

# Universal Neuro™ III

1.5mm Cranial fixation system



# Universal Neuro III



The Universal Neuro III module neatly contains a comprehensive selection of screws, low profile plates, skull base plates, dynamic mesh, and instrumentation.

## Unique Features:

### Low profile

Low profile height (0.4mm) with deeper countersinks, broader bars, and a smoother geometry.

### AXS screw

Optimized self-drilling AXS (axial stability) screws help with off-axis loading and insertion.

### Specialized plates

Specialized plates to reconstruct difficult skull base approaches with minimal plate modification.

### Color coding

Color coding of the modules and associated instrumentation provides ease of use for surgeon and staff.

You specialize in your patients.  
**We specialize in you.**

# Module

## Universal Neuro III module

The Universal Neuro III module neatly contains a comprehensive selection of skull base plates, low-profile plates, dynamic mesh, screws, and the instrumentation needed to fixate cranial bone flaps.

### Unique features:

- Addition of specialized plates to reconstruct difficult skull base approaches with minimal plate modification
- Optimized self-drilling screws with addition of 3mm option
- Unique burr hole cover design with added fixation hole and dynamic bar for ease of contouring
- 20% thinner plates\* with deeper countersink, broader bars, smoother geometry, and same stability
- Addition of ergonomic screwdriver handle
- Redesigned module with designated pockets for decreased plate stacking and ease of identification
- Customizable screw disc with screws of different lengths





# Storage options

## Universal Neuro III system: Storage and sterilization containers

The Universal Neuro III System features Half (not shown), Combined and Quarter size sterilization containers to accommodate a wide variety of options for your specific neurosurgical needs. In addition, there are 2D and 3D mesh storage options.

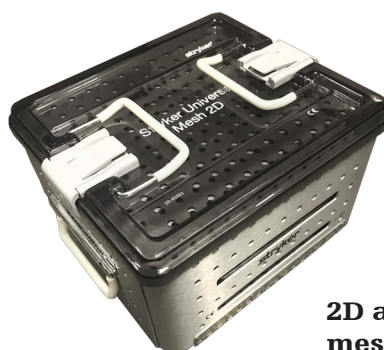


**Quarter size  
sterilization  
container**

**Combined size  
sterilization  
container**



**VariSpeed™  
sterilization  
container**



**2D and 3D  
mesh storage**

# Technology and innovations

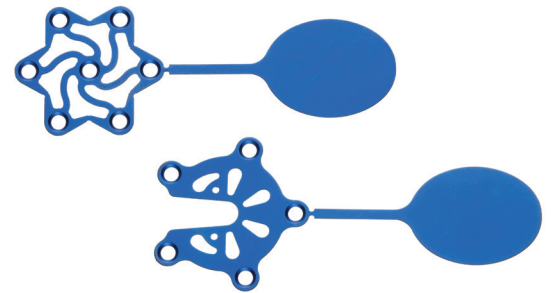
## Instrumentation

- Ergonomically shaped screwdriver handle and newly designed screwdriver blade for improved handling, allowing optimal blade-to-screw interface/retention and easier screw insertion



## Burr hole covers

- Unique burr hole covers with added fixation hole and dynamic bar design for ease of contouring; in addition to two new shunt plate options



## Lower profile plates

- 0.4mm profile height allows for rigid fixation of cranial flaps with decreased palpability
- Deeper countersink\* for a more flush plate/screw construct
- Select plates feature break-off tabs for easy handling and identification
- Comprehensive selection of implants including shunt, "dog-bone," gap, and box plates along with 5 sizes of burr hole covers offer numerous fixation options



## VariSpeed - battery powered screwdriver

- Touch sensors for continuous, variable speed control
- Forward and reverse capabilities
- Ergonomically balanced for both left and right hand use
- Acoustic Feedback to help ensure battery is attached and device is working properly
- Standby Mode to minimize power consumption and improve battery life
- Improved electrical components to protect against rigorous sterilization parameters and excessive heat



