

Lorenz® Plating System LactoSorb®

Resorbable Fixation



BIOMET[®]
MICROFIXATION

One Surgeon. One Patient.™

LactoSorb® SE The Proven Leader In Resorbable Technology



A Thoroughly Proven Product

Anticipation and Innovation. These two qualities have made Biomet Microfixation an industry leader. Founded by Walter Lorenz more than thirty years ago, Biomet Microfixation offers instrumentation, plating systems and related products for a wide range of surgical procedures.

Among our most widely known and used products is LactoSorb® SE. First introduced in 1996, the LactoSorb plating system represented a major step forward in craniomaxillofacial fixation. Over ten years later with no change to the original formulation, the LactoSorb plating system remains the most thoroughly proven product of its kind.

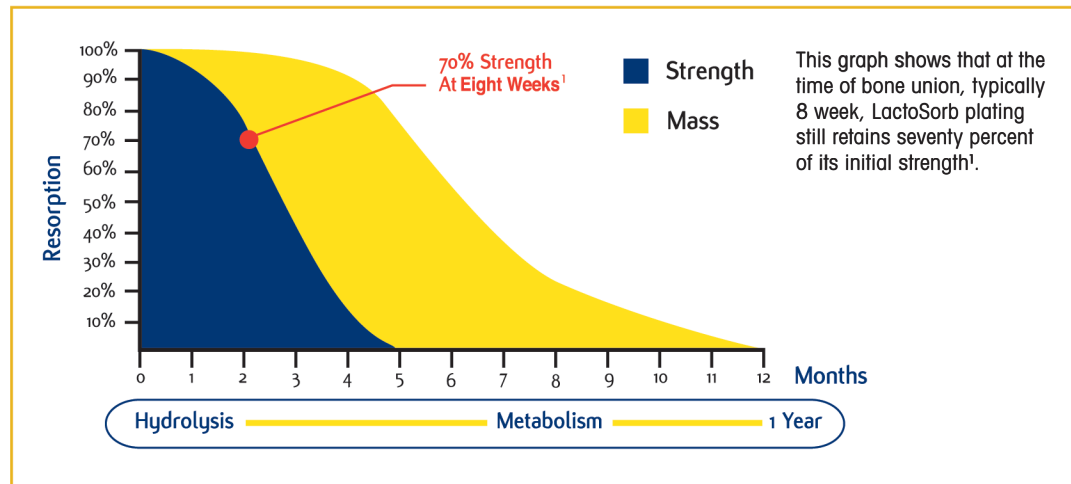
More Than 50,000 Case Since 1996

Since its introduction, LactoSorb has been used successfully in more than 50,000 craniomaxillofacial cases. The extensive clinical history of LactoSorb has resulted in its acceptance by an ever growing number of surgeons.



Resorption in Approximately One Year or Less

At initial placement, LactoSorb is comparable to that of titanium plating and it retains approximately 70% of its strength at eight weeks, allowing for complete osseous union in the craniomaxillofacial skeleton¹.



The Science Behind Bio-Resorbable Polymers

Biodegradable polymers are designed to degrade in the human body via hydrolysis. The choice of an appropriate building block for a biodegradable polymer is governed by ease of consumption by macrophages to prevent any adverse reaction. The choice of the building block has a strong influence on the mechanical properties and resorption profile. Moreover, the addition and amount of a second building block, in the network of the main building block, allows for better control of both material properties and resorption profile. Therefore, LactoSorb[®] (82% poly L-lactic acid and 18% poly glycolic acid) is not the same as other copolymers of L-lactic acid and glycolic acid with a different composition.

It is important to note that when comparing resorbable polymers with similar compositions, the mechanical properties and resorption profile of the two polymers could still be very different due to different processing techniques used in their manufacture. The use of highly specialized processing techniques to induce both crystalline and amorphous characteristics, combined with a proprietary copolymer ratio and over a decade of clinical history, makes LactoSorb an ideal plating system that provides the optimum balance of mechanical characteristics and resorption profile.

