INTRA-LOCK®
DENTAL IMPLANTS

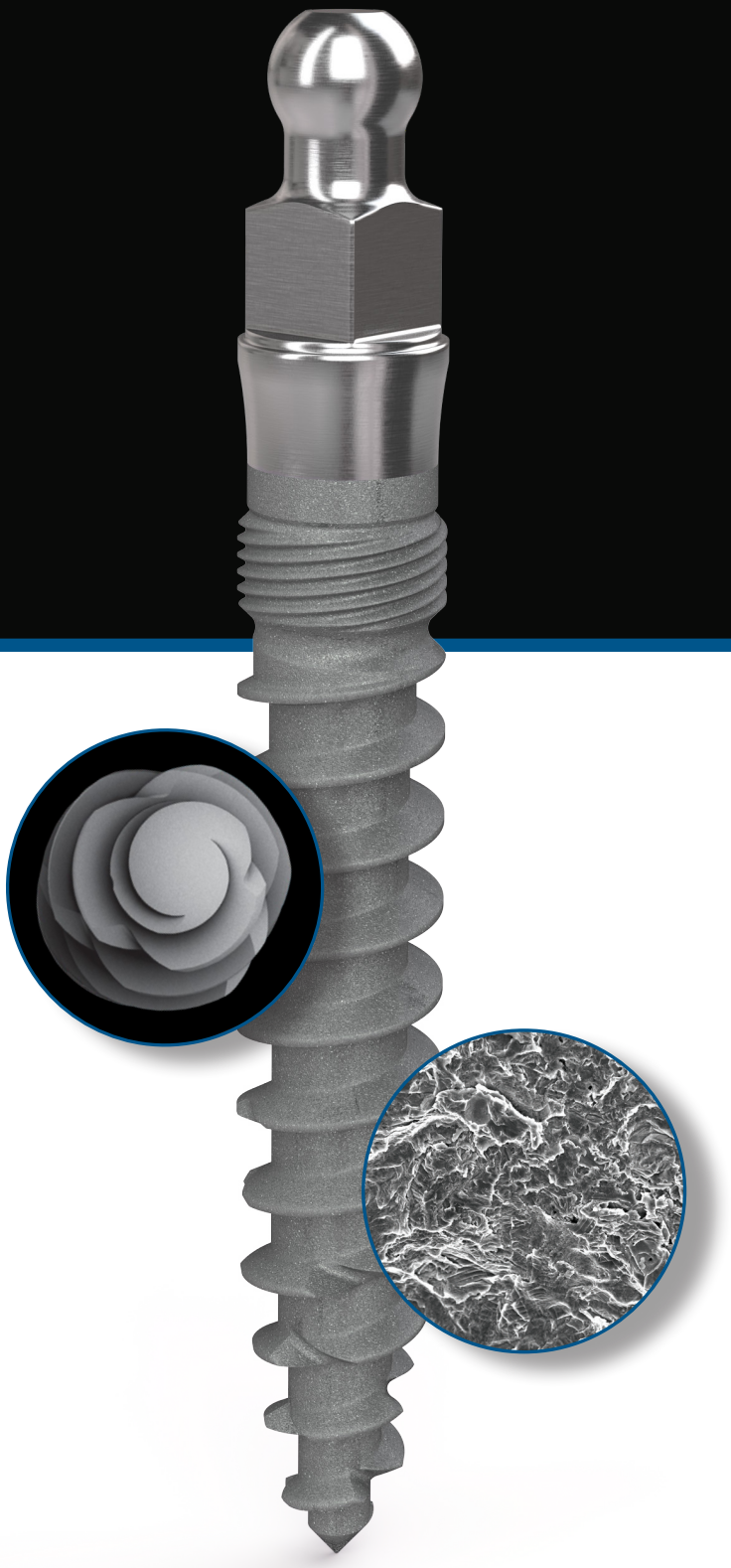
MDL®
SMALL DIAMETER IMPLANTS

Surgical Catalog & Manual

MDL implants

MDL® Implant System

The MDL® system supports popular restorative workflows, beyond the basic removable overdenture restoration. Cementable abutments are available in straight and angled versions, with standard and wide emergence profiles. The plastic abutment provides an option for custom cast bridges.