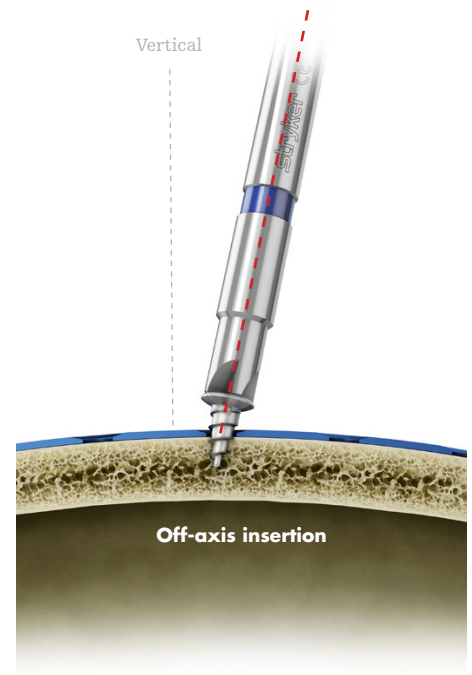
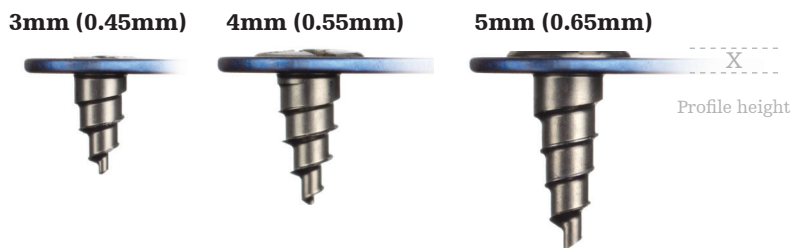
# Screws

## AXS - Axial stability screw

The latest iteration of the Universal Neuro screw continues to advance neurotechnology. A brand new head design provides surgeons with ease-of-use and performance.

### Unique features:

- Enhanced pick-up designed to minimize complications in loaded screwdriver hand-off from tech to surgeon, with optimized self-retention to allow reliable transport into OR field
- Self-centering feature facilitates off-axis insertion
- Low profile heights:
  - 4mm SD screw with blue plate - 0.55mm
  - 4mm SD screw with gold plate - 0.6mm



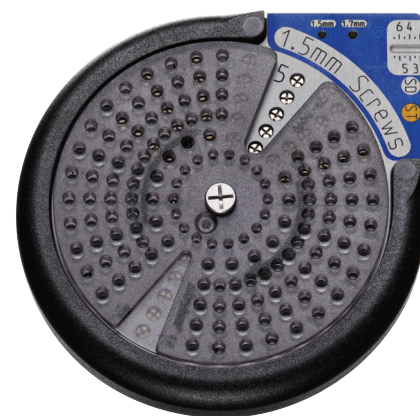
## Optimized self-drilling (SD) screws

- Addition of 3mm self-drilling screw provides lowest plate-to-screw profile option in UNIII system for minimal palpability
- Newly designed self-drilling screws require 25% less turns to fully insert\*
- 23% lower construct for decreased palpability\*
- 40% greater initial bite into bone for quicker insertion\*



## Customizable screw disc delivery system

- Customizable screw disc allows placement of 3, 4, and 5mm SD screws and/or 4, 5, 6mm ST screws in a single screw disc





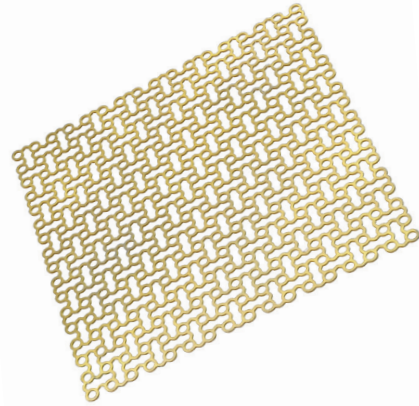
# Mesh

## Dynamic mesh

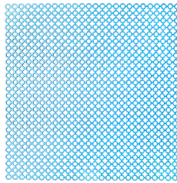
Dynamic mesh has optimized properties to facilitate controlled, three-dimensional contouring while maintaining adequate rigidity for bone defects of varied size and location. Dynamic mesh can be shaped to fit most three-dimensional bone surfaces without unwanted wrinkled or overlapped areas.

