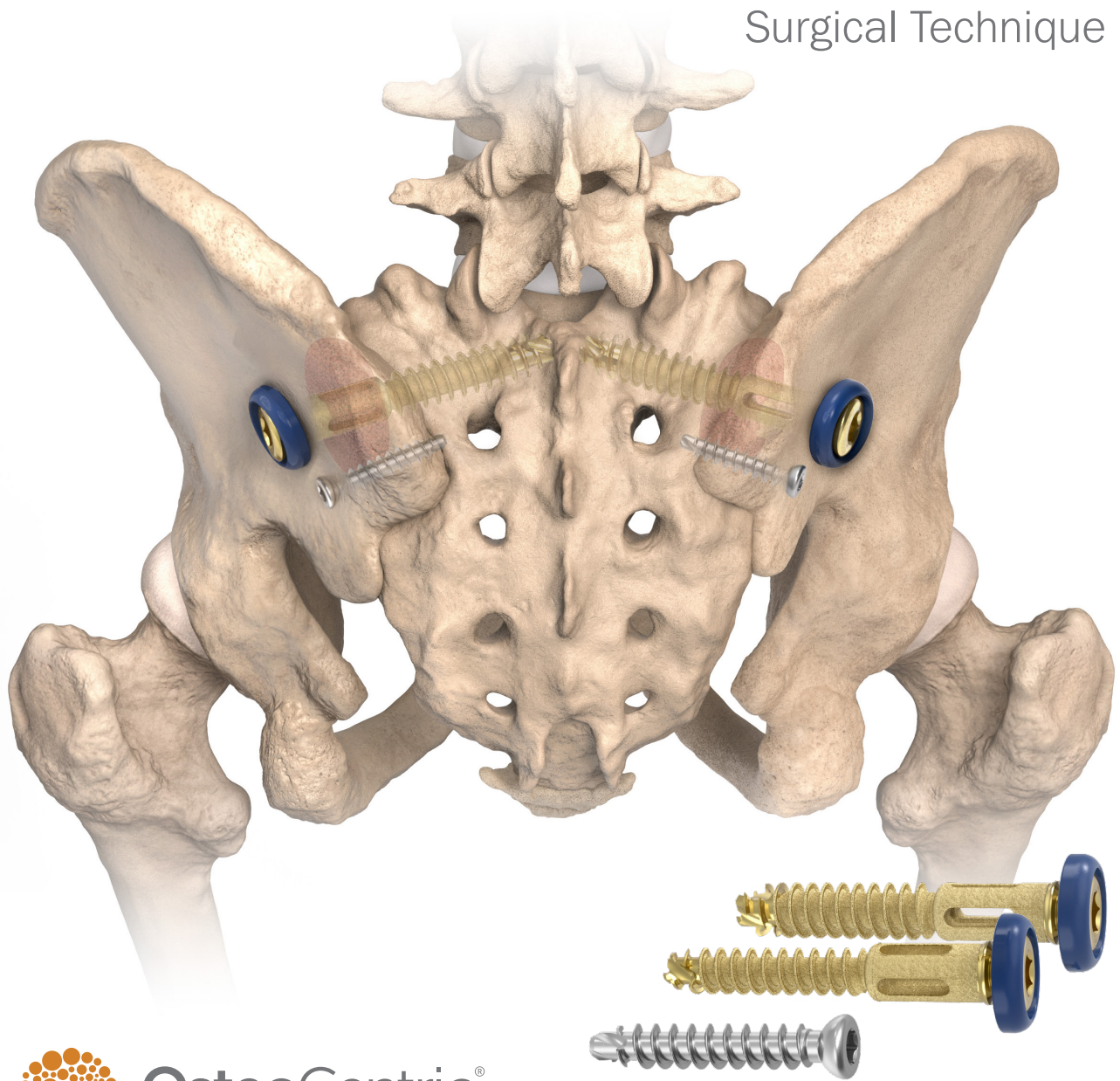


# OsteoCentric® Integrity-SI® Fusion System

Surgical Technique



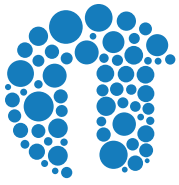
OsteoCentric®  
TECHNOLOGIES

OsteoCentric® Integrity-SI® Fusion System

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**UnifiMI™**  
An **OsteoCentric**  
Technology

**Mechanical Integration (MI)** is a revolutionary new method designed to instantly secure and stabilize implants to the patient's bone utilizing OsteoCentric's proprietary thread geometry called UnifiMI™ - providing improved primary stability of any implant in normal or compromised bone. Unique thread geometry instantly and circumferentially interlocks with bone by entrapping and containing bone between the thread form.

This mechanical interlocking creates a structural as well as functional connection between an implant and bone which is designed to perform similar to Biological Integration (Osseointegration). Unlike Biological Integration (Osseointegration), the UnifiMI connection to bone is instant vs. delayed, removable vs. permanent, mechanical vs. biological.



## BladeX®

BladeX is a proprietary instrumentation system that enables the aggressive and precise joint preparation within the fusion zone. The robust design of BladeX allows for clear and aggressive decortication of both sides of the SI Joint, paving the way for the primary Integrity-SI implant to create an optimal fusion environment.