Blossom

The Blossom cutting design allows for the MDL implants to continually cut through bone with efficiency and minimal force. This minimizes trauma to the tissue, and evenly distributes the cutting force along the full body of the implant. This design functions to lower insertion torque while increasing implant stability and evenly dispersing bone chips along the threads of the implant.[2] This dispersion helps generate an autologous micro-graft at the implant site, which can promote faster osseointegration.[3]

ossean® SURFACE

The bio-active structure of the Ossean surface is developed by impregnating calcium phosphate into the implant surface, developing a fractal structure that mirrors its design at all levels of magnification.[4,5,6] This surface can facilitate fibril attachment, platelet deposition and osteoblast development.[7] These functions can favorably alter the genetic expression of localized cells and induce faster healing of the implants.[1]

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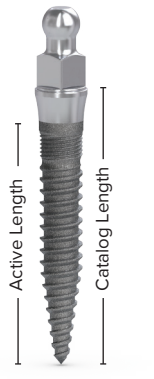
MDL® IMPLANTS

2.0mmØ MDL® Mini Drive-Lock

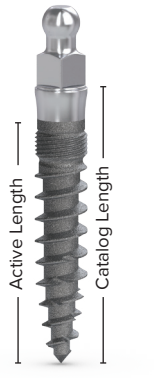


MDL2013Z

* Active Length is 2mm shorter than Catalog Length

Length	Product Description	Ref. No.
10mm	MDL Ø2.0mm Implant, 10mm	MDL2010Z
11.5mm	MDL Ø2.0mm Implant, 11.5mm	MDL2011Z
13mm	MDL Ø2.0mm Implant, 13mm	MDL2013Z
15mm	MDL Ø2.0mm Implant, 15mm	MDL2015Z
18mm	MDL Ø2.0mm Implant, 18mm	MDL2018Z
Single Implants (Packaged without Housing Cap)		
10mm	MDL Ø2.0mm Implant, 10mm	MDL2010SZ
11.5mm	MDL Ø2.0mm Implant, 11.5mm	MDL2011SZ
13mm	MDL Ø2.0mm Implant, 13mm	MDL2013SZ
15mm	MDL Ø2.0mm Implant, 15mm	MDL2015SZ
18mm	MDL Ø2.0mm Implant, 18mm	MDL2018SZ

2.5mmØ MDL® Mini Drive-Lock



MDL2513Z

* Active Length is 2mm shorter than Catalog Length

Length	Product Description	Ref. No.
10mm	MDL Ø2.5mm Implant, 10mm	MDL2510Z
11.5mm	MDL Ø2.5mm Implant, 11.5mm	MDL2511Z
13mm	MDL Ø2.5mm Implant, 13mm	MDL2513Z
15mm	MDL Ø2.5mm Implant, 15mm	MDL2515Z
18mm	MDL Ø2.5mm Implant, 18mm	MDL2518Z
Single Implants (Packaged without Housing Cap)		
10mm	MDL Ø2.5mm Implant, 10mm	MDL2510SZ
11.5mm	MDL Ø2.5mm Implant, 11.5mm	MDL2511SZ
13mm	MDL Ø2.5mm Implant, 13mm	MDL2513SZ
15mm	MDL Ø2.5mm Implant, 15mm	MDL2515SZ
18mm	MDL Ø2.5mm Implant, 18mm	MDL2518SZ

Surgical Kit

MDL-SK **MDL Surgical Kit**

· Packaged with reusable MDL instruments
· Provides storage for single-use instruments during surgery
· Locking design secures instruments during storage and sterilization

MDL-ST **MDL Surgical Tray** *(Instruments not included)*

MDL® Surgical Drills

Product Description	Ref. No.
MDL Single Patient Drill, Ø1.2mm	MDLSPDZ
MDL Single Patient Drill, Long	MDLSPDLZ

MDL drills are packaged sterile for single patient use.