### Unique features:

- Standard (Gold - 0.60mm profile height) and Malleable Low Profile (Blue - 0.30mm profile height) designs
- Dedicated screw holes for many options in screw placement
- Easy to cut and accurately contour to anatomical structures
- Instrumentation for cutting



Hybrid



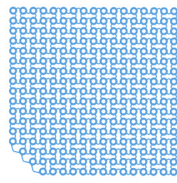
Thickness: 0.3mm

Gold



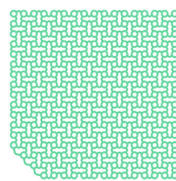
Thickness: 0.6mm

Light blue



Thickness: 0.3mm

Green



Thickness: 0.8mm

## 2D mesh

### Unique features:

- Countersink - designed to reduce palpability
- Smooth edge aids insertion
- MR conditional - allows diagnostics after implantation
- Variety of mesh types - strength vs malleability
- New 0.3mm Hybrid mesh - 3x stronger than 0.3mm Dynamic mesh<sup>1</sup>

## 3D mesh

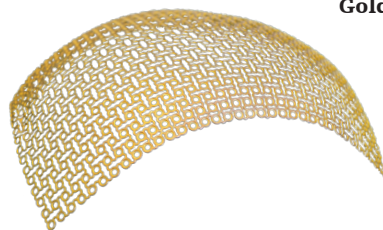
### Unique features:

- Countersink - designed to reduce palpability
- Has stiffness equivalent to golden 2D mesh<sup>2</sup>
- Used for open defects up to 70mm and muscle attachment
- Pre-formed minimizes bending effort to fit patient

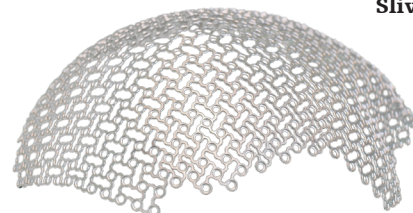
### Unique features:

- Countersink - designed to reduce palpability
- Increased stiffness, for increased patient protection, compared to 2D mesh<sup>2</sup>
- Used for open defects up to the size of the mesh and muscle attachment<sup>3</sup>
- Anatomically pre-formed minimizes bending to fit patient

