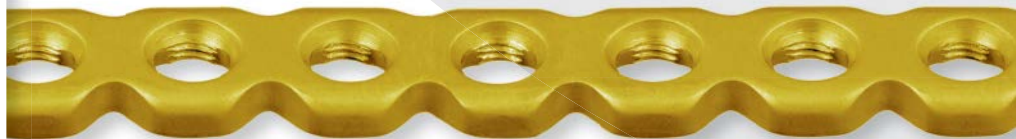
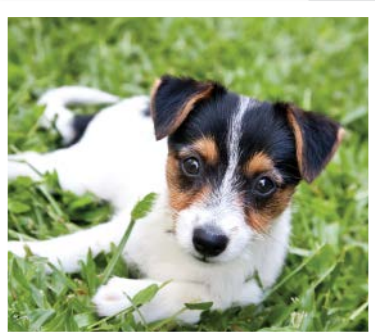


Contourable in three dimensions

Locking Reconstruction and Mini Plate System

Surgical Technique



PART OF THE *Johnson & Johnson* FAMILY OF COMPANIES

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Locking Reconstruction and Mini Plate System

Contourable in three dimensions

2.0 mm Mini Locking Plate and 2.4 mm Titanium Locking Reconstruction Plate System for the mandible and maxilla:

- Low-profile plating system
- Titanium implants
- Self-tapping screws

The Locking Design Provides:

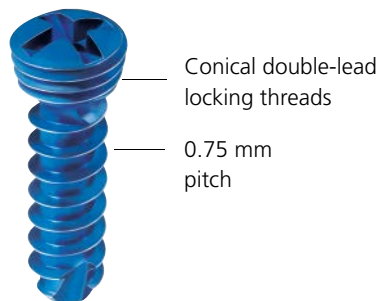
- Increased construct stability
- Decreased risk of screw back-out and subsequent loss of reduction



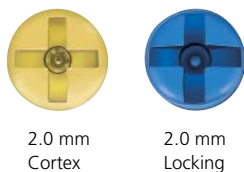
2.0 mm Locking Screws and Plates

2.0 mm Locking Screws

- PLUSDRIVE® Recess
 - Improves retention with screwdriver blade¹
 - Reduces stripping²
 - Provides off-axis screw placement ability
- Color-coding assists in locking screw size identification: 2.0 mm locking screw is blue
- Emergency screw is available



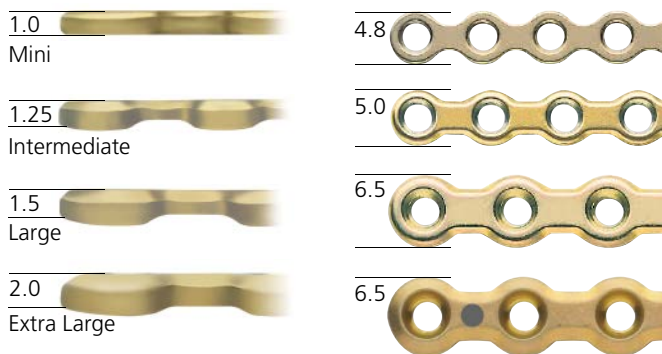
PLUSDRIVE® Recess



Threaded plate holes accept both nonlocking and locking 2.0 mm PLUSDRIVE Screws. Nonlocking screws allow a maximum of 13°–18° of angulation from central axis.

2.0 mm Plates

- Four profiles accommodate a wide range of indications
- Design facilitates rapid three-dimensional contouring for improved anatomic fit
- Manufactured from commercially pure titanium
- Black dot etched on plate identifies extra large plate



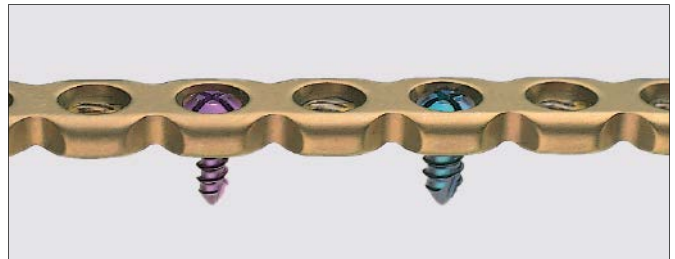
References:

1. Beale, C. Axial Retention Test. October 5, 2004. MT04-345.
2. Beale, C. PlusDrive Blade 2.4mm Cam-Out Comparative Test. December, 20, 2004. MT04-443.

