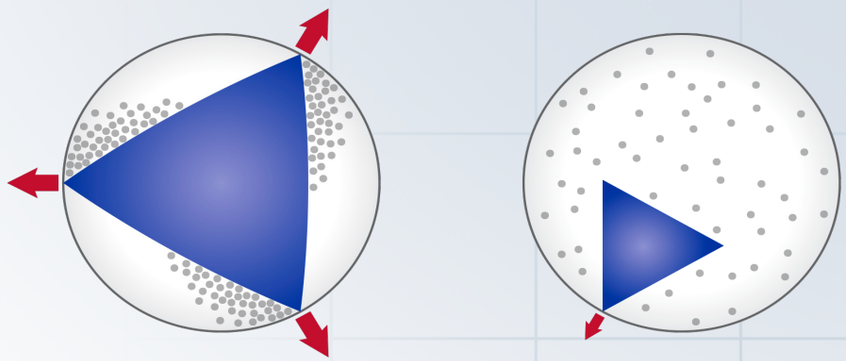
The XP-3D Shaper's intuitive micro mechanical debridement allows the practitioner to utilize a single instrument to safely and efficiently clean and enlarge the canal, while producing conservative shapes that respect the original canal morphology. As it rotates, the instrument's orbit expands and contracts to abrade the broad and narrow aspects of the canal equally.

Another crucial aspect of endodontic success is microbial reduction. Root canal debridement aims to remove as much pulpal tissue and bacterial substrate as possible, while creating enough volume for disinfection. The XP-3D Shaper facilitates excellent debris removal, making it more efficient without occluding the dental tubules. Furthermore, the turbulence enhances the penetration of irrigants into dentinal tubules and improves the overall disinfection of the canal.

In addition, shaping is no longer dictated by the limitations of obturation materials. The introduction of non-shrinking bonded obturation (BC Sealer™ and BC Points™) allows practitioners to embrace the XP-3D Shapers adaptive and minimally invasive design.

Traditional Core Files
Debris Accumulation/Compaction

XP-3D Shaper - Adaptive Core
Free-Floating with Turbulence



BIOCERAMIC BONDED OBTURATION: XP-3D OBTURATION TECHNIQUE
1. Confirm the apical diameter with an apical verifier, gutta percha point, paper point, or file.
2. Coat the canal walls with BC Sealer.
3. Coat the appropriate gutta percha point with BC Sealer and place to length.
4. Sear off gutta percha at the canal orifice and vertically compact with the appropriately sized plugger.

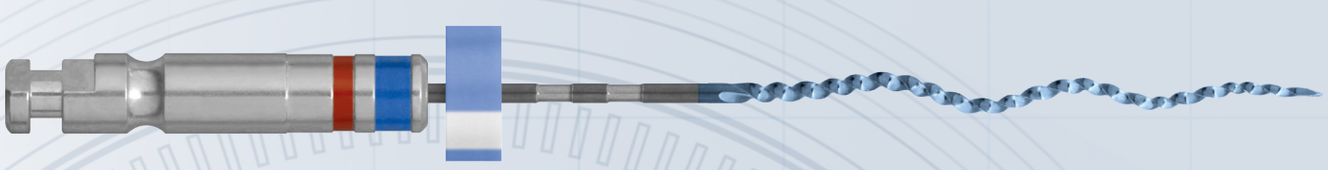
VIEW VIDEO

CASE STUDY #1

A 62-YEAR-OLD WOMAN PRESENTING WITH SYMPTOMATIC PULPITIS ON THE UPPER RIGHT FIRST MOLAR.

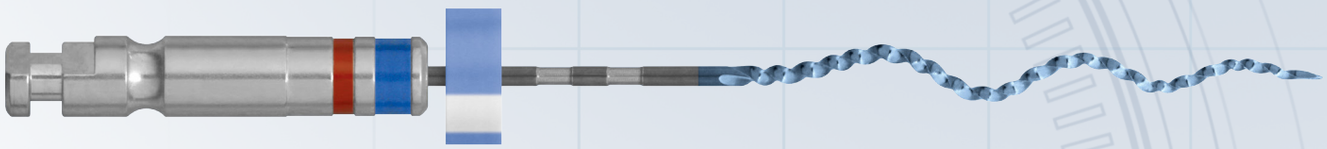
After preparing a glide path to 15/.02, the canals were instrumented with the XP-3D Shaper to 30/.04 following the instructions for use. The canals were then obturated with EndoSequence® BC Sealer and EndoSequence® BC Points.