Mini Drive-Lock Ratchet and Contra-Angle

Product Description	Ref. No.
Mini Drive-Lock Contra Angle Driver	MDLCADZ
MDL/MILO Ratchet Driver	MDLRDZ
Mini Drive-Lock Ratchet Driver, Long	MDLRDLZ

Individual Components

Product Description	Ref. No.
Ratchet	R-4MM

Product Description	Ref. No.
Hand Wrench	HW-4MM

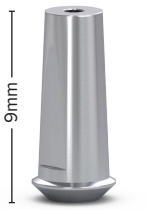
Product Description	Ref. No.
Rotary Tissue Punch Contra-Angle Ø3mm	RPCA3Z

Healing Cap

Product Description	Ref. No.
MILO Healing Cap	MLHCZ

MDL® Cement-Over™ Abutments

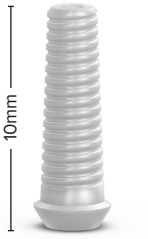
In addition to denture conversions, Cement-Over™ abutments provide the clinician with an expanded range of prosthetic options. They can be prepared extra-orally and simply fit over the O-Ball Assembly. Once cemented in place with resin cement, abutment and implant form one unit. An analog and impression coping complements the system.



MDLSAZ

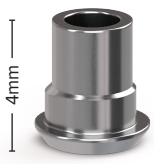
MDLAA15Z

WCAZ



MDLPAZ

MDLSAPZ



MDL Cement-Over™ Abutments

Product Description	Ref. No.
Cementable Abutment	MDLSAZ
15° Cementable Abutment	MDLAA15Z
Wide Cementable Abutment	WCAZ
Castable Abutment	MDLPAZ
Straight Abutment, PEEK	MDLSAPZ

Ti Core Abutments

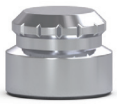
Product Description	Ref. No.
Ti Core for MDL Implants	MDLTICOZ

Metal Housing with O-Ring

Height: 3.2mm
Width: 3.8mm

MDLMMHZ

Height: 3.6mm
Width: 4.7mm



MDLMHZ

Product Description	Ref. No.
MDL/MILO Micro Metal Housing w/ O-Ring	MDLMMHZ
MDL/MILO Metal Housing w/ O-Ring	MDLMHZ

O-Ring Replacements

Outer ø: 3.8mm
Inner ø: 1.8mm

MDLMOR10Z

Outer ø: 4.7mm
Inner ø: 1.8mm

MDLORZ

Product Description	Ref. No.
MDL/MILO Micro O-Ring Replacement (10 pieces)	MDLMOR10Z
MDL/MILO Replacement O-Ring (1 piece)	MDLORZ

Impression Coping

Product Description	Ref. No.
MDL Impression Coping	MDLTZ

Laboratory Analog

Product Description	Ref. No.
MDL Laboratory Analog	MDLAZ

Surgical & Restorative Protocols

This surgical manual serves as a reference for using the MDL implants and surgical instruments. It is intended solely to provide instructions on the use of Intra-Lock products. It is not intended to describe the methods or procedures for diagnosis, treatment planning, or placement of implants, nor does it replace clinical training or a clinician's best judgment regarding the needs of each patient. Intra-Lock strongly recommends appropriate training as a prerequisite for the placement of implants and associated treatment.

The procedures illustrated and described within this manual reflect idealized patient presentations with adequate bone and soft tissue to accommodate implant placement. No attempt has been made to cover the wide range of actual patient conditions that may adversely affect surgical and prosthetic outcomes. **Clinician judgment as related to any specific case must always supersede any recommendations made in this or any Intra-Lock literature.**

Before beginning any implant surgical procedure with Intra-Lock implants:

- Read and understand the Instructions for Use that accompany the products.
- Clean and sterilize the surgical tray and instruments per Instructions for Use.
- Become thoroughly familiar with all instruments and their uses.
- Study surgical kit layout and iconography.
- Design a surgical treatment plan to satisfy the prosthetic requirements of the case.

