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Essential Dental Systems, Inc.
U.S. Patent No. Re. 31,948 and foreign patents.
Made in U.S.A.

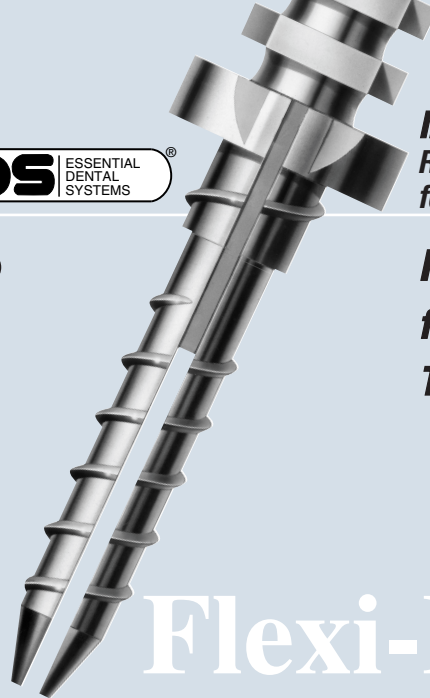
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FT11111-2



Caution: Federal law restricts this device to sale by or on the order of a licensed dentist.



IMPORTANT:
Read pages 7 through 13
for Technique first.

**Instruction Booklet
for Flexi-Flange
Titanium Posts.**

Flexi-Flange®

Made in U.S.A.

Since their introduction of the revolutionary split shank Flexi-Post® Essential Dental Systems has developed an innovative family of products that meet the challenges of restorative dentistry.

In keeping with their tradition of superior, clinically tested products that are proven safe and reliable under function, Essential Dental Systems has created another remarkable product:

Flexi-Flange®

Specifically designed for all situations where there is inadequate coronal dentin and excessive occlusal forces, Flexi-Flange is designed with a stress-absorbing flange that virtually eliminates post loosening or fracture under function.

Essential Dental Systems is legitimately expanding the boundaries of dental knowledge. And each contribution they make proves essential.

Table of Contents

2 Flexi-Flange Characteristics

4 Flexi-Flange Components and Their Uses

5 Flexi-Flange Facts

6 Recommended Uses for Flexi-Flange

TECHNIQUE:

7 Use of the Depth Gauge in Post Selection

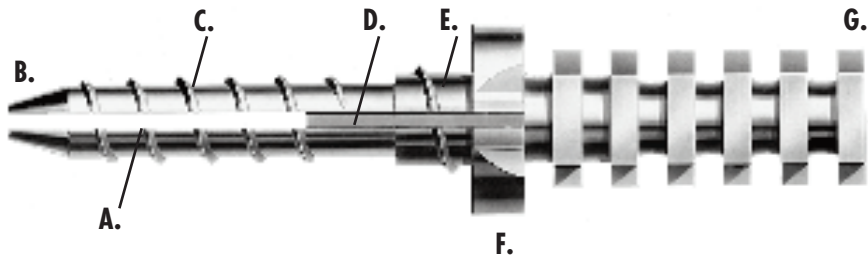
9 Post-Hole Preparation

11 Post Insertion

13 Core Formation

14 Flexi-Flange Ordering Information

Flexi-Flange Characteristics



A. THE UNIQUE SPLIT SHANK DESIGN OF THE FLEXI-FLANGE

- redirects all stresses of insertion and cementation safely to the post, not the root.
- creates vertical blades which remove all dentinal debris from the thread line during insertion, further enhancing the ease of placement.
- creates a threaded post-hole in a gradual fashion, once again minimizing stress to the root.

B. TAPERED TIP permits deep seating (an additional 1-2mm into the canal) of Flexi-Flange without the risk of root fracture. Non-threaded, this tip offers the advantage of self limiting insertion, further protecting the root from potential fracture.

C. PARALLEL-SIDED SUPER SHARP THREADS cut into the dentin rather than push it aside. Flexi-Flange's construction maximizes post retention without contributing to the production of insertional stresses.*

D. THE VENT releases internal hydrostatic pressure upon cementation.

E. THE SECOND TIER OF THE SHANK increases the intimacy of fit between the post and the natural point at which the canal widens, thereby reducing destructive long lever arms and enhancing the long term stability of the final restoration.

F. THE FLANGE offers a wider area for the post to distribute stresses of occlusion, greatly increasing the fatigue resistance of the post and final restoration.

G. THE HEAD of Flexi-Flange may be used for existing bridgework and for new abutments. The expanded surface area of the serrated head permits greater retention of composite material and is suitable, as well, for amalgam build-ups.

*Research has shown that under function, the Flexi-Flange distributes the stresses evenly throughout the length of the post in the root. In comparison with passively seated posts, these studies conclude that the Flexi-Flange produced fewer fractures.

