3.0mm Ø MILO® Implants with

**Application:**
- Prosthetic Connection: Ø 1.8 mm O-Ball
- *Lengths: 10, 11.5, 13, 15 & 17 mm.
- Surface treatment: Blasted + Progressively Acid Etched Titanium

### 3.0mm MILO® Fine Pitch Implants

<table>
<thead>
<tr>
<th>Length</th>
<th>Ref. No.</th>
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<tbody>
<tr>
<td>10 mm</td>
<td>MLF3010</td>
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<tr>
<td>11.5 mm</td>
<td>MLF3011</td>
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<tr>
<td>13 mm</td>
<td>MLF3013</td>
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<tr>
<td>15 mm</td>
<td>MLF3015</td>
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### 3.0mm MILO® Wide Pitch Implants

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<thead>
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<th>Length</th>
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<tr>
<td>10 mm</td>
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<td>MLW3013</td>
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<tr>
<td>15 mm</td>
<td>MLW3015</td>
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<tr>
<td>17 mm</td>
<td>MLW3017</td>
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### 3.0mm MILO® Wide Pitch Implants, Long Collar (4mm)

<table>
<thead>
<tr>
<th>Length</th>
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<tr>
<td>10 mm</td>
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<tr>
<td>11.5 mm</td>
<td>MLW3011L</td>
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<tr>
<td>13 mm</td>
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<tr>
<td>15 mm</td>
<td>MLW3015L</td>
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<tr>
<td>17 mm</td>
<td>MLW3017L</td>
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*OSSEAN bio-active surface is found on all MILO implants. Its structure is engineered to increase host-to-implant biocompatibility and biomechanical response which is well documented in the scientific literature.*

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**Prosthetic Components**

### MILO® Laboratory Analog
- Replicates the MILO® Implant Platform .............................................. MLA

### MILO® Metal Housing with O-Ring
- O-Rings encapsulated in Micro metal housing for ease of placement and replacement .......................................................... MDLMMH
- O-Rings encapsulated in Standard metal housing for ease of placement and replacement .................................................. MDLMH

### O-Ring Replacements
- Quantity of 1 (for Micro Housing) .................................................. MDLMOR
- Quantity of 1 (for Standard Housing)............................................. MDLOR
- Quantity of 10 (for Micro Housing) ............................................. MDLMMOR

### MILO® Cement-Over Abutments™
- Cements over O-Ball assembly for fixed bridges, Straight .................. MLSA
- Cements over O-Ball assembly for fixed bridges, Angulated 15° .......... MLAA15
- Cements over O-Ball assembly for fixed crowns, Wide ...................... WCA3
- Plastic Castable Abutment for fixed bridges .................................... MLPA
- Plastic Healing Cap for Press Fit on O-Ball Assembly ....................... MLHC

### MILO® Impression Coping
- Pick up Impression Coping .............................................................. MLT

### MILO® Abutment for CAD/CAM
- Titanium Core for MILO® Platform .................................................. MLTICO

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*The actual thread length is 2mm less than the catalog description, regardless of the height of the collar (2mm or 4mm).*
The MILO® Implant System is engineered for the anatomical and physiological demands of long-term denture stabilization or the permanent rehabilitation of single or multiple incisors. The simplified surgical protocol is similar to that of a miniature implant, however, MILO® has the added advantages of increased bone surface interface, improved load transfer capabilities and greater yield strength.

MILO® Implants* are available in five lengths (10, 11.5, 13, 15 and 17 mm) and two thread profiles (Fine Pitch and Wide Pitch) that are engineered to address the clinical quality and quantity of bone. MILO® is a true convertible implant with one-piece solid strength and two-piece versatility. The Cement-Over Abutments™** provide the clinician with an unsurpassed range of prosthetic options.

* Pat. #7,033,174  ** Pat. #7,217,130

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### Ancillary Items

#### Drills
- Lancer 0-2mm - Sterile ................................................. LD
- Pilot Drill ø1.5mm Sterile ............................................. D1515
- Twist Drill ø2.0mm Sterile ............................................. D2015
- Final Drill ø2.5mm - Sterile ......................................... D25

#### Implant Insertion Instruments

**MILO® Contra Angle Driver**
- Standard Contra Angle .................................................. MDLCAD

**MILO® Ratchet Drivers**
Use as a MILO® Hand Driver or with a Surgical Ratchet Wrench
- Surgical Ratchet Driver ..................................................... MDLRD
- Surgical Ratchet Driver, Long ........................................... MDLRDL

**MILO® Manual Wrench**
- Connects to the Ratchet Driver ....................................... MDLMW

**Tissue Punch**
- Latch Tissue Punch ø3mm .............................................. RPCA3

**Surgical Ratchet Wrench**
- With standard 4x4mm connection, autoclavable ...................... SRA

**Surgical Box**
- Accommodates all MILO® surgical instruments for Implant delivery and placement. This multi-use box also accommodates instrumentation for MDL & OP Implants. (Photo illustrates instrumentation for all three systems. These instruments are not included with the Box.) ...... MDLOPSK
MILO® Implant Surgical Protocol for Denture Stabilization

Milo® Implant treatment planning, drilling sequence and implant placement. 
A comprehensive patient interview, medical/dental history and a complete oral examination should be conducted. Diagnostic radiographs and mounted study models, if appropriate, should also be obtained.