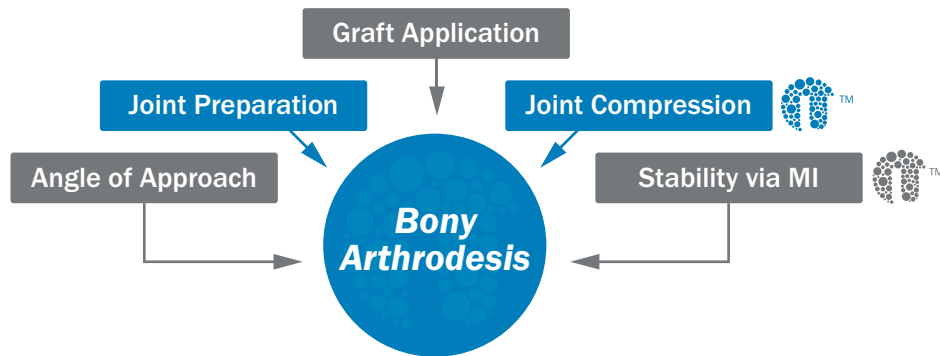
BladeX MIS Decorticator



## Design Rationale and System Description

The Integrity-SI Fusion System was designed utilizing time-tested clinical principles of joint fusion. Throughout design the development team focused on these five clinically accepted principles of fusing a joint space: Angle of Approach, Joint Preparation, Graft Application, Joint Compression, and Stability via Mechanical Integration. As a result, the System provides unparalleled focus on creating fusion in the SI joint.

**The Implants and Blades and 2.0mm Guide Wire item #202-80100 are for single-use only.**



Enhanced by Mechanical Integration



10mm

Integrity-SI Fusion Implant



12mm

Integrity-SI Fusion Implant



6.5mm

Secondary Implant



BladeX MIS Decorticator

## Device Description

The Integrity-SI Fusion System consists of partially threaded, self-tapping cannulated titanium implants designed to be inserted across sacroiliac joint providing stability for joint arthrodesis when used in conjunction with allograft or autograft. The surgical implants are available in various sizes to accommodate patient anatomy. The 10mm and 12mm implants are offered in 5mm increments for lengths 50mm-65mm and 85mm-110mm and 2.5mm increments for lengths 65mm-85mm. The 10mm, and 12mm fasteners also include a pre-assembled washer for improved joint compression. The fully threaded 6.5mm diameter secondary implants are offered for additional rotational stability in lengths of 30mm-50mm, and are only intended for use in conjunction with a primary 10mm, or 12mm fastener. All implants as well as the Blade-X decortication instrument blades are provided non-sterile. See the appropriate Instructions for use. Non-Sterile implants as well as Blade-X decortication instrument blades are provided in a steam sterilization implant tray. The Integrity-SI Fusion surgical instruments are provided non-sterile in steam sterilization instrument tray. The Integrity-SI Fusion System is only intended for use with autograft or allograft material. The Integrity-SI Fusion implants are restricted by federal law (USA) to sale by or on the order of a physician only.

# Indications For Use and Materials

The Integrity-SI Fusion System is intended for sacroiliac joint fusion for the following conditions:

- Sacroiliac joint dysfunction that is a direct result of sacroiliac joint disruption and degenerative sacroiliitis. This includes conditions whose symptoms began during pregnancy or in the peripartum period and have persisted postpartum for more than 6 months.
- To augment immobilization and stabilization of the sacroiliac joint in skeletally mature patients undergoing sacropelvic fixation as part of a lumbar or thoracolumbar fusion.
- Acute, non-acute, and non-traumatic fractures involving the sacroiliac joint.

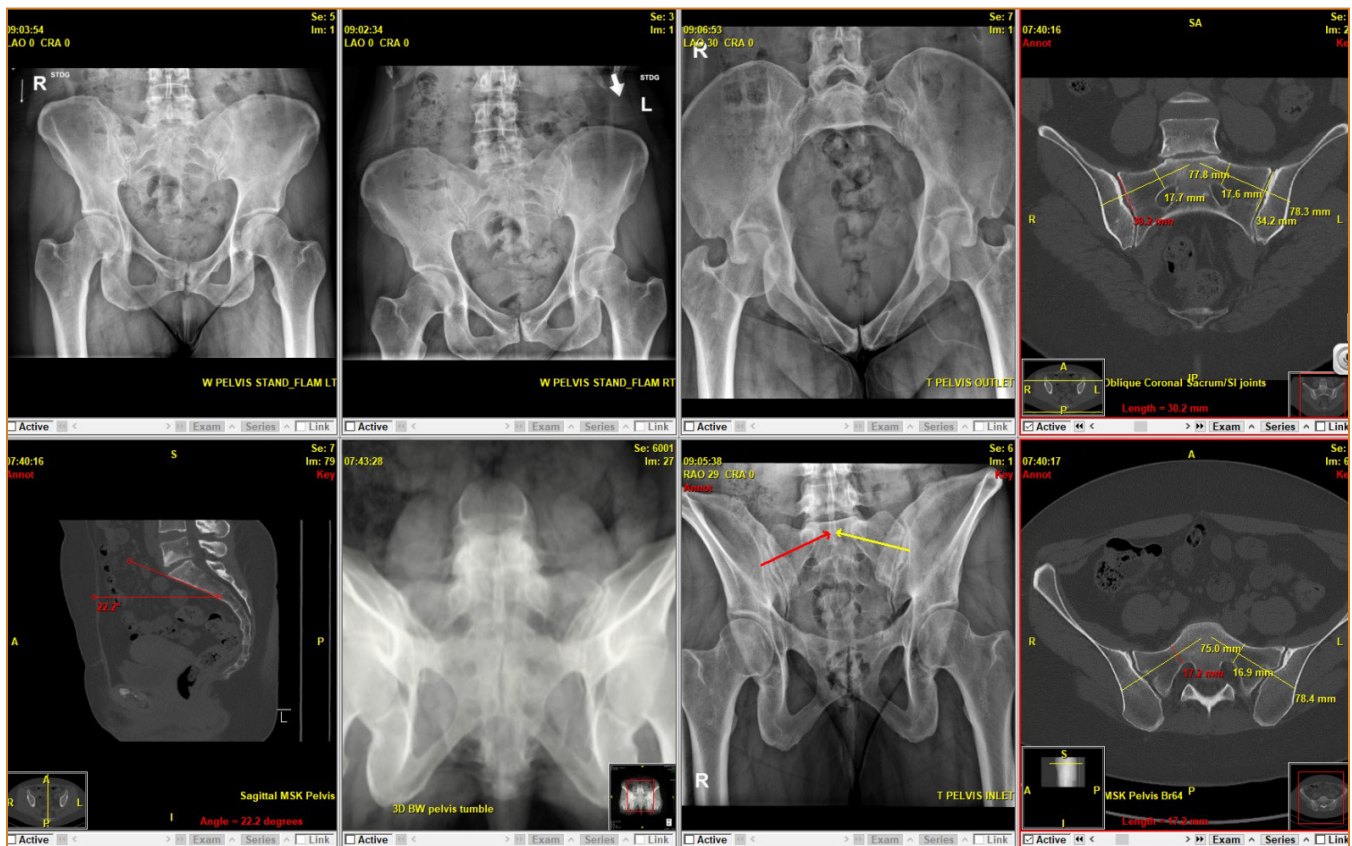
The Integrity-SI Fusion System is only intended for use with autograft or allograft.