Indications For Use

- Infant craniofacial surgery
- Pediatric reconstructive procedures
- Pediatric mid-face and craniofacial trauma
- Craniotomy flap fixation
- Brow-lift procedures
- Orbital floor fractures
- Bone-graft procedures in the mid-face, mandible or craniofacial skeleton
- Trauma and reconstructive procedures of the midface or craniofacial skeleton, including frontal, parietal, temporal, sphenoid and occipital bones
- Fractures of the maxilla, zygoma, zygomatic arch, orbital rim, frontal sinus wall, nasal, ethmoid and lacrimal bones
- Iliac crest graft cover
- Mandibular osteotomies
- Tumor reconstruction in the mid-face or craniofacial procedures
- Lefort fractures (I, II, III)

Clinical Advantages

LactoSorb® plating achieves predictable resorption in approximately twelve months^{2,3}, resolving a wide range of issues for both the patient and the clinician. While this technology is primarily used for pediatric patients, it is also highly effective in adolescent and adult cases.

Patient's Perspective

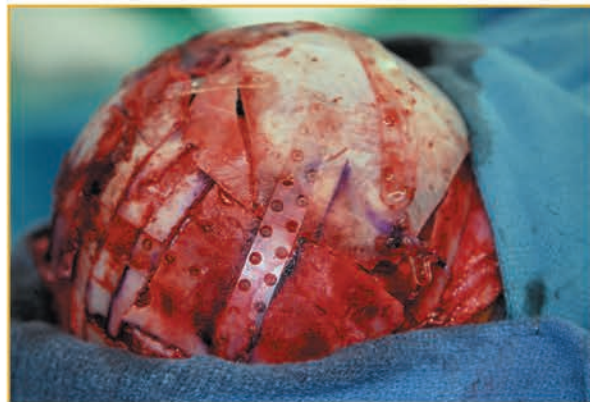
- Decreases implant palpability and may resolve temperature sensitivity issues
- Decreases the possibility of growth restriction and screw migration in pediatric patients
- Low incidence of inflammatory reactions or infections as reported in a pediatric study⁴

Clinical Perspective

- Predictable resorption of plates and screws by approximately twelve months post-op^{2,3}
- Appropriate plate and screw strength throughout the bone healing process
- Ability to eliminate the need for a second surgery in many instances



Pre-operative nine month-old male with deformational occipital plagiocephaly



Intra-operative view of occipital reconstruction with plate fixation



Five year post-operative result

The LactoSorb® SE delivery system is a streamlined surgical system designed to offer surgeons and their O.R. staff remarkable ease of use while enhancing overall efficiency during the surgical procedure.

Convenient Screw Packaging

- Screws are pre-packaged in cartridges that can be inserted into a screw tray for easy driver insertion
- Cartridges available with 1, 2, 4 or 10 screws

Your Choice Of Screw Types

The LactoSorb® SE system offers surgeons a choice of screw types and screw delivery systems. Surgeons may select from either threaded or push screws and from torque limited or direct drive systems. Both systems offer screws in 1.5mm, 2.0mm, 2.5mm and 2.8mm sizes.



Hex Head Screws

- Unique design may help prevent damage to screw from over tightening
- Hex head automatically separates from head of screw when appropriate torque is reached
- Hex head is retained securely by driver then is easily expelled after use
- If required, screw can be further tightened using the DH Driver after hex head separation



Direct Drive Screws

- Screw design is more similar to that of traditional titanium screws
- Prongs in driver fit into screw head indentations to assure positive retention and driving
- Surgeons experience more direct control of torque during insertion



Push Screws

- 2.0mm Endobrow push screw available for browlift procedures
- No tapping required; Simply drill and push in screw