Gold



Sliver

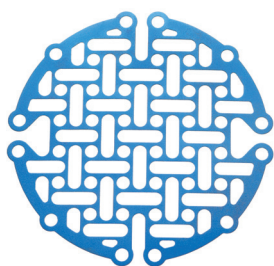
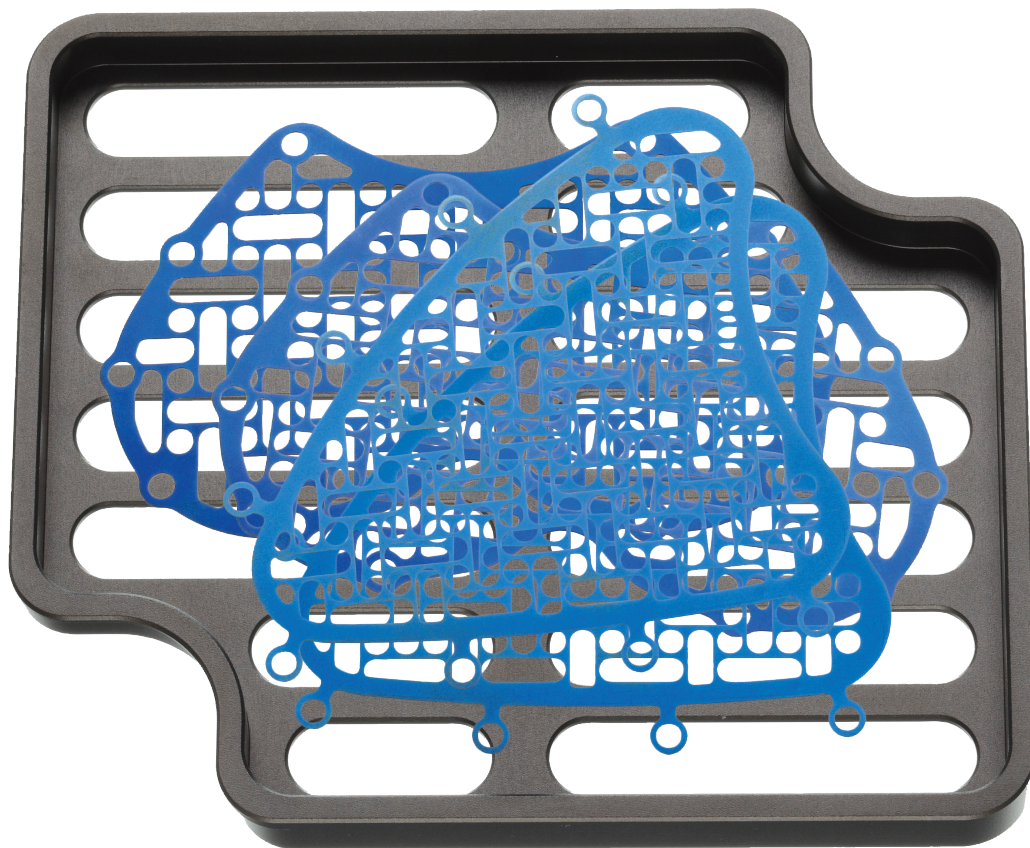


# Skull base plates

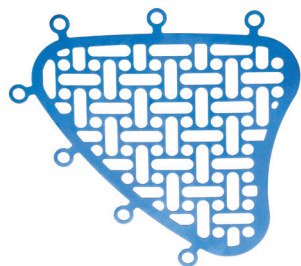
The addition of dedicated skull base plates may make reconstruction of unique cranial approaches quicker and more efficient through minimal plate modification.

## Unique features:

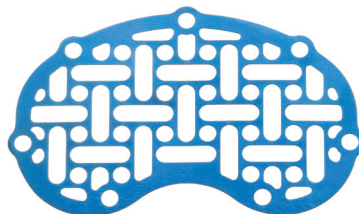
- Low profile 0.3mm construct for minimal implant palpability
- Multiple thickness and size options to match unique patient needs
- Closed outer frame design offers enhanced stability
- Multiple fixation holes, including long holes within center of plates, for added rigidity