Indications

MDL implants are indicated for long-term maxillary and mandibular tissue-supported denture stabilization. Multiple implants should be used and may be restored after a period of time or placed in immediate function.

Surgical Protocol

1) Breach the gingival tissue and periosteum using light, repeated vertical introduction of the 1.2mm pilot drill (MDLSPDZ) at a drilling speed of 1200 RPM. Copious sterile saline irrigation is recommended. Drilling depth is approximately one third of the implant length, with care taken to breach the cortical plate.
Note: Multiple MDL implants must be placed with a minimum of 3mm edge-to-edge spacing between each implant.

2) MDL implants are packaged suspended in a depth specific vial to facilitate a no-touch delivery and placement using Drive-Lock technology. The implant driver (MDLCADZ) is engineered to slip over the o-ball assembly, firmly engaging the implant for direct delivery and initial seating.

3) Using a slow speed, high torque handpiece, begin inserting the MDL implant at a speed of 15 RPM or less. The MDL implant has a sharp, apical guiding point to initiate self-tapping, threading and expanding the bone at the same time. The use of an electric motor with a torque-limiting feature set to 35 Ncm is recommended. A torque wrench and rachet driver (MDLRDZ) can also be used to determine the torque resistance of the MDL implant.

4) Once 35 Ncm of torque is achieved, finish seating the MDL implant with the torque wrench or a rachet (R-4MM). Small incremental turns with a pause between each turn takes advantage of the viscoelastic nature of bone. The MDL implant is fully seated when the shoulder of the collar is flush with the gingiva.

Overdenture Stabilization Restorative Protocol

1) For chairside pickup of the MDL denture housing cap, transfer the position of the implant o-ball connections to the tissue bearing surface of the denture by marking the o-balls with a soft lead pencil or capturing their impression with a strip of soft silicone or wax inside the denture.

2) Using a resin bur, relieve the opening around the o-ball impressions or lead 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 properly equilibrated at this point.

4) Snap a housing assembly (MDLMMHZ) over each implant o-ball connection. Try the denture in the patient's mouth again and ensure that the appliance is seated passively while in maximum intercuspation.

5) Remove the housing assembly and punch holes in a rubber dam at each implant site. Place the rubber dam over each implant o-ball connection, leaving on the o-ball heads exposed. Lubricate the o-ball heads to prevent any acrylic lock-on.

6) Snap a housing assembly over each o-ball in preparation for the 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 housing assembly. As soon as the acrylic in the denture becomes resistant to flow, seat the denture. Keep light bilateral pressure on the occlusal surface of the denture and have the patient close gently into maximum intercuspation.

8) 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.

Cement-Over Abutment Restorative Protocol

1) Place an MDL impression coping (MDLTZ) over each implant o-ball connection.

2) Load an impression tray, preferably with a monophase impression material. The impression tray is placed in mouth over the impression copings for the amount of time recommended by the impression material manufacturer.

