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## EdgeEndo® Testing

### EdgeFile™ with Fire-Wire™ Cyclic Fatigue Testing Study

#### Introduction

Heat treatment is used to change the deformation and strength characteristics of metals and metal alloys. The purpose of this evaluation was to determine how EdgeEndo's™ EdgeFile™ with "Fire-Wire™" NiTi files compared to various competitor NiTi endodontic rotary files performance when tested for cyclic fatigue.

#### Materials and Methods

EdgeEndo™ EdgeFile™ 20/06 with "Fire-Wire™" rotary files were compared to Dentsply Tulsa Dental® 20/06 Vortex Blue®, Dentsply Tulsa Dental® 20/06 GT Series X®, Dentsply Tulsa Dental® F1 ProTaper®, Sybron® 20/06 K3®, Sybron® 20/06 K3 XF®, and Brasseler® 20/06 Sequence® Endodontic Files. This study was performed at U.S. Endodontics in Johnson City, TN.

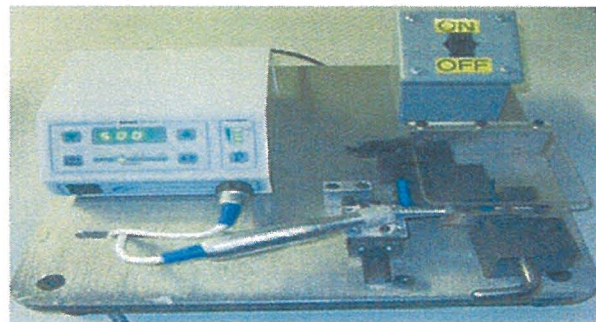


FIGURE 1

#### Cyclical Fatigue

Thirty of each file listed above and on the chart in the results portion of this study was evaluated for cyclical fatigue.

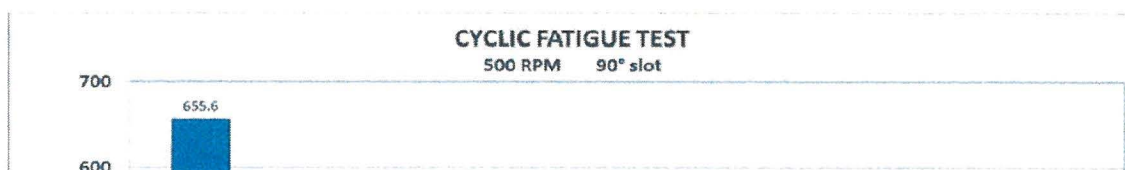
Cyclical fatigue test was performed using a custom test system (Fig. 1) with each file rotated at 500 RPM while 3mm of the file tip was inserted in a test block with a 90° curvature. Time to failure (seconds) was measured for each instrument.

#### Results

##### Cyclical Fatigue

EdgeFile™ with "Fire-Wire™" rotary files yielded a greater mean time to failure (MTF) than other industry brands

(See Chart below). EdgeEndo™ "Fire-Wire™" files had the greatest mean time to failure at 655.6 seconds, with the lowest MTF at 80.9 seconds.



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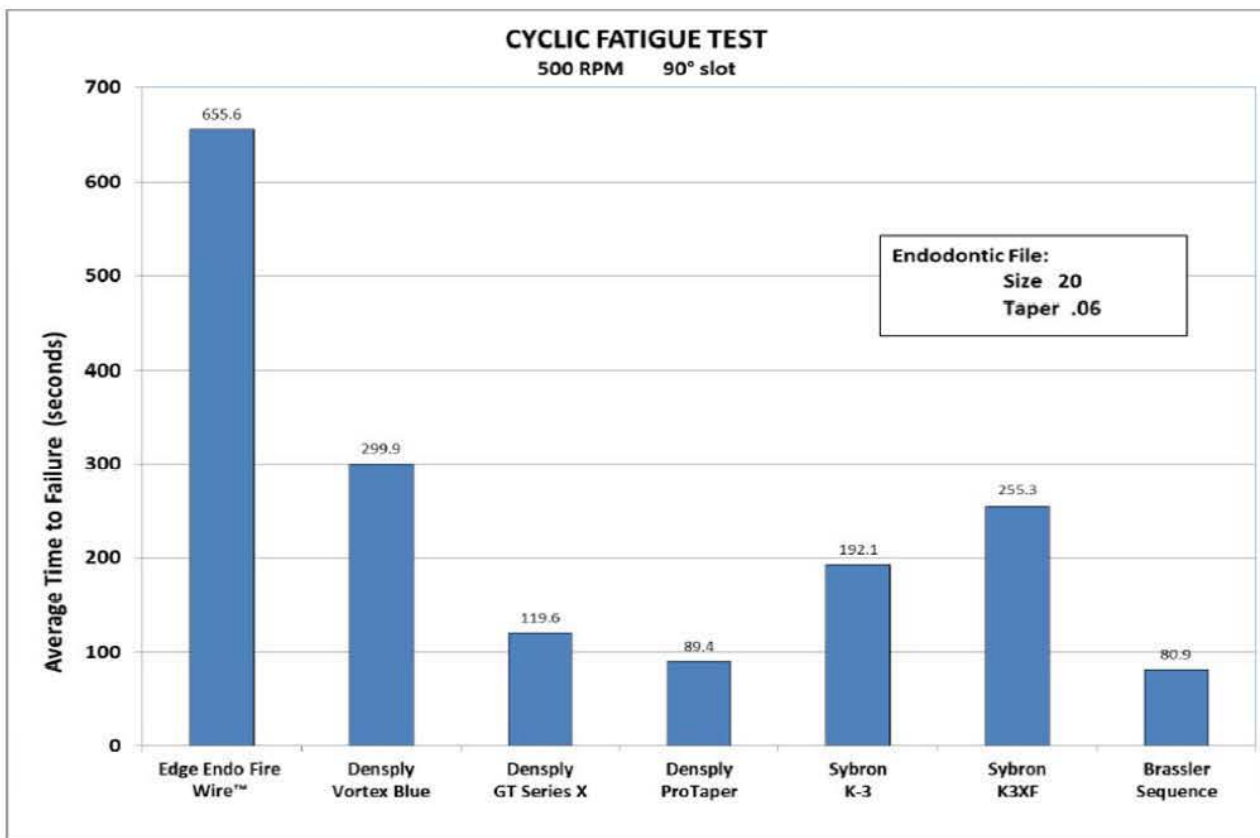


Figure 2

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