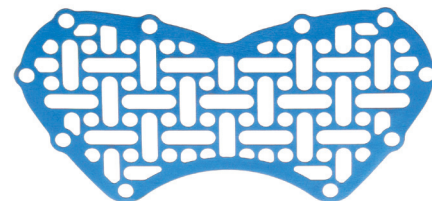
Round



Translabyrinthine



Temporal



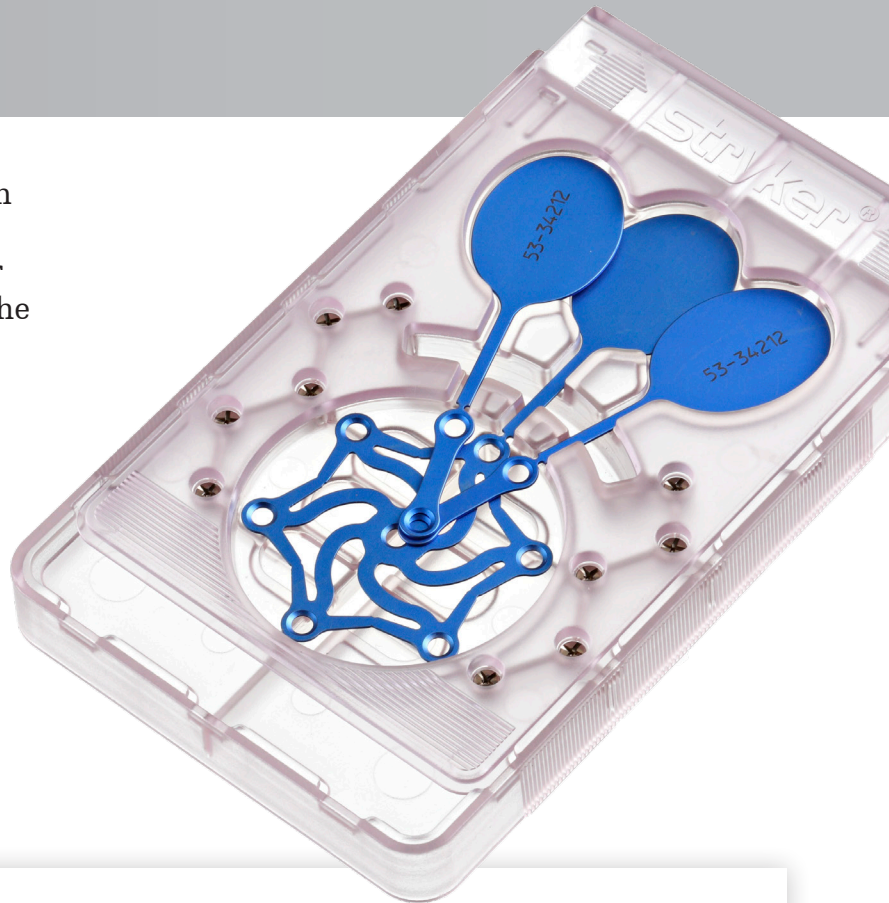
Suboccipital



QuikFlap offers an easy, cost effective solution for cranial flap fixation. Provided sterile, the procedure packs can limit processing risks for the hospital while decreasing inventory and the cost of backstock.

## Unique features:

- Space conservation
- Sterilization by manufacturer specifications
- Cost efficiency
- Comprehensive product offering
- Now offered with the AXS screw



## Options:



### 12-015405 - 2-hole plate set with self-drilling screw

#### Contains:

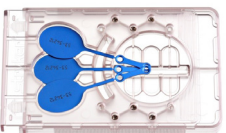
UNIII 0.6mm 2-hole rigid plate (x3)  
UNIII screw AXS self-drilling 1.5x4mm (x6)



### 12-015415 - 2-hole plate set, self-tapping screw

#### Contains:

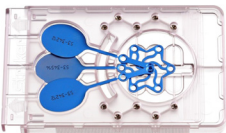
UNIII 0.6mm 2-hole rigid plate (x3)  
UNIII screw AXS self-tapping 1.5x4mm (x6)



### 12-015425 - 2-hole plate set, low profile with tab

#### Contains:

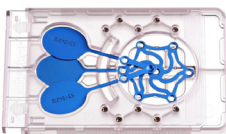
UNIII 0.4mm 2-hole plate with tab (x3)  
UNIII screw AXS self-drilling 1.5x4mm (x6)



### 12-015445 - 2-hole plate burr hole cover 14mm set

#### Contains:

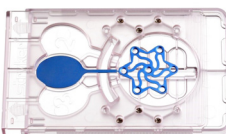
UNIII 0.4mm 2-hole plate with tab (x2)  
UNIII 0.4mm 14mm burr hole cover (x1)  
UNIII screw AXS self-drilling 1.5x4mm (x10)