1.5mm Implants



L Plate, Right
915-2424



L Plate, Left
915-2425



Square Plate
915-2426



6-Hole Plate, Curved
915-2427



T Plate
915-2420



Y Plate
915-2421



X Plate
915-2422



X Plate, Extended
915-2423



4-Hole Plate,
Straight
915-2413



4-Hole Plate,
Straight, Extended
915-2414



6-Hole Plate,
Straight
915-2415



6-Hole Plate,
Straight, Extended
915-2416



8-Hole Plate,
Straight
915-2417



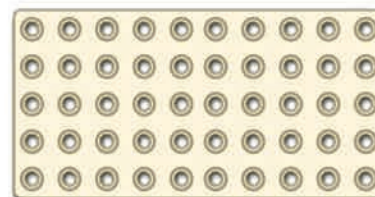
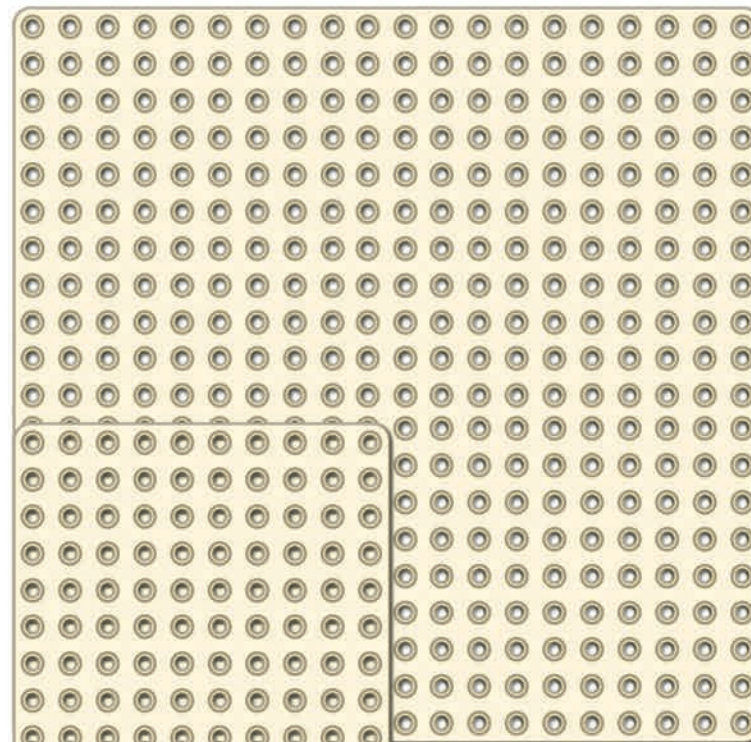
8-Hole Plate, Straight, Extended
915-2418



20-Hole Plate, Straight
915-2419



2x19-Hole Plate, Straight
1mm thick
915-2429



Mesh Panels
100mm X 100mm
20x20 Hole
915-2430

50mm X 50mm
10x10 Hole
915-2412

25mm X 50mm
5x10 Hole
915-2411

25mm X 25mm,
5x5 Hole
915-2410

All .50mm thick

1.5mm Template Set
914-2001

Items not to scale. 0.5mm thick between rails. 0.9mm thick at rails.

Sheets

Part #	Description
Without pre-drilled holes	
915-2810	25 x 25mm Sheet .25mm thick
915-2812	50 x 50mm Sheet .25mm thick
915-2832	50 x 50mm Sheet .75mm thick
915-2834	100 x 100mm Sheet .75mm thick
With pre-drilled holes (no countersink)	
915-2815	25 x 25mm Sheet .25mm thick
915-2816	50 x 50mm Sheet .25mm thick
915-2817	100 x 100mm Sheet .25mm thick

Hex Head Screws

Part #	Description
●915-2314	1.5mm x 3mm Screws (2 pack)
●915-2324	1.5mm x 3mm Screws (4 pack)
●915-2344	1.5mm x 3mm Screws (10 pack)
●915-2315	1.5mm x 4mm Screws (2 pack)
●915-2325	1.5mm x 4mm Screws (4 pack)
●915-2345	1.5mm x 4mm Screws (10 pack)
●915-2316	1.5mm x 5mm Screws (2 pack)
●915-2326	1.5mm x 5mm Screws (4 pack)
●915-2346	1.5mm x 5mm Screws (10 pack)
●915-2317	1.5mm x 6mm Screws (2 pack)
●915-2318	1.5mm x 7mm Screws (2 pack)
●915-2319	1.5mm x 8mm Screws (2 pack)
Emergency	
●915-2300	2.0mm x 5mm Screws (2 pack)
●915-2301	2.0mm x 7mm Screws (2 pack)
●915-2302	2.0mm x 9mm Screws (2 pack)

Direct Drive Screws

Part #	Description
●915-2214	1.5mm x 3mm Screws (2 pack)
●915-2224	1.5mm x 3mm Screws (4 pack)
●915-2215	1.5mm x 4mm Screws (2 pack)
●915-2225	1.5mm x 4mm Screws (4 pack)
●915-2245	1.5mm x 4mm Screws (10 pack)
●915-2216	1.5mm x 5mm Screws (2 pack)
●915-2226	1.5mm x 5mm Screws (4 pack)
●915-2246	1.5mm x 5mm Screws (10 pack)
●915-2217	1.5mm x 6mm Screws (2 pack)
●915-2218	1.5mm x 7mm Screws (2 pack)
●915-2219	1.5mm x 8mm Screws (2 pack)
Emergency	
●915-2200	2.0mm x 5mm Screws (2 pack)
●915-2201	2.0mm x 7mm Screws (2 pack)
●915-2202	2.0mm x 9mm Screws (2 pack)