The Integrity-SI Fusion implants are manufactured from Ti-6Al-4V ELI (ASTM F136).

## Preoperative Templating and Imaging

### Preoperative Templating and Inlet and Outlet imaging for implant placement into the upper sacral segment

Standard preoperative template. Note the 'safe zones' of implant passage above and anterior to the S1 neural foramen and caudal and posterior to the L5 traversing nerve root. Also note the perpendicular positioning of the procedural approach as it relates to the SI joint angle.



# Patient Positioning and Incision Planning

## Starting Point Tip

Trace the lines of the image beams to create a grid showing your inlet and outlet beams. When moving your trajectory, strict attention must be paid to making 'uniplanar' corrections. For example, when moving cranial or caudal on the outlet view, move your guide pin along the trajectory of the inlet beam. This will ensure the greatest chance of uniplanar corrections.



## Patient Positioning: Prone

The patient is placed prone with chest rolls or per surgeon preference. Fluoroscopy is brought in from the opposite side of surgery and the monitor is placed at the foot-end of the patient.



## Incision Planning

The incision is planned by marking the superior iliac spine (PSIS) and the axis of the femur. Two lines are drawn down the axis of the two marks creating an intersection. The line from the PSIS is drawn into 1/3rds. The starting point will be in the vicinity of the intersection of posterior and middle thirds.

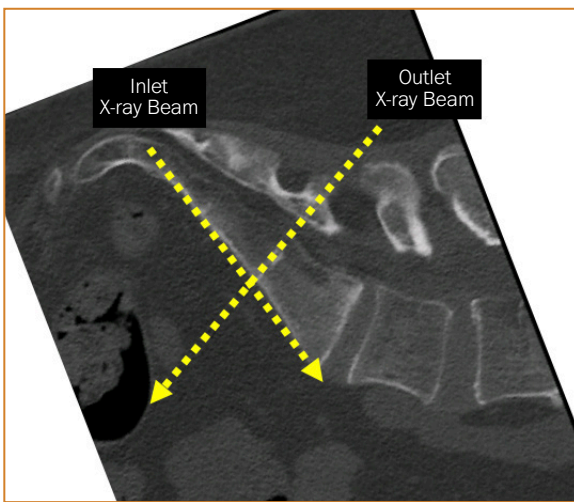
This will avoid the potential error of placing the guide in the direct vicinity of the greater sciatic notch and corresponding vascular structures.

# Fluoroscopic Guidance



## Outlet Imaging

Patient example (in prone position) of outlet imaging.



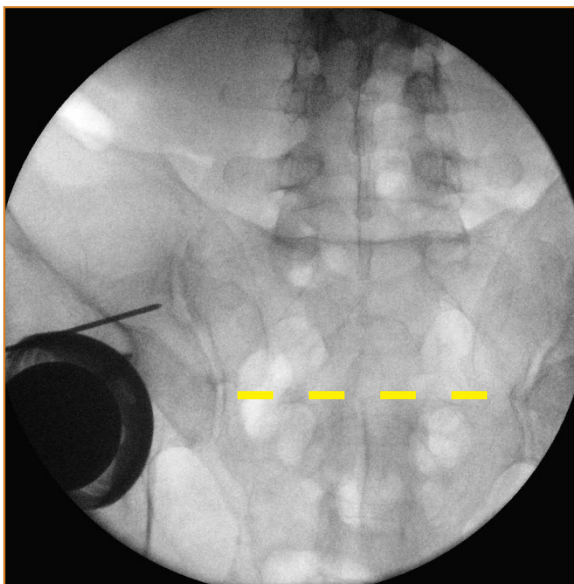
*Patient in Prone Position*

## Outlet Imaging

Basic definition for implant placement: A pelvis radiograph placing the pubic symphysis over the body the lower sacral segment (typically S2) or the neural foramen of the lower sacral segment.

Correct orientation allows the surgeon to adjust the implant placement in the cranial/caudal direction.

The fluoroscopy unit should be oriented in the AP direction and continually tilted with the image intensifier tilted towards the head to offer ideal imaging.

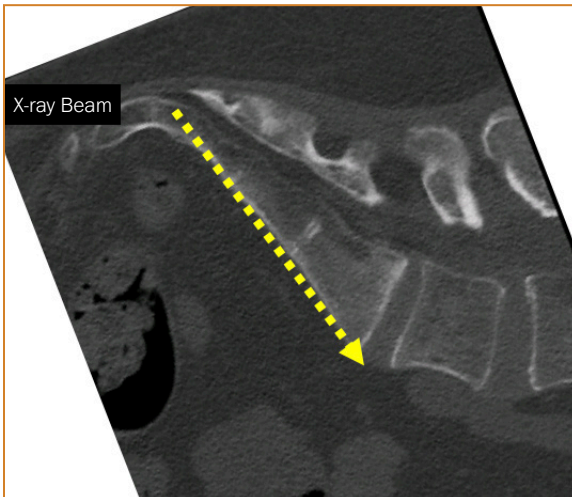


The yellow line is placed on top of the pubic symphysis at the caudal level of the S1 foramen.