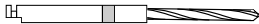
For more information, ask for a free copy of the Essential Dental Systems Research Abstract (available in English only).



Components and Their Uses



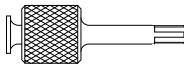
Depth Gauge - Used in conjunction with a radiograph, facilitates the proper choice of post size, placed within the root (see page 7).



Primary Reamer - Used to create the primary post-hole after use of the Peeso or Gates Glidden reamers (Essential Gates Glidden drills are recommended). The Primary Reamer is self limiting within each size.



Countersink Drill/Root Facer - Used to create the preparation for the second tier and the preparation for the flange of the head of the post, in one operation.



External Wrench - Fits snugly over the post head and drives the Flexi-Flange post into place. One size fits all serrated post sizes.



Extender - Allows the primary reamer or countersink drill to fit within it to gain 19 mm additional length; extra length may be needed when lack of space prevents the placement of the contra-angle between teeth.

Flexi-Flange Facts

The Flexi-Flange post is part of a color coded system containing posts of four sizes. The length and width of the shanks of the posts and the head sizes vary according to the size. Because you can shorten the Flexi-Flange to accommodate varying root lengths and occlusal clearances, they will satisfy practically all your needs.

| Post Number | 0 | 1 | 2 | 3 |
|-------------------------------------|---------|---------|---------|---------|
| Color Code | YELLOW | RED | BLUE | GREEN |
| Length of Head | 4.00mm | 5.00mm | 6.00mm | 7.00mm |
| Length of Shaft | 8.00mm | 9.50mm | 10.50mm | 13.00mm |
| Total Length of Post | 12.00mm | 14.50mm | 16.50mm | 20.00mm |
| Diameter of Shaft (Without Threads) | 0.79mm | 1.00mm | 1.25mm | 1.50mm |
| Diameter of Shaft (With Threads) | 1.07mm | 1.40mm | 1.65mm | 1.90mm |
| Diameter of Primary Reamer | 0.90mm | 1.20mm | 1.45mm | 1.70mm |
| Length of Primary Reamer | 9.00mm | 11.00mm | 12.00mm | 14.50mm |

Recommended uses for Flexi-Flange

#0 (Yellow)

- thin to average buccal or mesial roots of molars
- thin to average roots of maxillary first premolars
- thin roots of lower anteriors

#1 (Red)

- average to large buccal or mesial roots of molars
- normal to large roots of maxillary first premolars
- average roots of anteriors
- thin roots of premolars
- thin roots of maxillary laterals
- thin distal and palatal roots of molars

#2 (Blue)

- average roots of all maxillary anteriors
- average roots of premolars
- large roots of mandibular anteriors
- large distal and palatal roots of molars

#3 (Green)

- large maxillary centrals
- large maxillary canines

Technique: Use of the Depth Gauge in Post Selection

Research shows that parallel, solid shanked* posts should have at least 1 mm of tooth structure lateral to the most apical placement of the post. To aid in this placement, Flexi-Flange uses a transparent plastic depth gauge with silhouettes of the different sizes of the posts. Lateral and parallel to each silhouette are vertical lines spaced 1 mm from the threads. By placing the gauge over an accurate radiograph of a tooth, the dentist may easily determine if the 1 mm of lateral clearance exists. If the lines fall outside the root on the x-ray there is potentially not enough lateral tooth structure for safe placement.

In the latter case, the dentist should either go to a smaller post or remove enough apical post length of the post to fit at least 1 mm within the external borders of the root. Most importantly, the flange of the post must always be fully seated. The dentist should never allow the flange of the post not to seat. This would allow a loose coronal fit that would reduce the even stress distribution of the post and increase the chances of post loosening over time!

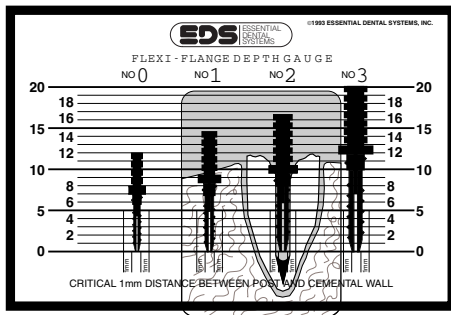
If the dentist chooses to remove apical length of the post, either because the full length of the placed post would thin out the lateral tooth structure too much or because the post-hole is too short for the placement of the complete post length, he should follow the steps listed below:

- 1) Trial seat the post, thus creating the internal thread in the root.
- 2) Unthread the post from the root.
- 3) Cut off the necessary apical post length, allowing the second tier and flange to seat fully.