Push Screws and Drills

Part #	Description
915-2804	1.2mm x 50mm, 5mm Stop, J-notch Drill (Gold)
915-2805	1.25mm x 50mm, 5mm Stop J-Notch Drill (Black)

- 1.5mm Color Coding
- 2.0mm Color Coding

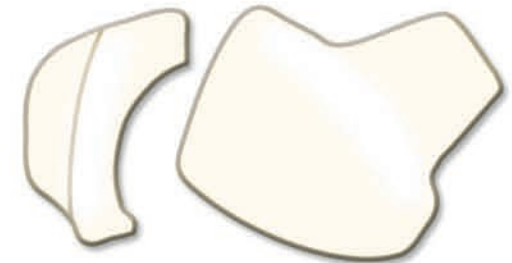
Items not to scale.

Orbital Floor Plates

Part #	Description
915-2807	Orbital sheet with template kit
915-2808	Pre-formed orbital floor plate, Left
915-2809	Pre-formed orbital floor plate, Right



Pre-formed Orbital Floor Plate, Left
915-2808



Pre-formed Orbital Floor Plate, Right
915-2809

0.25mm thick

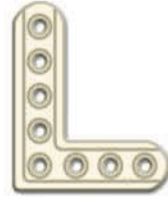
2.0mm Implants



L Plate, Right
915-2101



L Plate, Left
915-2102



L Plate, Right
Extended
915-2150



L Plate, Left
Extended
915-2151



X Plate
915-2105



X Plate,
Extended
915-2104



Y Plate
915-2106



T Plate
915-2107



6-Hole Plate
Curved
915-2103



6-Hole Plate
Curved
Extended
915-2114



4-Hole Plate
Straight
915-2110



4-Hole Plate
Straight
Extended
915-2111



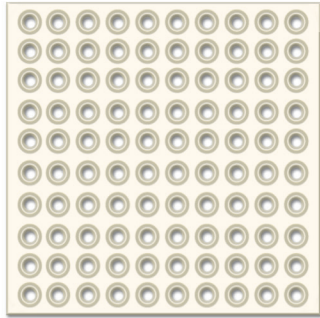
6-Hole Plate
Straight
915-2109



6-Hole Plate
Straight
Extended
915-2112

2.0mm Template Set
914-2002

Items not to scale. 0.6mm thick between rails. 1.40mm thick at rails.



Mesh Panel
42mm x 42mm
10x10 Hole
915-2100
1.14mm thickness



8-Hole Plate
Straight
915-2108



8-Hole Plate
Straight
Extended
915-2113



16-Hole Plate
Straight
915-2115

Items are not to scale.

Hex Head Screws

Part #	Description
● 915-2300	2.0mm x 5mm Screws (2 pack)
● 915-2301	2.0mm x 7mm Screws (2 pack)
● 915-2321	2.0mm x 7mm Screws (4 pack)
● 915-2302	2.0mm x 9mm Screws (2 pack)
● 915-2303	2.0mm x 11mm Screws (2 pack)
● 915-2304	2.0mm x 13mm Screws (2 pack)
● 915-2305	2.0mm x 15mm Screws (2 pack)
● 915-2306	2.0mm x 17mm Screws (2 pack)

Emergency

● 915-2307	2.5mm x 5mm Screws (2 pack)
● 915-2308	2.5mm x 7mm Screws (2 pack)
● 915-2309	2.5mm x 9mm Screws (2 pack)
● 915-2310	2.5mm x 11mm Screws (2 pack)
● 915-2311	2.5mm x 13mm Screws (2 pack)
● 915-2312	2.5mm x 15mm Screws (2 pack)
● 915-2313	2.5mm x 17mm Screws (2 pack)
● 915-2373	2.8mm x 11mm Screws (1 pack)
● 915-2374	2.8mm x 13mm Screws (1 pack)
● 915-2375	2.8mm x 15mm Screws (1 pack)
● 915-2376	2.8mm x 17mm Screws (1 pack)

Endobrow Push Screws and Drills

Part #	Description
● 915-2333	2.0mm x 5mm Push Screws (1 pack)
● 915-2336	2.0mm x 5mm Push Screws (2 pack)
● 915-3008	1.8mm x 60mm, 5mm Stop, Hand Drill
● 915-3009	1.8mm x 50mm, 5mm Stop, J-Notch Drill