1. Palpate the ridge in order to obtain a three-dimensional concept of the bone structure. Ridge calipers can be employed as needed. Clinical observation and the use of a dental probe is recommended to assess the quantity and quality of the soft tissue. CT Scan might be needed, at clinician's discretion.

This data will help to determine the location and depth of the surgical sites.

2. A Tissue Punch (RPCA3) may be used to create access to the site. When thin, porous or irregularly contoured bone is encountered, or when gingival manipulation or grafting is necessary, a full thickness mucoperiosteal flap is indicated.

3. A 1.5mm diameter Twist Drill (D15), initiates alignment and creates a precise initial site for the MILO® Implant (1000-2000rpm). Its sharp-angled cutting surface geometry breaches the crestal bone in preparation for the ø2.5mm Drill. A constant external flow of sterile irrigation should be applied during this step. Drilling is accomplished by using a delicate up-and-down pumping action. Laser-etched depth marks on the drill correspond to the length of the selected MILO® Implant.

4. Light, repeated, intermediate, vertical introduction of the Final Drill (D25), ø2.5mm, is used to widen the site (500-1000rpm). A constant external flow of sterile irrigation should be applied during this step.
5. Attach the **Contra-Angle Driver** (MDLCAD) to a slow speed high torque surgical contra-angle. The **MILO®** Implant is removed from its sterile packaging and transferred directly to the surgical site via this attachment driver that is engineered to slip over the **O-Ball Abutment**, firmly engaging the implant for direct delivery and seating.

6. Use the **Contra-Angle Attachment Driver** (MDLCAD) mounted on a slow speed handpiece (15rpm or less) to initiate insertion of the **MILO®** Implant. Placement by hand can be an alternative using the **Ratchet Driver** (MDLRD). The **Manual Wrench** (MDLMW) mounted on top of the **Ratchet Driver** may be used to provide additional torque.

7. A **Surgical Ratchet** (SRA) with a **Ratchet Driver** (MDLRD) is used to accomplish final seating. The **Ratchet Driver** is also available in a long shaft version (MDLRDL).

8. Implant seating is accomplished when either the **Ratchet Driver** (MDLRD) or the **Contra Angle Driver** (MDLCAD) is flush with the surrounding gingival tissue. At this point, the implant is securely in place, the gingival collar is in its proper relationship with the soft tissue and the **O-Ball Abutment** is at its correct height.
MILO Denture Stabilization

Chairside Pick-up of the MILO® denture retentive component (O-Ring encased in a Metal Housing).

Prior to the placement of implants, the patient’s denture should be stabilized.

A reline procedure, an equilibration or a new denture may be fabricated if necessary.

1. Transfer the position of the O-Balls to the tissue-bearing surface of the denture by marking the heads of the O-Balls with a soft lead pencil or capturing their impression by inserting a strip of soft silicone or soft wax inside the denture.

2. Using a 5mm Ø resin bur, relieve the opening around the abutment impressions or markings in the denture.

3. Try the denture in the patient’s mouth and verify that the appliance is seated passively while in maximum intercuspation. The O-Balls should not touch any part of the denture. Have the patient close into maximum intercuspation and observe that the denture is stable and fully seated at this point.

4. Snap a Retentive Housing (MDLMMH) assembly over each O-Ball. Try the denture in the patient’s mouth again and check to ensure that the appliance is fully seated while in maximum intercus- pation.
5. Remove the **Retentive Housings**. Punch holes in a rubber dam at each implant site and place the rubber dam over each abutment, leaving only the **O-Ball** heads exposed. Lubricate the O-Ball heads. These steps will prevent any acrylic lock-on.

6. Snap a **Retentive Housing Assembly** (MDLMMH) over each **O-Ball** in preparation for final seating.

7. Clean, wash and dry the denture. Fill the abutment recesses with self-cure resin. Paint a small amount of this material over each retentive housing. As soon as the acrylic in the denture becomes resistant to flow, seat the denture, keeping light, bilateral pressure on the occlusal surface.

8. While maintaining light bilateral pressure on the denture, have the patient close gently into maximum intercuspation.

9. Allow the acrylic to fully polymerize. After the acrylic has set, remove the denture and the rubber dam. Trim flash and fill any minor voids or discrepancies. Ensure that there are no sharp edges on the tissue-bearing surface of the denture.