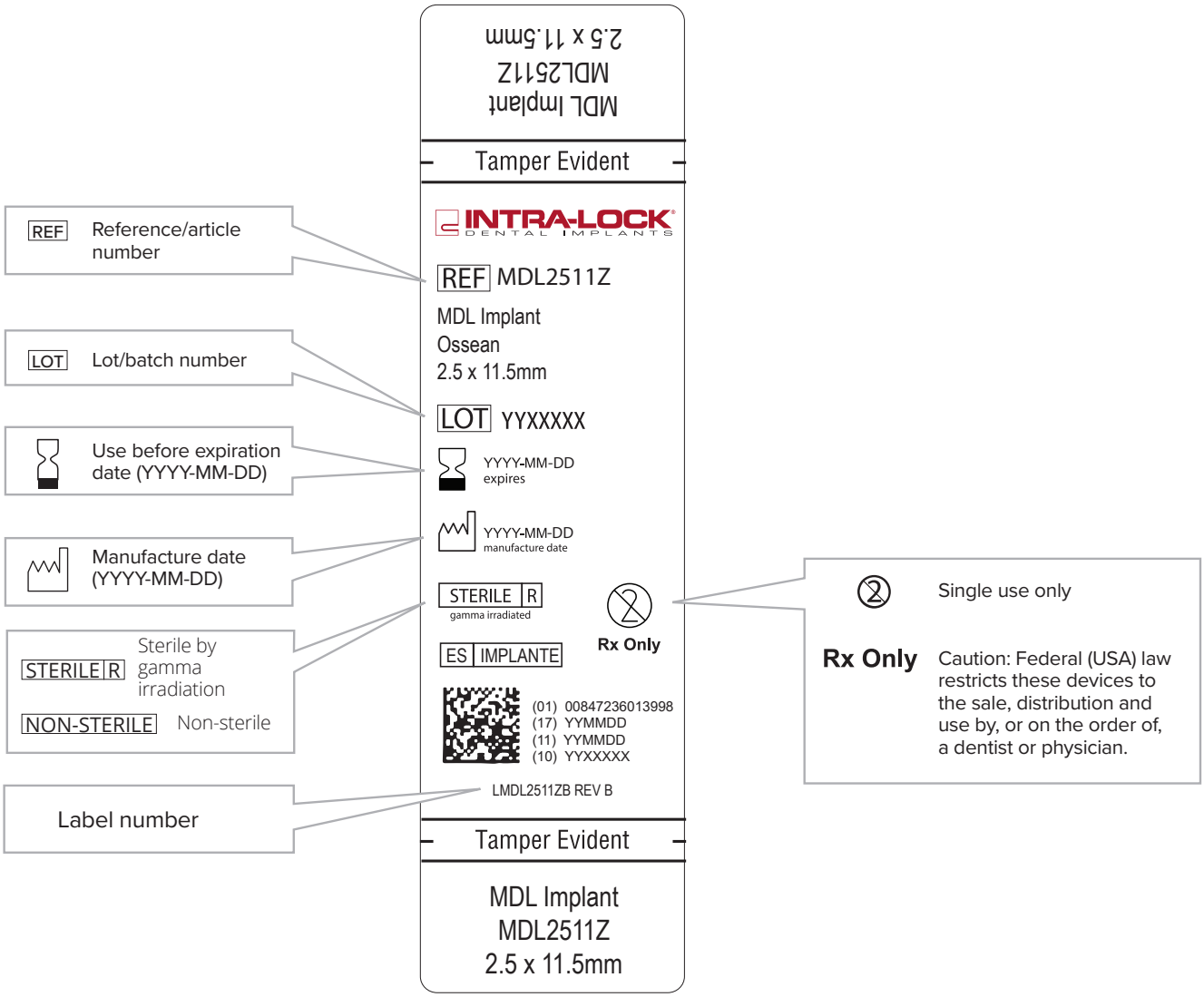
3) When removing the impression tray, the impression copings will be picked up in the impression material. Insert the MDL analogs (MDLAZ) into the captured impression copings.

4) Pour a working model either in the dental office or laboratory. Using the model, prepare and index the appropriate MDL Cement-Over abutment.

5) Upon delivery of the prosthesis, the abutments are cemented over their respective implant o-ball connections with resin cement (e.g. 3M RelyX Unicem 2 Automix Self-adhesive Resin Cement). Use only resin cement for this step. The prosthesis is then place and the fit, occlusion and esthetics are confirmed by clinical and radiographic examinations. Upon satisfaction of all parameters, cement the prosthesis into place with temporary cement. A metal reinforced bridge is recommended for rigidity.

Symbol Descriptions for Product Labeling

The example labeling below is to demonstrate content and symbology, and may differ on individual product labeling.



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DENTAL IMPLANTS

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