2.4 mm Locking Screws and Plates

2.4 mm and 3.0 mm Locking Screws

- Cruciform Recess
- Color-coding assists in locking screw size identification:
2.4 mm locking screw is purple, the 3.0 mm locking screw is aqua



Cruciform Recess



2.4 mm
Locking



2.4 mm
Cortex



3.0 mm Locking
(can be used as an
emergency screw)

2.4 mm Plates

- Choice of 2.4 mm and 3.0 mm locking screws or 2.4 mm cortex screws
- Closely spaced holes optimize fixation in minimal bone space
- Design facilitates rapid three-dimensional contouring for improved anatomic fit
- Profile: 2.5 mm thick and 8 mm width
- Manufactured from commercially pure titanium



Preparation

1. Expose and reduce fracture

After completing the preoperative plan, expose the fracture or osteotomy site. Reduce as required.

2. Select and prepare implants

Instrument

391.95	Plate Cutting Forceps for 1.5 mm–2.7 mm plates
--------	---



Select the appropriate plate depending on the indication. Orient the plate so the topside (indicated by laser etch) is facing out. Cut to length, if necessary.

Contour Plate

3. Contour the plate

Instrument

329.142 Combination Bending Pliers

Contour the plate to match the anatomy.

Note: When using the combination bending pliers for two-plane bending, the in-plane bend must be performed first.

3a. Perform in-plane bend

Perform in-plane bend as shown in figure 3a.

3b. Perform out-of-plane bending

Perform out-of-plane bend as shown in figure 3b.



3a. In-plane bending



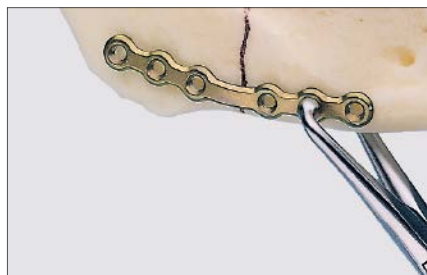
3b. Out-of-plane bending

4. Position the plate

Instrument

398.66 Plate Holding Forceps*

Place the plate over the fracture of osteotomy site. Use the plate holding forceps to secure the plate to the bone, if desired.



*Also available.

Insert Screws

5. Drill the first hole

Instruments for 2.0 mm plates

03.111.010	1.5 mm Threaded Drill Guide
310.16	1.5 mm Drill Bit
323.204	2.0 mm/2.4 mm Universal Drill Guide

Instruments for 2.4 mm plates

310.510	1.8 mm Drill Bit
310.530	2.4 mm Drill Bit
323.204	2.0 mm/2.4 mm Universal Drill Guide
397.441	1.8 mm Threaded Drill Guide, for 2.4 mm locking screws
397.442	2.4 mm Threaded Drill Guide, for 3.0 mm locking screws



Select the appropriate drill guide (universal or threaded) based on which screws are being used. When a locking screw is placed, a threaded drill guide must be used for guiding the drill bit in the proper direction. The universal drill guide is used to place cortex screws.

Note: If both locking and cortex screws are used in the plate, the following precautions are necessary:

- 1. Because cortex screws pull the bone to the plate, contouring of the plate is required at the screw hole(s) in which cortex screws are placed.**
- 2. If cortex screws are used in combination with locking screws, cortex screws must be inserted and fully tightened prior to inserting locking screw(s).**

When treating fractures of the maxilla and mandible, accurate plate contouring is preferred regardless of what screws are used, as it improves the stability of the fixation and ensures that the implants lay adjacent to the bone.

6. Measure for screw length

Instrument for 2.0 mm/2.4 mm plates

319.11	Depth Gauge
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Use depth gauge to measure screw length.

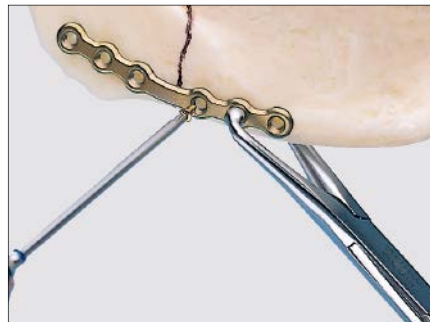
7. Insert screw

Instrument for 2.0 mm plates

311.005	Screwdriver Handle, hex coupling
313.252	1.5 mm/2.0 mm Screwdriver Blade, PLUSDRIVE, self-retaining, hex coupling

Instrument for 2.4 mm plates

313.928	2.0 mm/2.4 mm Cruciform Screwdriver Blade, self-retaining, hex coupling
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Insert the proper length screw through the plate and tighten until secure.