### 12-015465 - 2-hole plate burr hole cover 20mm set

#### Contains:

UNIII 0.4mm 2-hole plate with tab (x2)  
UNIII 0.4mm 20mm burr hole cover (x1)  
UNIII screw AXS self-drilling 1.5x4mm (x10)



### 12-015485 - 2-hole plate burr hole cover 14mm set

#### Contains:

UNIII 0.4mm 14mm burr hole cover (x1)  
UNIII screw AXS self-drilling 1.5x4mm (x6)

# Ordering information

## 1.5mm Neuro plates/mesh product number description

### Low profile plates

(Order quantity: package of 1)

53-34804	Straight plate, 8-hole
53-34164	Straight plate, 16-hole
53-34406	Straight plate, 4-hole w/ bar
53-36212	Dog-bone plate, 2-hole rigid (0.6mm), 12mm bar
53-34212	Dog-bone plate, 2-hole, 12mm bar, w/ tab
53-34216	Dog-bone plate, 2-hole, 16mm bar
53-34228	Box plate, 2 x 2 hole, small
53-34300	Rectangle plate, 2 x 2 hole
53-34608	Double-Y plate, 6-hole, w/ bar
53-34612	Gap plate, 6-hole, small
53-34622	Gap plate, 6-hole, large
53-34240	Box plate, 2x2 hole, large
53-34230	Box plate, 2x2 hole, large, w/ tab
53-34630	X plate, 4-hole

### Skull base plates

(Order quantity: package of 1)

53-00362	Round malleable (0.3mm), small
53-00364	Round malleable (0.3mm), medium
53-00466	Round rigid (0.4mm), large
53-00342	Translabyrinthine malleable (0.3mm), small
53-00346	Translabyrinthine malleable (0.3mm), large
53-00324	Temporal malleable (0.3mm)
53-00382	Suboccipital malleable (0.3mm), small
53-00486	Suboccipital rigid (0.4mm), large

### Low profile burr hole covers

(Order quantity: package of 1)

53-34507	Burr hole cover, 7mm, with tab
53-34510	Burr hole cover, 10mm, with tab
53-34514	Burr hole cover, 14mm, with tab
53-34520	Burr hole cover, 20mm, with tab
53-34524	Burr hole cover, 24mm, with tab
53-34614	Shunt burr hole cover, 14mm, with tab
53-34620	Shunt burr hole cover, 20mm, with tab

## 2D mesh

(Order quantity: package of 1)

56-90312	Dynamic mesh 40x40x0.3mm
56-90314	Dynamic mesh 90x90x0.3mm
56-90316	Dynamic mesh 120x120x0.3mm
56-90612	Dynamic mesh 40x40x0.6mm
56-90614	Dynamic mesh 90x90x0.6mm
56-90616	Dynamic mesh 120x120x0.6mm
56-90618	Dynamic mesh 200x200x0.6mm
56-90814	Dynamic mesh 90x90x0.8mm
56-90816	Dynamic mesh 120x120x0.8mm
56-90818	Dynamic mesh 200x200x0.8mm
56-90342	Hybrid mesh 60x60x0.3mm
56-90344	Hybrid mesh 90x90x0.3mm
56-90346	Hybrid mesh 120x120x0.3mm

## 3D mesh

(Order quantity: package of 1)

56-90654	Pre-form mesh, 90x90x0.6mm
56-90656	Pre-form mesh, 120x120x0.6mm
56-90658	Pre-form mesh, 190x190x0.6mm
56-91062	Pre-form mesh, right, 17.5x12,8cm; T:1mm
56-91064	Pre-form mesh, left, 17.5x12,8cm; T:1mm