With exclusive MaxWire Technology, the XP-3D Shaper adapts to the canal's natural anatomy by expanding once exposed to body temperature.



68° F (20° C) • M-Phase • Martensitic Phase

At or below room temperature, the instrument is very malleable and has a relaxed serpentine shape.
Soft Shape



95° F (35° C) • A-Phase • Austenitic Phase

When introduced to warmer temperatures, the instrument transitions to a more robust serpentine shape.
Memorized Shape

Pre-operative radiograph.

Post-operative radiograph.

CASE STUDY #2

Canal preparation (ex-vivo) of a maxillary right first premolar to size 30/.04 with the XP-3D Shaper then filled with EndoSequence BC Sealer and EndoSequence BC Points. We can see that the original shape of the canal has been perfectly preserved.

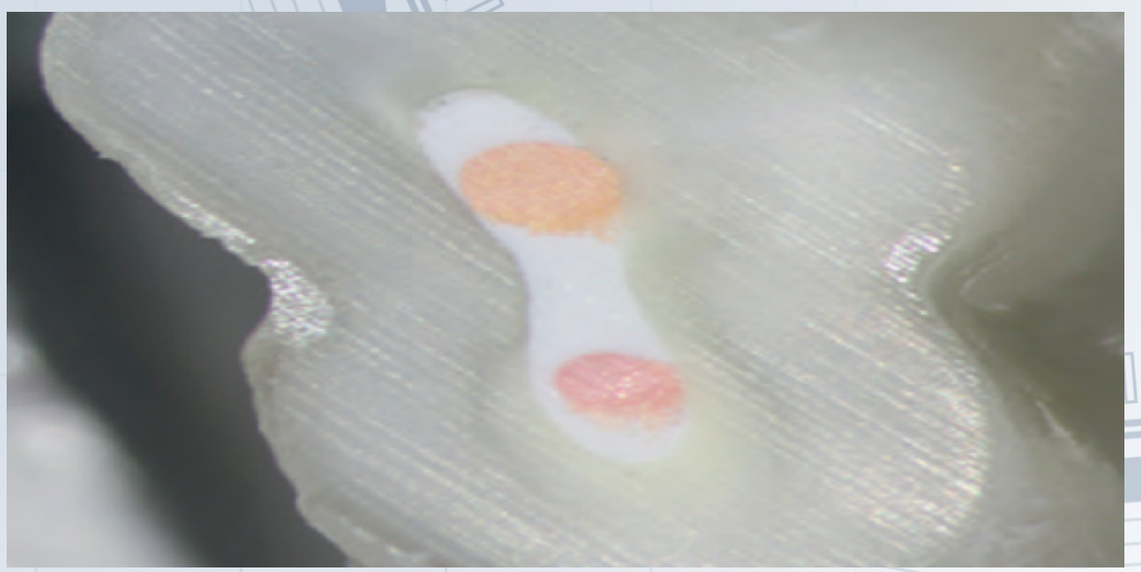
BC SEALER/FILLER FEATURES

- Highly biocompatible
- Absolutely zero shrinkage
- Produces hydroxyapatite
- Highly antibacterial (+12 pH)
- Bonds to dentin and BC Points

Radiograph showing the bucco-lingual aspect of the maxillary first premolar.

Cross-section 1 mm from the apex.

Cross-section 4 mm from the apex.



Cross-section 7 mm from the apex.

CASE STUDY #3

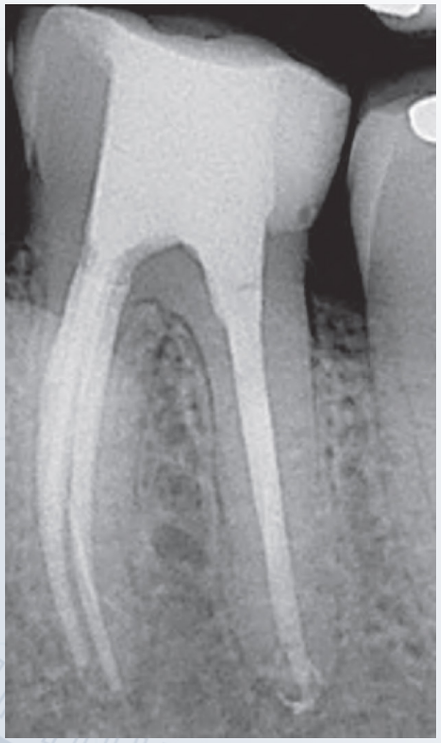
PULPECTOMY PERFORMED ON LOWER RIGHT FIRST MOLAR.