## Inlet Imaging

Patient example (in prone position) of inlet imaging.



*Patient in Prone position*

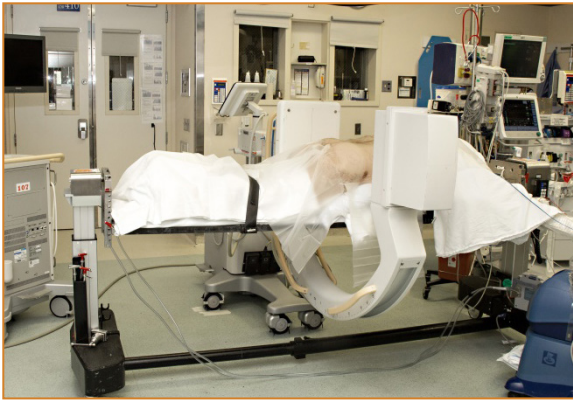
## Inlet Imaging

Basic Definition for implant placement: A pelvis radiograph superimposing the upper 2 sacral segments on top of one another is utilized to ensure that guide wire placement is in the correct orientation in the Anterior-Posterior (AP) plane. This orientation is based upon the premise that the vertebral bodies of the upper and lower sacral segments (most often presumed to be S1 and S2) are directly in-line with each other giving a double-density of the anterior rim of the vertebral bodies. The fluoroscopy unit is centered around the pelvis and then the image intensifier is tilted toward the legs until the image is optimized.



Intra-operative inlet view demonstrating a perfect hyperdense zone representing the overlay of the anterior borders of S1 and S2.



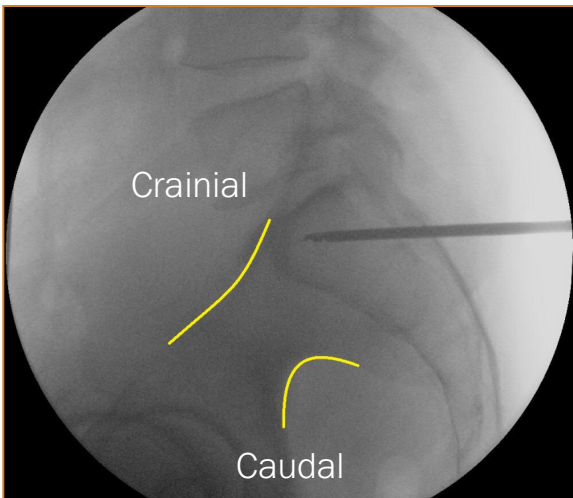


## Lateral Imaging

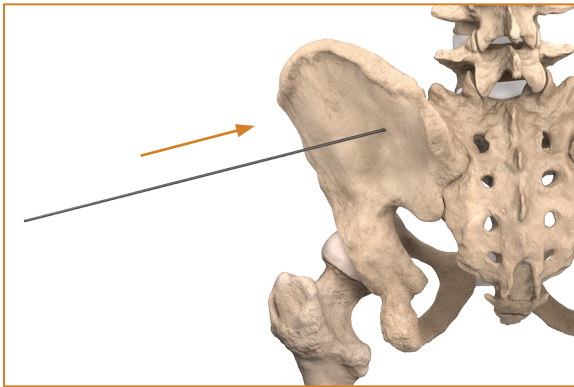
Patient example (in prone position) of lateral imaging.

This is a safety step to ensure that the guide wire is not anterior to the iliac-cortical density, (a radiographic marker detailing the location of the L5 nerve root and vascular structures anterior to the sacral ala).

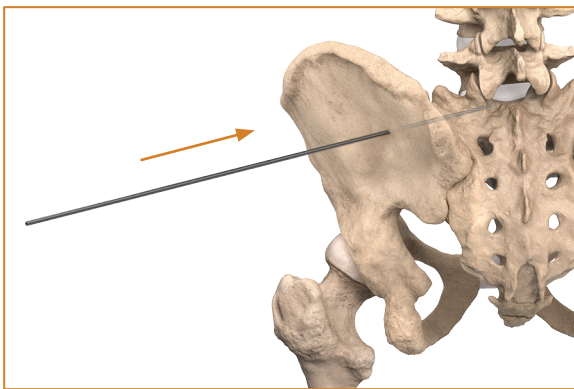
This image may be utilized to ensure that the implants are staying posterior to the Iliac-cortical density (ICD). This line, in non-dysmorphic sacra, represents the path of the L5 nerve root and any implant or guide wire placed anterior to the ICD may place the L5 nerve in danger of injury. In this image, the yellow lines represent the ICD cranially and the greater sciatic notch caudally.



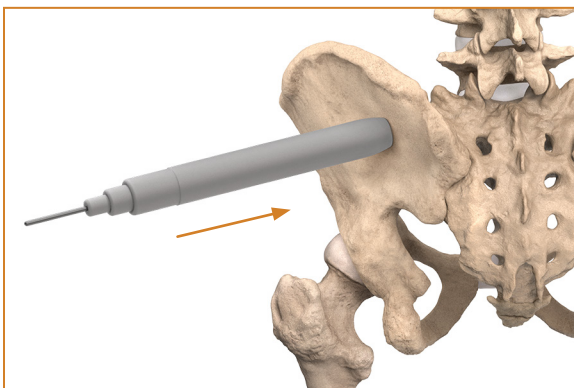
# Surgical Technique



2.0mm Guide Wire



3.2mm Guide Wire



Dilators

## Patient Prep and C-arm Alignment

As instructed previously, set up and align the c-arm lateral view, inlet view, and outlet view.