Technique tips for PLUSDRIVE Screws:

- To engage the PLUSDRIVE Recess Screw on the screwdriver blade, align the blade over the PLUSDRIVE Recess and slowly rotate it until the blade drops into the recess. Firmly press the blade to fully seat it in the screw
- To disengage the PLUSDRIVE Recess Screw, gently rock the screwdriver blade side-to-side to release the blade from the screw head

8. Drill and place the remaining screws

Module and Implants

Implant Module

60.116.541 Locking Reconstruction and Mini Plate Implant Module

(comes with purchase of instrument graphic case 60.116.540)



VPT4010.04 2.0 mm Titanium Mini Locking Plate (1.0 mm thick), 4 holes, narrow



VPT4010.06 2.0 mm Titanium Mini Locking Plate (1.0 mm thick), 6 holes, narrow



VPT4010.20 2.0 mm Titanium Mini Locking Plate (1.0 mm thick), 20 holes, adaption



VPT4011.06 2.0 mm Titanium Intermediate Locking Plates (1.25 mm thick), 6 holes



VPT4011.12 2.0 mm Titanium Intermediate Locking Plates (1.25 mm thick), 12 holes



2.0 mm Titanium Plates

VPT4013.06 2.0 mm Titanium Large Locking Plates
(1.5 mm thick), 3x3 holes



VPT4014.06 2.0 mm Titanium Large Locking Plates
(1.5 mm thick), 6 holes



VPT4014.12 2.0 mm Titanium Large Locking Plates
(1.5 mm thick), 12 holes



VPT4014.20 2.0 mm Titanium Large Locking Plates
(1.5 mm thick), 20 holes



VPT4015.12 2.0 mm Titanium Extra-Large Locking Plates
(2.0 mm thick), 12 holes



VPT4015.20 2.0 mm Titanium Extra-Large Locking Plates
(2.0 mm thick), 20 holes



Titanium Screws for 2.0 mm Locking Reconstruction Plates

2.0 mm Titanium Locking Screw, self-tapping, PLUSDRIVE

	Total Length (mm)
VST202.005	5
VST202.006	6
VST202.008	8
VST202.010	10
VST202.012	12
VST202.014	14
VST202.016	16
VST202.018	18



2.0 mm Titanium Cortex Screw, self-tapping, PLUSDRIVE

	Total Length (mm)
VST201.006	6
VST201.008	8



2.0 mm Titanium Cortex Screw, Coarse Pitch, self-tapping, PLUSDRIVE

	Total Length (mm)
VST201.010	10
VST201.012	12
VST201.014	14
VST201.016	16
VST201.018	18



2.4 mm Titanium Emergency Screw, PLUSDRIVE

	Total Length (mm)
VST203.006	6
VST203.008	8
VST203.010	10
VST203.012	12



2.4 mm Titanium Implants

2.4 mm Locking Reconstruction Plates

	Holes	Total Length (mm)
VPT4120.14	14	104
VPT4120.24	24	184



2.4 mm Titanium Cortex Screw, self-tapping, cruciform recess

	Total Length (mm)
VST211.008	8
VST211.010	10
VST211.012	12
VST211.014	14
VST211.016	16
VST211.018	18
VST211.020	20
VST211.022	22
VST211.024	24



2.4 mm Titanium Locking Screw, self-tapping, cruciform recess

	Total Length (mm)
VST212.008	8
VST212.010	10
VST212.012	12
VST212.014	14
VST212.016	16
VST212.018	18
VST212.020	20
VST212.022	22



3.0 mm Titanium Locking Screw, self-tapping, cruciform recess

	Total Length (mm)
VST311.008	8
VST311.010	10
VST311.012	12
VST311.014	14
VST311.016	16
VST311.018	18
VST311.020	20
VST311.022	22



Graphic Case and Instruments

Graphic Case

60.116.540 Locking Reconstruction and Mini Plate System
Graphic Case

(comes with implant module 60.116.541)



Instruments for Screw Insertion for 2.0 mm Plates

310.16 1.5 mm Drill Bit, quick coupling, 110 mm



310.19 2.0 mm Drill Bit



03.111.010 1.5 mm LCP Solid Threaded Drill Guide,
for 2.0 mm locking screws



313.252 1.5 mm/2.0 mm PLUSDRIVE Screwdriver
Blade, self-retaining, hex coupling, 96 mm



Instruments for Screw Insertion for 2.4 mm Plates

310.510 1.8 mm Drill Bit, quick coupling, 100 mm



310.530 2.4 mm Drill Bit, quick coupling, 100 mm



313.928 2.0 mm/2.4 mm Cruciform Screwdriver Blade, self-retaining, with hex coupling



397.441 1.8 mm threaded drill guide, short, for locking reconstruction plate (for 2.4 mm locking screws)



397.442 2.4 mm threaded drill guide, short, for locking reconstruction plate (for 3.0 mm locking screws)



Instruments for Both 2.0 mm and 2.4 mm Plates

311.005 Screwdriver Handle with hex coupling



319.11 Depth Gauge for Mini Screws



323.204 2.0 mm/2.4 mm Universal Drill Guide



Instruments for Plate Cutting and Contouring

391.95 Plate Cutting Forceps for 1.5 mm–2.7 mm plates

329.142 Combination Bending Pliers

Locking Reconstruction And Mini Plate Set (103.525)

Graphic Case

60.116.540 Locking Reconstruction and Mini Plate System Graphic Case (comes with implant module 60.116.541)

Instruments

03.111.010 1.5 mm LCP Solid Threaded Drill Guide, for 2.0 mm locking screws, 2 ea.