After preparing a glide path, the five canals were instrumented with the XP-3D Shaper. The canals were further cleaned with the XP-3D Finisher and obturated with EndoSequence BC Sealer and EndoSequence BC Points.

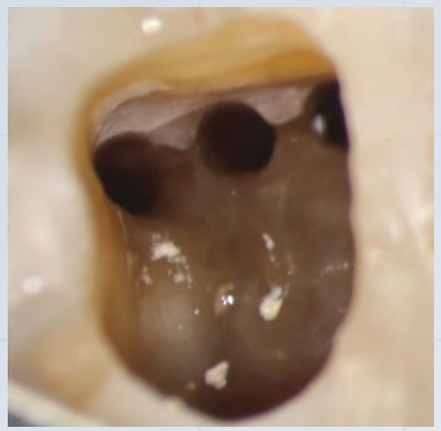
XP-3D FINISHER FEATURES

- adapts to canal's natural anatomy
- bowed shape at body temperature, incredibly flexible
- 3D debridement of the root canal system
- allows for enhanced irrigation
- intended to clean a prepared canal

Pre-operative radiograph.



Post-operative radiograph. View of canals after instrumentation and bioceramic obturation.



Microscopic view (x12) of 3 mesial canals after instrumentation with the XP-3D Shaper and cleaning with the XP-3D Finisher.

Microscopic view (x12) of 3 mesial canals after obturation with EndoSequence BC Sealer and EndoSequence BC Points.

THE SHAPE OF Things to Come

The XP-3D Shaper is a revolutionary endodontic debridement instrument that ushers in a new biological standard of care in endodontic practice.

SIMPLE: Unlike conventional NiTi files, the XP-3D Shaper features Brasseler USA's exclusive MaxWire Technology that allows the instrument to expand and become more robust when exposed to body temperature. Once an adequate glide path is established, the XP-3D Shaper is able to clean the entire canal without the need for multiple files.

SAFE: The XP-3D Shaper features a small flexible core (#30/.01) that is extremely resistant to cyclic fatigue. The unique serpentine design allows the instrument to gently abrade the inner walls of the root canal without the stress associated with conventional NiTi files.

ANATOMICAL: Root canal anatomy has limitless morphologies. With conventional solid core NiTi files, practitioners are often forced to over-prepare or under-prepare the canal. The XP-3D Shaper features a unique free-floating adaptive core that allows the smaller central core of the instrument to move freely and adapt to the canal's natural anatomy. This dynamic movement also creates enhanced turbulence for improved irrigation.

CONVENIENT: XP-3D Shapers are packaged in convenient single-use sets of three files for simplified handling and a sterile application for every case. XP-3D Shapers can be used with any endodontic handpiece, but for the most advanced experience, use with Brasseler's EndoSync™ Endodontic Handpiece System. This features the lightest-in-its-class EndoSync Cordless Micromotor along with the unprecedented accuracy of the EndoSync A.I. Apex Locator, which provides real-time apex locator readings as you progress down the canal.

Showcasing this clinical technique's ability to instrument and fill the oval areas of the root canal efficiently and safely.

- Allen Ali Nasseh, DDS, MMSc

ABOUT
The Company

At Brasseler USA we choose to do one thing exceptionally well: design and provide the highest-quality dental instrumentation. This concentration allows us to maintain an in-depth procedure knowledge of the field and to identify opportunities for new products and procedure protocols that no other company can match.

Since 1976, Brasseler USA has provided industry-leading instruments to healthcare professionals for use in restorative dentistry, endodontics, prosthodontics, periodontics, orthodontics, pedodontics, oral-maxillofacial surgery, oral hygiene, and dental laboratories. Our singular focus on instrumentation allows us to design and deliver the most dependable, reliable, and precise instruments available.

Our direct sales model is unlike any other instrumentation provider. Company founder Peter Brasseler established a model in which Brasseler USA products would be available exclusively through the company. That tradition continues today. Brasseler USA products are only sold through Brasseler USA—no middleman.

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