At this point, the dentist may have fully seated the post yet not have adequate occlusal clearance for the restoration during excursive movements. If this is the case, the dentist simply removes the post, deepens the countersink preparation, removes adequate apical post length and fully reseats the post. There should now be adequate occlusal clearance for the restoration. If further deepening is necessary, repeat the process.

4) Cement the post as usual.

**The split shank Flexi-Flange is safer than any solid shanked threaded post and, therefore, less lateral tooth structure is necessary to prevent fracture.*



Post Hole Preparation

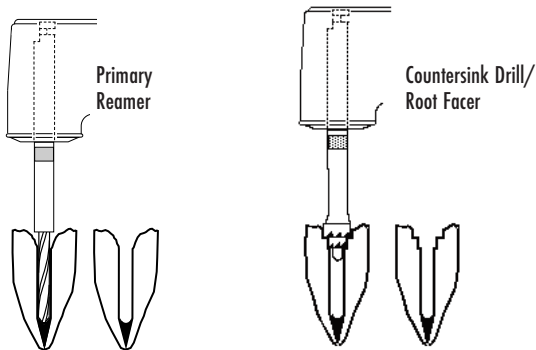
The post-hole preparation begins with the removal of the root filling material using either a Peeso or Gates Glidden reamer. Then, in sequence, a non-end cutting drill (Peeso or Gates Glidden reamer) is used until 100% of the post-hole length and 90% of the post-hole width have been established. The following chart indicates which non-end cutting drill will produce 90% of the post-hole width for the various Flexi-Flange sizes.

| Peeso | | Gates Glidden | | EDS Gates Glidden | | Flexi-Flange Primary Reamer |
|-------|----|---------------|----|-------------------|--------|-----------------------------|
| 1 | or | 2 | or | yellow | then ↘ | 0 (yellow) |
| 3 | or | 4 | or | red | then ↘ | 1 (red) |
| 4 | or | 5 | or | blue | then ↘ | 2 (blue) |
| 5 | or | 6 | or | green | then ↘ | 3 (green) |

When 100% of the post-hole length and 90% of the width have been achieved, the primary reamer is used. Since the Flexi-Flange will fit optimally if a more concentric hole is maintained, *the number of entries into the post-hole with the primary reamer should be limited*. It is much easier to prepare the post-hole when the canal is lubricated with either water or an anesthetic solution, or with any suitable wetting agent.

The countersink drill cuts two preparation in one operation. It prepares the seat for the second tier, as well as the seat for the flange of the post. The post must always fully seat. You can determine full seating of the post by the flush fit of the flange within its preparation. If the coronal flat surface of the root is slanted to the buccal, the flange may be seated lingually, but not buccally. In this case, deepen the countersink preparation enough to assure the flush seating of the buccal portion of the post. There is no danger in countersinking the post too much. If on the other hand, the dentist does not seat the post completely, he is reducing Flexi-Flange's tremendous retention and increasing the chances of the post loosening or fracturing under function. To achieve a complete seating, in post-hole preparation shorter than the length of the shank of the post to be placed, the dentist must remove enough apical post length to allow full seating of the post's second tier and flange.

The countersink drill is now used to prepare the post-hole for the second tier and flange portions of the Flexi-Flange post. The smooth extension on the drill is simply a lead to facilitate parallelism between the primary post-hole, second tier and flange.



Post Insertion

The selected Flexi-Flange is inserted with the appropriate wrench. It is important to note that the Flexi-Flange is designed to be seated on a trial basis in order to ensure accurate fit and position. During the trial-seating, if moderate resistance is felt, the post may be backed off 1/4 to 1/2 turn and then advanced again.

Advancing while backing off 1/4 turn when moderate resistance occurs is repeated until the post is fully inserted and the thread is created inside the root canal for the post. This procedure will remove debris from the thread line and facilitate insertion. The trial seating creates the thread line inside the root canal for the post.

The post is now unthreaded from the root. At this point, alteration to the post may be made. It is extremely important to note that the flange must always fully seat. Therefore, alteration should be made to the apical end of the post. Be sure to remove all dentinal debris from the split with an air syringe at this time.

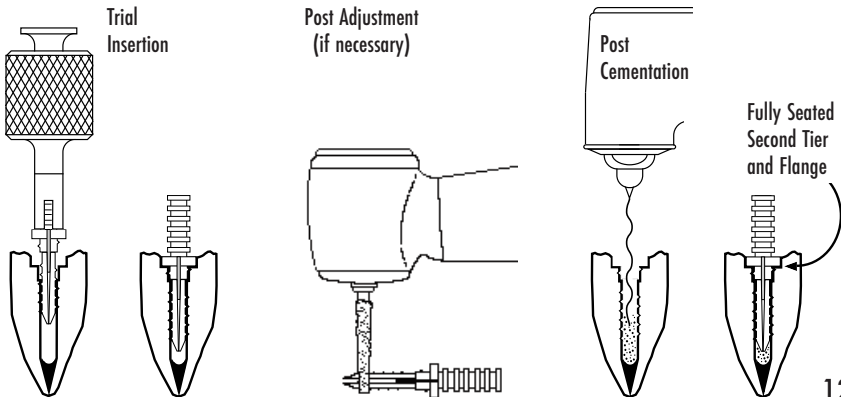
To alleviate any concern about shortening the legs of the post and, thereby, reducing its flexibility, remember that the legs of the post are shortened only after the post has been trial seated and the internal threads have been created.