- 2.0mm Color Coding
- 2.5mm Color Coding



Direct Drive Screws

Part #	Description
● 915-2200	2.0mm x 5mm Screws (2 pack)
● 915-2201	2.0mm x 7mm Screws (2 pack)
● 915-2221	2.0mm x 7mm Screws (4 pack)
● 915-2202	2.0mm x 9mm Screws (2 pack)

Emergency

● 915-2207	2.5mm x 5mm Screws (2 pack)
● 915-2208	2.5mm x 7mm Screws (2 pack)
● 915-2209	2.5mm x 9mm Screws (2 pack)



Instrumentation



Plate Holding Forceps
01-9095



Plate/Wire Cutter
14cm, 1.0/1.5mm
01-7172



LactoSorb® SE Handle
915-3002



LactoSorb® SE Container
Capacity to hold: 2 screw drivers, taps,
tap handles, templates, twist drills
915-3000



Endobrow Lift Kit
915-1006



Storage Cart
915-1500

Hex Head Drivers



LactoSorb® Screw Driver
915-2002



1.5mm DH Driver
Screw Remover
915-2084

2.0/2.5 DH Driver
Screw Remover
915-2003

Direct Drive Blades



Direct Driver, Short
915-2451

Direct Driver, Long
915-2453



LactoSorb® SE Water Bath
120v Water Bath 915-4005 240v Water Bath 915-4010 Sterile Drape 915-3006

Endobrow Lift Kit Includes:

- 915-1005 Container Only (1)
- 915-3002 LactoSorb® Handle (2)
- 915-3007 LactoSorb® Hex Head Driver (1)
- 915-3008 1.8mm x 60mm, 5mm Stop, Hand Drill (2)



LactoSorb® Air Activated Heat Source
Single 915-2055 5-Pack 915-2057



LactoSorb® SE
Heat Contouring Pen
915-3100

1.5mm Drills and Taps

Twist Drill
1.1mm X 50mm
5mm stop
915-2015

Twist Drill
1.1mm X 50mm
7mm stop
915-2017



Hand Drill
1.1mm X 60mm
5mm stop
915-2035



1.5mm Adjustable Stop
Bone Tap
915-2080



1.5mm Adjustable
Self-Drilling Tap
915-2085

1.5mm Power Driver™
Self-Drilling Tap
915-2185

Items not to scale.

2.0mm Drills and Taps



Twist Drill
1.5mm X 50mm
11mm stop
915-2024



Twist Drill
1.7mm X
50mm
5mm stop
915-2025

Twist Drill
1.7mm X
50mm
7mm stop
915-2027

Twist Drill
1.7mm X
50mm
9mm stop
915-2029



Hand Drill
1.7mm X 60mm, 5mm stop
915-2045



Twist Drill
1.7mm X 115mm, 20mm stop
915-2040



Self-Drilling Tap
2.0mm X 5mm
915-2074



2.0mm Extended
Bone Tap, 20mm stop
915-2011



2.0mm Adjustable
Stop Bone Tap
915-2070



2.0mm Power Driver™
Self-Drilling Tap
915-2175

2.0mm Adjustable
Self-Drilling Tap
915-2075

2.5mm Drill and Taps



Twist Drill
2.2mm X 105mm
20mm stop
915-2047



2.5mm Bone Tap
14mm stop
915-2014



2.5mm Extended
Bone Tap
20mm stop
915-2016



2.8mm Extended
Bone Tap
20mm stop
915-2028

What fascinates you about the body is also what drives us. That's why we're always pushing the boundaries of engineering to make products that help you keep the human form as glorious as it was intended. To learn more about our breadth of products, call 800-874-7711 or visit us online at biometmicrofixation.com. We'd love to join you in a conversation about the future.

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For more information on the LactoSorb[®] Plating System please contact us at:

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1. Pietrzak WS, Caminear DS, Perns SV. Mechanical Characteristics of an Absorbable Copolymer Internal Fixation Pin. J Foot and Ankle, Volume 41, 2002;379:388. 2. Eppley BL, Reilly M. Degradation Characteristics of PLLA-PGA Bone Fixation Devices. J Craniofacial Surgery, Volume 8, March 1997;116:120. 3. Pietrzak WS, Eppley BL. Stability of Craniofacial PLLA/PGA Copolymer Bioabsorbable Screws. J Craniofacial Surgery, Volume 17, March 2006;331:336. 4. Goldstein JA, Quereshty FA, Cohen AR. Early experience with biodegradable fixation for congenital pediatric craniofacial surgery. Journal of Craniofacial Surgery