## Neuro containers product number description

### Sterilization containers

29-15330	Module with lid
29-15331	Plate inlay
29-15335	Mesh inlay
29-15336	Screw disc inlay
29-15332	Instrument inlay
29-15012	Half-size container
29-15013	Half-size lid
29-15023	Lid for combined tray
29-15026	Combined container
29-15027	Mat for combined tray
29-15028	Instrument inlay for combined tray
29-15031	Quarter-size container
29-15032	Quarter-size lid
29-15036	Accessory tray
29-15037	Silicon mat

## Mesh storage and instrumentation

01-01036	Mesh cutter coarse, 190x55x20mm
01-01038	Mesh clipper, 135x60x20mm
29-92001	2D mesh storage rack with lid
29-92002	2D mesh storage tray with lid
29-92003	2D silicon mat, small
29-92004	2D silicon mat, large
29-91002	Storage tray for mesh instruments
29-93001	3D mesh storage rack with lid
29-93002	3D mesh storage rack with lid
29-93003	3D silicon mat

## 1.5mm AXS neuro screws product number description

### Screw disc - pre-loaded

(Order Qty: Pkg of 1)

29-56933	Screw disc, 1.5x3mm, SD, 80/p
29-56934	Screw disc, 1.5x4mm, SD, 80/p
29-56935	Screw disc, 1.5x5mm, SD, 80/p
29-56034	Screw disc, 1.5x4mm, ST, 80/p
29-56035	Screw disc, 1.5x5mm, ST, 80/p

### Screw disc - empty

(Order Qty: Pkg of 1)

29-15091	Screw disc, 1.5mm, empty
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## AXS screws

56-15034	Self-tapping screw, 1.5x4mm
56-15035	Self-tapping screw, 1.5x5mm
56-15036	Self-tapping screw, 1.5x6mm
56-15933	Self-drilling screw, 1.5x3mm
56-15934	Self-drilling screw, 1.5x4mm
56-15935	Self-drilling screw, 1.5x5mm
56-17334	Emergency screw, 1.7x4mm

## Twist drills (Single use only)

(Order quantity: package of 1)

60-12594	1.2mm drill bit, 4mm stop, J-latch end
60-12596	1.2mm drill bit, 6mm stop, J-latch end
60-12394	1.2mm drill bit, 4mm stop, TPS end
60-12396	1.2mm drill bit, 6mm stop, TPS end

## Neuro instrumentation product number description

### Instrumentation

62-18110	Plate forcep
62-18330	In-situ cutter
62-15001	Screwdriver handle, small
62-15002	Screwdriver handle, medium
62-15035	UNIII AXS screwdriver blade, long
62-15036	UNIII AXS screwdriver blade, short
36-00726	Plate bending plier
64-00132	Mesh bending plier
37-10930	Plate/mesh scissors
60-12294	Drill w/ dental interface
60-12296	Drill w/ dental interface

## Markers

52-00003	Screw marker 3mm
52-00004	Screw marker 4mm
52-00005	Screw marker 5mm
52-00006	Screw marker 6mm

# Complementary products

## DirectInject

DirectInject is the first and only on-demand HA cement, redefining ease-of-use in cranial closure. It's intended to repair neurosurgical burr holes, contiguous craniotomy cuts and other cranial defects.

## Applications

- Ready for implantation immediately upon request
- A second mixer-cannula allows for dual interval implantation
- Requires no manual mixer or preparation
- Maintains consistent viscosity with negligible displacement of cement

## DuraMatrix-Onlay PLUS

DuraMatrix-Onlay PLUS is derived from purified, bovine Achilles tendon. It is intended for use as a dura substitute for the repair of dura mater.

## Features

- Leak resistant, providing durability and additional protection against CSF leaks<sup>4,5,6</sup>
- Resorption time of approximately 8 weeks that occurs at a balanced rate<sup>5,6</sup>
- Sponge-like product that conforms to the natural contours of the defect site

## DuraMatrix Suturable

DuraMatrix Suturable is a collagen dura membrane from purified intact bovine dermis tissue. It is intended for use as a dura substitute for the repair of dura mater.