### Step 1

#### 2.0mm/3.2mm(long) Guide Wire Insertion

Manually insert the 2.0mm guide wire through the soft tissue until the tip contacts the lateral wall of the ilium. The ideal entry point is typically 6-8 centimeters anterior to the PSIS. The ideal trajectory is templated on axial and coronal CT imaging.

**Surgical Pearl:** A safe plan will direct the implant anterior and cranial to the S1 foramen, and posterior and caudal to the sacral ala and the L5 nerve root. This will be in the upper (S1 typically) or lower (S2 typically) sacral segment based on pre-operative templating. The goal is to position the guide wire safely in the perpendicular orientation to the SI Joint space

Take fluoroscopic images as necessary to verify the correct placement and trajectory. Once complete, make a 5-6cm skin incision at the desired location, with the wire being located just cranial of the incision.

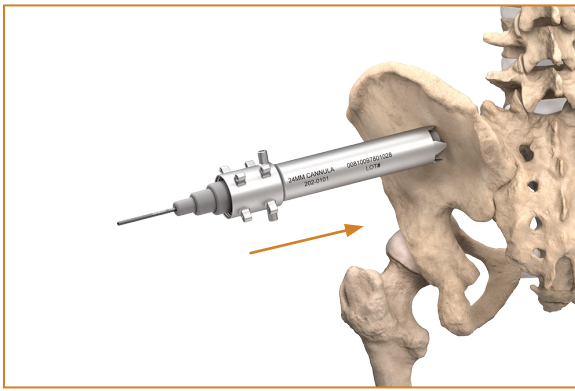
Utilizing 2.0 guide wire as a guide, insert the 3.2mm guide wire manually right next to the 2.0 guide wire. Remove the 2.0mm guide wire. Verify the trajectory of the 3.2mm guide wire and fine-tune the starting point via fluoroscopic imaging, prior to impacting the wire into the lateral wall of the ilium a few millimeters. This prevents slippage of the wire on the lateral wall of the ilium. Utilizing a powered wire driver, insert the 3.2mm guide wire thru the sacroiliac joint space and embed it to its final position within the vertebral body using fluoroscopic guidance.

### Step 2

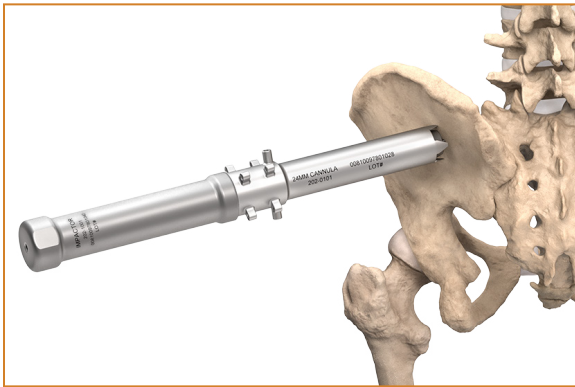
#### Dilation

Using a #11 blade on a long handle, run this down the wire to incise the gluteal fascia away from the guide wire. Then, sequentially dilate over the 3.2mm guide wire starting with the 12mm dilator and working up to the 24mm.

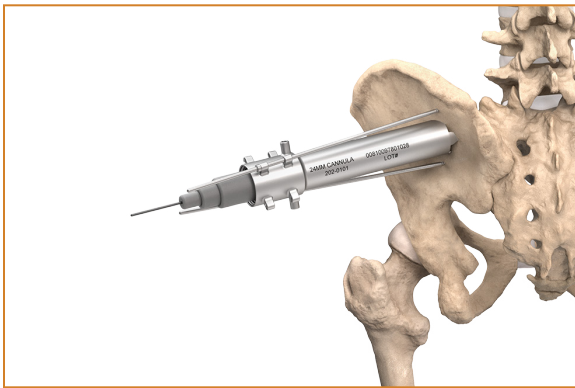
**Surgical Pearl:** It is often helpful for the surgeon to use their finger to bluntly dissect the soft tissue down to the ilium and to stretch the fascial tissues to allow easier passage of the dilators.



Working Cannula



Impaction of Cannula



Stabilizing Pin



24mm Cannula



Impactor

### Step 3

#### Cannula and Stabilization Pin Insertion

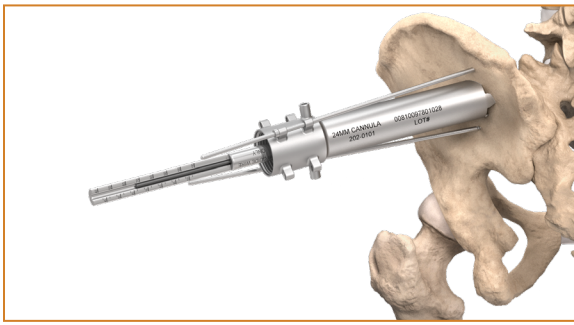
Insert the 24mm working Cannula over the 24mm Dilator until it contacts the lateral ilium wall.

Place the Impactor on the 24mm working Cannula and impact the end with a Mallet to embed the Cannula Fins into the ilium. Continue impacting until the fins are fully engaged. Typically, an audible pitch change during impaction will indicate a fully seated cannula.

**Surgical Pearl:** Care should be taken to ensure that the impaction process does not change the trajectory of the either the guide wire or the 24mm cannula. The impaction is not always exactly perpendicular to the contour of the ilium. Take special care to ensure the working cannula base is at the lateral ilium wall following impaction.

If desired, stabilizing pins may be utilized to increase the stability of the working Cannula. To insert, utilize a powered wire driver and insert the stabilizing pin through the desired guide slots on the Cannula until the shoulder is flush with the top of the guide holes. Up to four Stabilizing pins may be used. Slow advancement is recommended.

**Surgical Note:** It is recommended that two stabilizing pins be placed on opposite sides of the 24mm cannula in nearly all patients, especially osteopenic patients, to aid in keeping the system stable. Care should be taken not to overtighten the pins as this can change the trajectory. In addition, these pins can provide minor changes to aid in straightening out the trajectory.