10. Recheck the occlusion. Confirm proper occlusal contacts.
MILO® Implant Surgical Protocol for Fixed Restorations

All of the preliminary procedures that pertain to treatment planning, patient examination, gathering of diagnostic data and patient communication should be adhered to. The use of mounted diagnostic study models is strongly recommended. This will enable a preview of the maxilla and help to determine the most appropriate location and angulation of the osteotomy site.

1. A Tissue Punch (RPCA3) is used to cut the soft tissue at the osteotomy site. When thin, porous or irregularly contoured bone is encountered, or when gingival manipulation or grafting is necessary, a full thickness mucoperiosteal flap should be reflected.

2. A 1.5mm diameter Twist Drill (D15), initiates alignment and creates a precise initial site for the MILO® Implant (1000-2000rpm). A copious, external flow of sterile irrigation should be constantly maintained during this step. Drilling is accomplished by using an in-and-out pumping motion. Laser-etched depth marks on the drill correspond to the length of the selected MILO® Implant. In medium or dense bone the 2.5mm drill (D25) may be also indicated for the Fine Pitch MILO® Implant. For the Wide Pitch MILO® in medium or dense bone, the use of a ø 2.0mm final drill is sufficient.

3. The MILO® implant is removed from its sterile packaging and transferred directly to the surgical site via the Handpiece Adapter [Contra-Angle Attachment Driver (MDLCAD)]. This Driver is engineered to slip over the O-Ball Abutment, firmly engaging the implant for direct delivery and seating. A long-shaft Ratchet Driver (MDLRDL) can be used as alternate instrumentation, if hand placement is preferred over motor placement. A Manual Wrench (MDLMW) placed over the ratchet driver can be used for additional torque.
4. Use a slow speed handpiece (15 rpm or less) and the Contra-Angle Attachment Driver (MDLCAD) to initiate insertion of the MILO® Implant. Do not apply a torque higher than 35Ncm with the motor. The final higher torque required for final seating must be applied manually with the ratchet. It might be beneficial to use the Torque-Lock ratchet, (TL) to measure the final torque; a direct indication of the implant primary stability.

5. A Surgical Ratchet (SRA) with a Ratchet Driver (MDLRD) is used to accomplish final seating. The Ratchet Driver is also available in a long shaft version (MDLRDL) for clearance in narrow spaces.

6. Implant seating is accomplished when the Ratchet Driver (MDLRD) or the Contra Angle Driver (MDLCAD) is flush with the surrounding gingival tissue. In esthetic zones, the margin will be set sub-gingivally. At this point, the implant is securely in place, the gingival collar is in its proper relationship with the soft tissue and the O-Ball Abutment is at its correct height.
MILO® Abutment Preparation and Impression Prosthetic Techniques

The MILO® is an extremely versatile prosthetic system offering a straight, 15 degree and a plastic castable version. Abutments simply fit over the O-Ball assembly and convert the implant from removable to fixed prosthetic options.

1. Once the placement of the implant has been accomplished, the prosthetic component of choice is now ready for use. In this instance, the final restoration will be made using the MILO® Straight Cement-Over Abutment (MLSA).

2. A MILO® Pick-Up Impression Coping (MLT) is snapped over the O-Ball implant assembly.

3. A pre-formed custom tray is loaded while syringe material is expressed over the Pick-Up Coping and adjacent teeth. (A monophase impression material such as polyether is appropriate for this procedure.)

4. The loaded tray is placed and supported for the appropriate amount of time.
5. The final impression is removed and inspected. Examination should reveal that the coping will have been firmly picked up in the impression.

6. The MILO® Laboratory Analog (MLA) is inserted into the Impression Coping.

7. The working model is poured up. Appropriate MILO® Abutments are chosen for the restoration. They can be MILO® Straight Abutments (MLSA), MILO® Angulated 15 Degree Abutments (MLAA15) or MILO® Plastic Castable Abutments (MLPA).

8. The selected abutment is prepared and the final restoration is fabricated.

9. The abutment and restoration are returned from the lab. The abutment is placed in the mouth and, if clinically acceptable, is cemented with a Composite Resin Cement. DO NOT USE ANY OTHER TYPE OF CEMENT.

10. The final restoration is then placed and the fit, esthetics and proper occlusion are confirmed, both visually and radiographically. Upon confirmation of all parameters, the restoration is cemented.
Strength & Versatility:

Milo® is a true convertible implant with one-piece solid strength and two-piece versatility.

The one-piece design has far greater strength and fatigue resistance that a 3.75mm standard two-piece implant system. The Cement-Over Abutments™ (patented**) provide the clinician with an unsurpassed range of prosthetic options.

The graph on the left demonstrates the results of tests for Strength and Fatigue comparing the MILO® 3.0mm one-piece implant to a 3.75mm standard two-piece implant. Clearly, the MILO® is superior in both respects. Remarkable, but true.