## Features

- Highest suture pull out strength in DuraMatrix portfolio<sup>4</sup>
- Demonstrates effective protection against CSF leakage<sup>5,6</sup>
- 38-40 weeks resorption that occurs at a balanced rate<sup>5,6</sup>

## Cranial iD - patient specific implants

Cranial iD implants allow you to address your patients desire for complete restoration and aesthetic results. These are available in the material of your choice including MEDPOR, PEEK and PMMA.

## Features

- PMMA is validated to fit within 2mm
- Pterional PLUS implants are available in both MEDPOR and PEEK materials
- PEEK is designed with exacting parameters to optimize the bone-to-implant interface
- MEDPOR's biocompatible material makes it easy to modify

## MEDPOR neuro implants

MEDPOR porous polyethylene implants provide surgeons with an expanding range of options for reconstruction and augmentation. MEDPOR is a biocompatible, porous polyethylene material. The interconnecting, omnidirectional pore structure may allow for fibrovascular in-growth and integration of the patient's tissue.<sup>7</sup> More than 650,000 procedures have been performed with MEDPOR biomaterial, with more than 350 published clinical reports in cranial, reconstructive, oculoplastic and cosmetic applications.

## Applications

- Craniofacial reconstruction and repair of craniofacial trauma
- Implants intended for reconstruction of the cranium
- Implants with Titanium mesh embedded in the MEDPOR biomaterial are designed to help the implant retain its shape when bent and contoured to meet a specific patient defect
- May be trimmed and cut with surgical scissors.
- Easily fixated with plates/screws - designed to stay in place

## Delta system

Delta System resorbable implant technology merges science and simplicity. The system consists of resorbable bone plates and screws fabricated from a unique tripolymer. The Delta system tripolymer is a composition of poly L-Lactide/D-Lactide/Glycolide having a molecular ratio of 85/5/10. The resulting tripolymer is an extraordinary combination of strength, contourability and absorption, well suited for craniomaxillofacial surgery.

## Applications

- Adult and pediatric craniomaxillofacial applications
- Fixation of bones affected by trauma or for reconstruction
- Cranial flap fixation
- Comminuted fractures
- Reconstructive procedures of the midface

## Colorado needle

The Colorado microdissection needle has an ultra-sharp tip for clean, precise soft tissue dissection. The heat resistant tungsten alloy maintains tip sharpness, and is highly polished for easy cleaning. We offer a wide selection of needle electrodes and standard shaft sizes for use in standard handpieces.

## Applications

- Precise electro-cutting and electro-coagulation during electrosurgery



## Craniomaxillofacial

This document is intended solely for the use of healthcare professionals. A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate a Stryker product. A surgeon must always refer to the package insert, product label and/or instructions for use, including the instructions for cleaning and sterilization (if applicable), before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets.

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Devices may not have been licensed in accordance with Canadian Law.

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### References:

1. Internal testing TI4282
2. TI4579 Mesh Upgrade 3D Mesh Impression Test with Maximum Defect
3. TI4580 Mesh Upgrade 3D Mesh Impression Test with 70mm Defect
4. In vitro data on file at Collagen Matrix, Inc.
5. Rabbit duraplasty study. Data on file at Collagen Matrix inc.
6. The results of preclinical in vitro studies may not be indicative of human clinical outcomes In vivo evaluation of resorption in a rabbit duraplasty model. Data on file.
7. Liu JK, Gotfried ON, Cole CD, Dougherty,WR, CouldwellWT, "MEDPOR Porous Polyethylene implant for Cranioplasty and Skull Base Reconstruction"Neurosurgery [April 2004].

- \* When compared to Stryker Universal Neuro II System Implants  
1 Stryker Test Reports TI2269 and TI3137  
2 Stryker Test Reports TI2441 and TI2446