### Step 4 12mm Sleeve Insertion and Primary Depth Gauge Measurement

After removing the Dilators and while leaving the 3.2mm guide wire in place, insert the 12mm Sleeve into the 24mm Cannula and rotating until the '0' line is flush with the top surface of the Cannula. Depth of the sleeve is not important at this step.

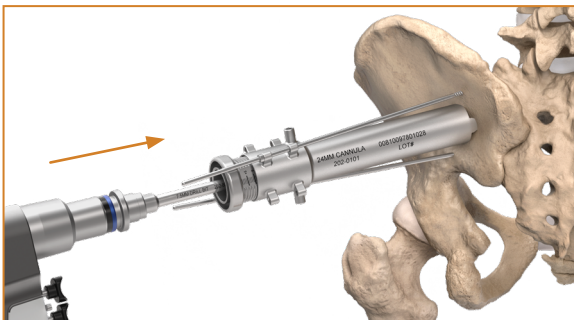
The Primary Depth Gauge may be used at this time to measure estimated implant length by sliding it over the 3.2mm guide wire until the distal tip firmly rests against the ilium. Estimated implant length is measured by reading where the proximal end of the guide wire sits within the Primary Depth Gauge measurement markings.



Primary Depth Gauge



12mm Sleeve



### Step 5 Drill Minor Diameter

Select the desired Implant diameter (10mm or 12mm). Connect the corresponding drill size to the Inline Ratcheting Handle or Power Driver.

Primary Implant Diameter	Drill Diameter
10mm	6.0mm
12mm	7.5mm

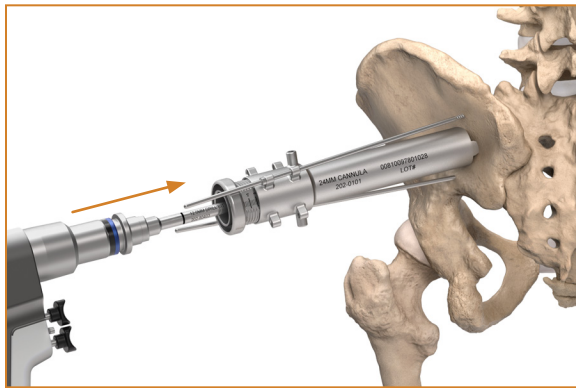


6.0mm drill (10mm primary implant)



7.5mm drill (12mm primary implant)

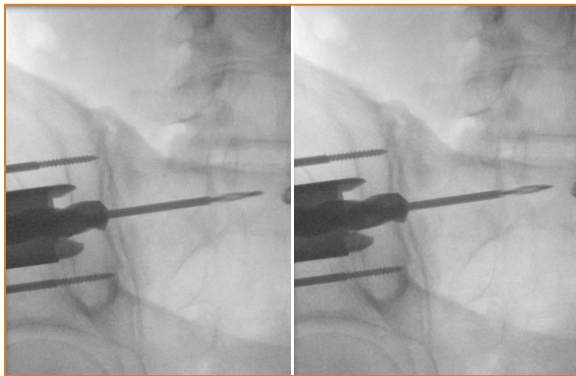
Insert the desired Implant Inner Diameter Drill over the 3.2mm guide wire advance to the desired depth. Ensure the Long 3.2mm guide wire remains in place.



12mm Drill through 12mm Sleeve



12mm Drill



*Note 12mm drill going just across the SI joint. Depth should be set once at the sacral side of the SI joint or just across it.*

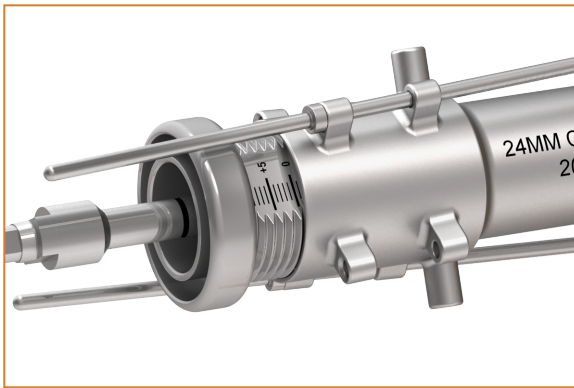
## Step 6 Drill Across SI Joint

Connect the 12mm Drill to power of the Inline Ratcheting Handle. After manually inserting the Drill over the 3.2mm guide wire, continue drilling 6 to 7mm into the sacral ala. If contact with the 12mm sleeve is made before the drill tip is 6 to 7mm into the ala, decrease the height of the 12mm sleeve incrementally until the desired depth is achieved. Rotate counterclockwise to increase the height of the sleeve, and clockwise to decrease the height of the sleeve. Use tactile feedback in conjunction with fluoroscopy to identify the lateral border of the sacral ala prior to plunging thru the sacral cortex.

Once the depth is set, it is helpful to penetrate the sacral side of the SI joint to allow for minor changes with the 12mm sleeve should a deeper, more aggressive decortication be desired and collect autograft.

**Surgical Pearl:** When collecting autograft from the ala, rotate the drill slowly and remove slowly from the cannula to retain as much bone graft as possible.

**Surgical Note:** The 12mm Sleeve should now be adjusted to help prevent over penetration and plunging with subsequent preparation steps. (See Step 8 for details.) Great care should be taken at this step to assess the tactile-feedback from the ilial and sacral sides of the SI joint. This depth sets the decortication depth for the remainder of the case. Adjusting the sleeve depth can correct for initial under or over penetration.



