Review Of Implant Systems

Implant Designs and Components
Nomenclature and Terminology

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Titanium Threaded Root Form Implants

Nobel/Branemark
3 I
Life Core
Osteo-Implant
## Three Prosthetic Tables

<table>
<thead>
<tr>
<th>Small Diameter</th>
<th>Regular Diameter</th>
<th>Wide Diameter</th>
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</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Small Diameter Image" /></td>
<td><img src="image2.png" alt="Regular Diameter Image" /></td>
<td><img src="image3.png" alt="Wide Diameter Image" /></td>
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</tbody>
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### Small Diameter
- The SD implant connection provides surgical and restorative flexibility due to its non-flared profile. The SD’s 1.0mm tall external hex provides increased stability. Lifecore SD implants are compatible with Steri-Oss® HL 3.25mm Prosthetics.

### Regular Diameter
- RD implants use the “universal” hex connection and are compatible with:
  - Nobel Biocare® - 3.75, 4.0mm
  - 3i® - 3.75, 4.0mm
  - Steri-Oss® HL - 3.8mm, 4.5mm
  - CenterPulse Taper-Lock® - 3.75mm

### Wide Diameter
- The WD implant connection offers surgical and restorative advantages, including increased prosthetic stability and torsional strength. The WD’s wide prosthetic table enables improved emergence profile. Lifecore WD implants are only compatible with Lifecore WD prosthetic components.
HA Threaded Implants
TPS Cylinders
Hydroxylapatite (HA) Threaded Implants

3.3mm  3.75mm  4.0mm  5.0mm
SEM Surface of TPS
Peri-Implantitis
Variations of Surface Treatments
The Biologic Width
Component Failures
Measurement of Rotational Play

Passive Abutment/Implant Hex Connection

Action During Abutment Rotation

Note: “Gap G” is the space between the implant’s external hex and the abutment’s internal hex. “A” represents the rotational freedom encountered during 1/2 of the rotational movement.
Increased screw shank length provides greater screw resiliency and improved torque retention under repeated loads.
External vs Internal Connections

External Hex Implant System

Zimmer
Replace/Nobel
Life Core
ITI
Friadent
3 I Certain

Internal Hex Implant System
Internal Hex Prosthetic Connection

- Beveled interface helps maximize prosthetic stability and evenly transfer occlusal loads to the implant.
- Deep internal hex provides superior strength and resistance to rotational forces...virtually eliminates abutment screw loosening.
Circumferential grooves at neck region promote bone interlock and even transfer of stress to surrounding bone.

Root-form, tapered design enables placement flexibility near convergent roots or ridge concavities.

Circumferential grooves at neck region promote bone interlock and even transfer of stress to surrounding bone.
Single Stage
And Surface Technology
Internal Locking Morse Taper Prosthetic Connection

- Morse Taper connection provides superior strength and prosthetic stability
- Virtually eliminates screw loosening
- Automatically centers abutment during placement
Internal Locking Morse Taper Prosthetic Connection

Abutment

Implant

Taper Locking Prosthetic Connection
STAGE-1 Implants

Regular Diameter (RDS) 4.8mm Prosthetic Connection

Wide Diameter (WDS) 6.5mm Prosthetic Connection

ITI
Zimmer
Life Core
Implant placed with smooth implant collar extending above the bone crest
Cement-Retained Restorations

- Straight COC Abutment
- 15° Angled COC Abutment
- 25° Angled COC Abutment
Instrumentation

Swivel Head Drivers
Uni - Grip Drivers

Color-coded for easy identification

Large knurling for excellent tactile feel and easy cleaning
Cement-on Crown (COC) Abutment System

Abutment Screws

Cement-on Crown Abutments

Implants
Cement-on Crown (COC) Abutment System

COC abutments seated on the Implants. Restoration seated on the COC Abutments.
Prosthetics for Screw-Retained Restorations

- UCLA Abutment
- Conical Abutment
- Standard Abutment
- Fixed Detachable Abutment
UCLA Abutment System

- Abutment Screw
- UCLA Abutment
- Implant
UCLA Abutment System

UCLA abutments fabricated into the bridge.

Restoration seated on the implants.
Fixed Detachable Abutment System

Coping Screw
Gold Cylinder
Fixed Detachable Abutment
Implant
Fixed Detachable Abutment System

Fixed detachable abutments seated on the implants.

Restoration seated on the fixed detachable abutments.
Prosthetics for Overdenture Restorations

O-Ring Abutment

Snap Abutment
O-Ring Abutment System

- O-Ring/Keeper
- O-Ring Abutment
- Implant
O-Ring Abutment System

O-Ring abutments seated onto the implants.

Overdenture seated onto the O-Ring abutments.
Snap Abutment System

Female Socket with Retention Ring

Snap Abutment

Implant
Snap Abutment System

Snap abutments seated onto the implants.

Overdenture seated onto the snap abutments.
Overdenture Abutment Drivers

Hand Driver
Accu-Torque Driver
Latch Driver
Accu-Torque Wrenches

Calibrated torquing devices are mandatory for proper screw tightening.*

Studies have found Accu-Torque Wrenches to be highly accurate and reliable.*

*The International Journal of Oral and Maxillofacial Implants, Volume 17, Number 2, 2002 and Volume 9, Number 2, 1994
Accu-Torque Wrench Operation
Torque Wrenches