Since the internal threads have now been made, the need for the flexible legs are no longer necessary. The dentist can reinsert the shortened post. The thread of the post will find its way into the already created internal threads of the root with minimal stress being produced.

Cement is now placed in the post-hole and on the post. The post is inserted into the post-hole and threaded in with light pressure. The post will seat completely with minimal resistance.

Special care must be taken to make sure the flange is completely seated. Excess cement is now removed. The Flexi-Flange has now been inserted and cemented with minimal stress being transmitted to the root.

***For the greatest post retention we recommend the use of auto mixing Flexi-Flow Auto™, Flexi-Flow Auto™ E (Cat. # 870-00, Cat. # 880-00) or Flexi-Flow® (Cat. # 850-00) or Flexi-Flow Natural® (Cat. # 860-00).**

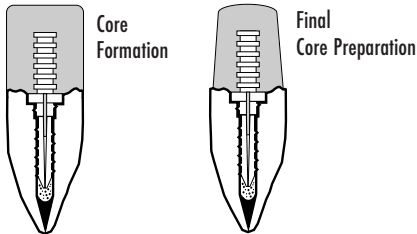


Core Formation

Composite Cores - Any core form may be used with composite materials. The composite should be placed in the core form and seated over the post using moderate pressure to ensure close adaptation of the composite to the core. For core formation with the strength of dentin we recommend the use of **Ti-Core® Auto E (Auto Mix, Dual Cured)** (Cat. # 830-00), **Ti-Core®** (Cat. # 800-00), **Ti-Core® Natural** (Cat. # 810-00), **Ti-Core® Fast Set** (Cat. # 805-00), or **Ti-Core® Natural Fast Set** (Cat. # 815-00) fluoridated composite core material.

Amalgam Cores - Any matrix may be used with amalgam buildup. The amalgam should be condensed around the post in the standard manner used for restorations. A high copper spherical amalgam is recommended for easy condensing and rapid set.

All excess core material, especially within the sulcus, must be removed. The abutment is now ready for crown preparation.



Flexi-Flange Kits and Their Contents

To order Flexi-Flange and Flexi-Flange accessories contact your authorized EDS dealer or call 1-800-22-FLEXI.

| | <u>Stainless Steel</u> | <u>Titanium</u> |
|---|------------------------|-----------------|
| Introductory Kits: | | |
| (4 posts each of sizes 0, 1, 2, and accessories) | Cat. No. 410-00 | 415-00 |
| Refills: | | |
| (10 posts, reamer, drill) #0 | Cat. No. 430-0 | 435-0 |
| #1 | Cat. No. 430-01 | 435-01 |
| #2 | Cat. No. 430-02 | 435-02 |
| #3 | Cat. No. 430-03 | 435-03 |
| Economy Refills: | | |
| (30 posts, reamer, drill) #0 | Cat. No. 440-0 | 445-0 |
| #1 | Cat. No. 440-01 | 445-01 |
| #2 | Cat. No. 440-02 | 445-02 |
| #3 | Cat. No. 440-03 | 445-03 |
| Mini Flexi-Flange Sterilization Box: | | |
| (2 posts each of sizes 0, 1, 2, 3, and accessories) | Cat. No. 197-08 | 197-09 |

Important Sterilization Procedures: **Endodontic Instruments, Posts, Drills and** **Wrenches are non-sterile.**

Prior to use, bag materials in an autoclave safe pouch and sterilize with a gravity displacement autoclave for 15 minutes at 132°C with a minimum drying time of 30 minutes. When reprocessing instruments, drills, wrenches, or taps, remove debris and dry before sterilization. Remove debris/soil using the EDS recommended cleaning protocol. Disinfect using a thermal disinfectant unit (washer-disinfectant) at 90°C for 1 minute.

For complete instructions see website.

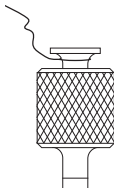


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Non-Sterile

(OVER)

Post Wrench Procedures:



In addition to the placement of a rubber dam, attach/tie a piece of dental floss (24 inch minimum) to the groove on the top of the wrench handle to allow for retrieval of the wrench.