*Sleeve Adjustment*

## Step 7

### 12mm Sleeve Height Adjustment

While the 12mm Drill is inserted to the appropriate depth, manually adjust the 12mm Sleeve by rotating it until the proximal surface is flush with the end of the Inline Ratcheting Handle or the T-handle. Rotate counterclockwise to increase the height of the sleeve, and clockwise to decrease the height of the sleeve. Each rotational 'click' on 12mm Sleeve corresponds to 1mm of axial travel (depth). This sleeve will now serve as a hard depth stop for subsequent instruments.

Remove the 12mm Drill and long 3.2mm guide wire, taking care to collect the autograft bone from the Drill flutes for subsequent graft application. Remove drill slowly to avoid losing the autograft from the flutes.

**Surgical Note:** The 12mm Sleeve provides the depth control for the remaining instruments by acting as a hard stop to prevent over-penetration or plunging. Intraoperative fluoroscopy can assist the surgeon in determining appropriate drill depth; just across the SI joint.

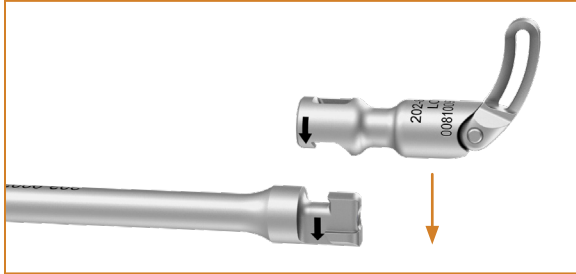
**Surgical Note:** Do not retract the 12mm Sleeve beyond the '-15mm' location.



38mm Blade

### Step 8 Assembly of BladeX® MIS Decorticator Instrument

Connect the 38mm Blade to the Central Shaft. Insert the Central Shaft into the BladeX Handle Assembly and turn the knob clockwise to engage. Turn the Knob until the Gauge reads “12”.



Blade Connection

### The BladeX blades are intended for single-use only.

When installing the Blade on the Central Shaft, be sure to orient the laser marks (→) as shown. The Blade will click into place when properly installed.



BladeX® Handle

When installing the Central Shaft into the BladeX Handle Assembly, be sure to orient the Blade with the Handle by aligning the laser marks (BLADE →) as shown.



Central Shaft with Blade attached

A new Blade is required for each surgery to ensure component sharpness for efficient bone resection.

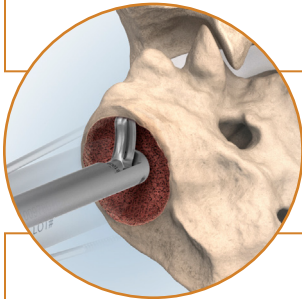
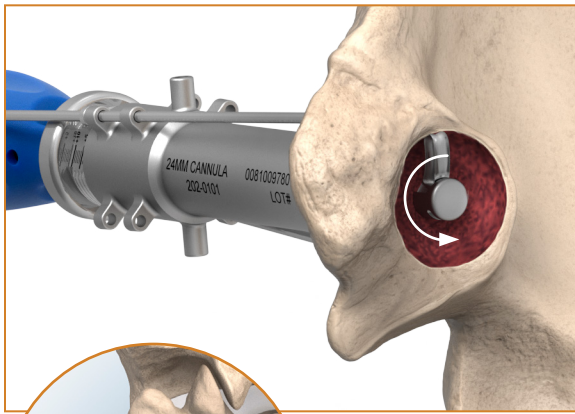
**Surgical Pearl:** The Gauge may be used as a visual indicator of Blade deployment. The readout corresponds to the diameter of the cut.



Central Shaft insertion with “Blade” aligned



BladeX MIS Decorticator showing blade deployed



*BladeX Cutting*



## Step 9

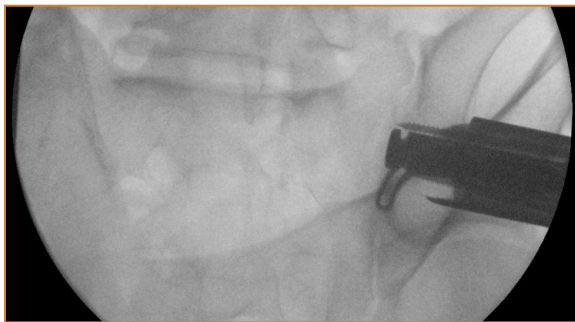
### Aggressively Decorticate SI Joint Using BladeX MIS Decorticator

Insert the BladeX through the 12mm Sleeve until the Handle makes contact with the proximal end of the 12mm Sleeve. If the bottom of the BladeX handle is flush with the adjustment sleeve, resection will be performed at the proper depth. Fine adjustment to the resection depth may be made rotating the 12mm Sleeve incrementally to increase or decrease the depth stop if the surgeon desires to do so (See Step 10b for more detail).

The Alignment Slot on the distal tip of the BladeX provides the user a visual indicator of blade location when viewed under fluoroscopic imaging. The location of the Slot corresponds to the centerline of the Blade after it has reached full deployment.

**Surgical Note:** Each rotational ‘click’ on 12mm Sleeve corresponds to 1mm of axial travel (depth).

Rotate the BladeX Knob clockwise to extend the Blade until bone is contacted. Increased resistance when rotating the Knob serves as tactile feedback to the user that the Blade is in contact with bone. To start bone resection, rotate the entire BladeX Instrument a few turns (both clockwise or counterclockwise are acceptable and recommended). Continue alternating rotating the Knob clockwise (to further deploy the Blade) and rotating the Instrument assembly until the desired cutting diameter is achieved based on preoperative templating. When the Gauge reads “38”, a 38mm diameter cavity has been created.



**Surgical Note:** The user may choose to cut less than the maximum diameter allowed by the chosen Blade size to accommodate patient anatomy based on preoperative templating.