310.16 1.5 mm Drill Bit, quick coupling, 110 mm

310.19 2.0 mm Drill Bit, quick coupling, 100 mm

310.510 1.8 mm Drill Bit, quick coupling, 100 mm

310.530 2.4 mm Drill Bit, quick coupling, 100 mm

311.005 Screwdriver Handle with hex coupling

313.252 1.5 mm/2.0 mm Screwdriver Blade, PLUSDRIVE, self-retaining, hex coupling, 96 mm

313.928 2.0 mm/2.4 mm Cruciform Screwdriver Blade, self-retaining, with hex coupling

319.11 Depth Gauge for Mini Screws

323.204 2.0 mm/2.4 mm Universal Drill Guide

329.04 Bending Irons, for 2.7 mm and 3.5 mm plates (used together)

329.05 Combination Bending Pliers

329.142 Plate Cutting Forceps for 1.5 mm–2.7 mm plates

391.95 1.8 mm threaded drill guide, short (for 2.4 mm locking screws) 2 ea.

397.441 2.4 mm threaded drill guide, short (for 3.0 mm locking screws), 2 ea.

Bending Templates

For 2.0 mm Titanium Mini Locking Plates

329.528 20 holes, adaption

329.529 6 holes, narrow

For 2.0 mm Titanium Intermediate Plates

329.525 6 holes

329.527 12 holes

For 2.0 mm Large and Extra Large Plates

329.524 20 holes

329.526 3 x 3 holes

For 2.4 mm Locking Reconstruction Plates

329.40 37 holes, straight



2.0 mm Titanium Mini Locking Plate (1.0 mm thick)	
	Holes
VPT4010.04	4, narrow
VPT4010.06	6, narrow
VPT4010.20	20, adaption

2.0 mm Titanium Intermediate Locking Plates (1.25 mm thick)	
	Holes
VPT4011.06	6
VPT4011.12	12

2.0 mm Titanium Large Locking Plates (1.5 mm thick)	
	Holes
VPT4013.06	3x3
VPT4014.06	6
VPT4014.12	12
VPT4014.20	20

2.0 mm Titanium Extra-Large Locking Plates (2.0 mm thick)	
	Holes
VPT4015.12	12
VPT4015.20	20

2.4 mm Locking Reconstruction Plates	
	Holes
VPT4120.14	14
VPT4120.24	24

2.0 mm Titanium Cortex Screw, self-tapping, PLUSDRIVE, 5 ea.	
	Total Length (mm)
VST201.006	6
VST201.008	8

2.0 mm Titanium Cortex Screw, Coarse Pitch, self-tapping, PLUSDRIVE, 5 ea.	
	Total Length (mm)
VST201.010	10
VST201.012	12
VST201.014	14
VST201.016	16
VST201.018	18

2.0 mm Titanium Locking Screw, self-tapping, PLUSDRIVE, 5 ea.	
	Total Length (mm)
VST202.005	5
VST202.006	6
VST202.008	8
VST202.010	10
VST202.012	12

2.4 mm Titanium Cortex Screw, self-tapping, cruciform recess, 5 ea.	
	Total Length (mm)
VST211.008	8
VST211.010	10
VST211.012	12
VST211.014	14
VST211.016	16
VST211.018	18

2.4 mm Titanium Locking Screw, self-tapping, cruciform recess, 5 ea.	
	Total Length (mm)
VST212.008	8
VST212.010	10
VST212.012	12
VST212.014	14
VST212.016	16
VST212.018	18

3.0 mm Titanium Locking Screw, self-tapping, cruciform recess, 5 ea.	
	Total Length (mm)
VST311.008	8
VST311.010	10
VST311.012	12
VST311.014	14
VST311.016	16
VST311.018	18

Also Available

323.201	2.0 mm Universal Drill Guide
323.202	2.4 mm Universal Drill Guide
329.143	2.0 MLP Bender/Cutter
398.66	Plate Holding Forceps
60.116.541	Locking Reconstruction and Mini Plate Implant Module

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