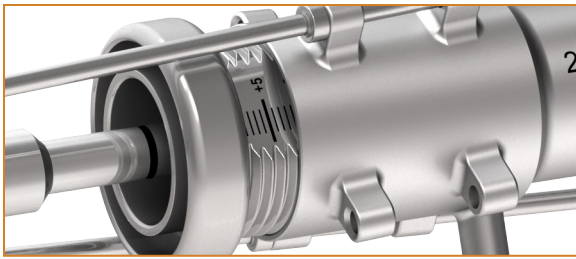


**Surgical Note:** When the Blade is fully deployed, the Knob will not allow more rotation as the Blade has reached the full travel.

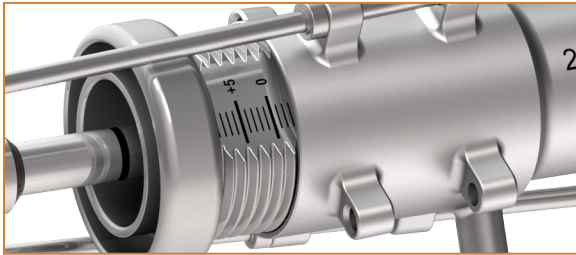
**Surgical Note:** Ensure that the BladeX handle remains in contact with the proximal surface of the 12mm sleeve during cutting.

Once the desired cavity has been created, turn the Knob counterclockwise until the Gauge reads “12” and then remove Instrument from the Cannula.





+2mm Sleeve Adjustment



-2mm Sleeve Adjustment

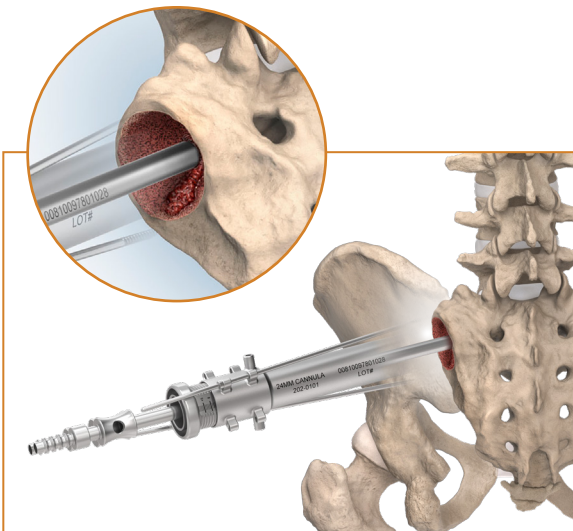
For cleaning, remove the central shaft of the cutter by rotating the knob counterclockwise and then pulling the shaft out. Dispose of the blade.

### (Optional) Depth Adjustment of BladeX MIS Decorticator

The resection depth may be increased or decreased by advancing the BladeX either further medial or more lateral. Precise control of the depth may be achieved by adjusting the 12mm Sleeve. Each rotational “click” of the 12mm Sleeve corresponds to 1mm of axial travel. Rotate the 12mm Sleeve counterclockwise to increase the height of the depth stop, and clockwise to decrease the height of the depth stop. Reset the BladeX gauge to read 12 and then redeploy to the new depth. Rotate the cutter to create a larger cavity.

**Surgical Note:** Do not retract the 12mm Sleeve beyond the ‘-15mm’ location and ensure that the BladeX handle remains in contact with the proximal surface of the 12mm Sleeve during cutting.

**Surgical Pearl:** When fully deployed, the cutting blade matches the alignment slot. These images demonstrate decortication at the maximal blade deployment. If further debridement is desired modification of the 12mm cannula depth can be completed here. The cutting blade would need to be retracted prior to decorticating deeper or shallower.



BladeX Cutting

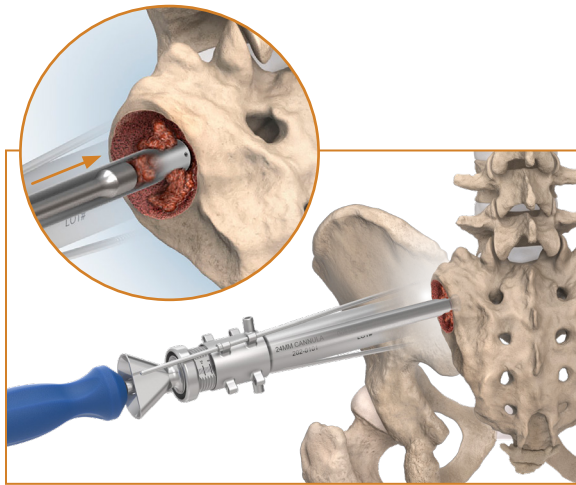


Suction Tube

### Step 10 Suction of Joint

Remove resected tissue by irrigating the joint and then using the Suction Tube. Irrigant can be flushed directly into the working portal or injected into the tube using the thumb-hole on the handle and pinching of the suction hose.

**Surgical Note:** Ensure that the tubing or connections do not get clogged with debris. Slow advancement of the suction tube into the cannula can help prevent this clogging. Use the long 3.2 guide wire to unclog suction tubing if clogging occurs.



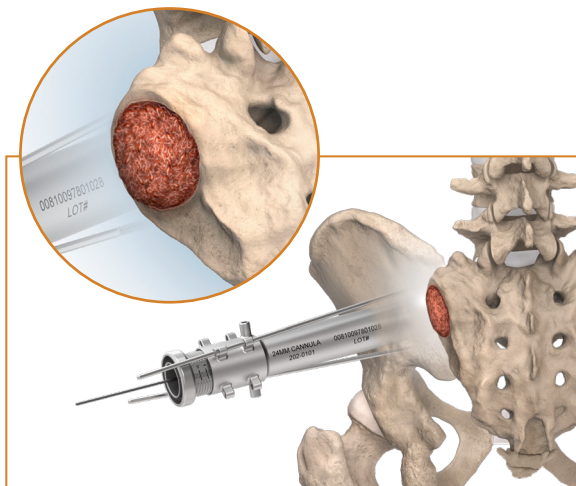
Graft Tube with Graft Ram inserted



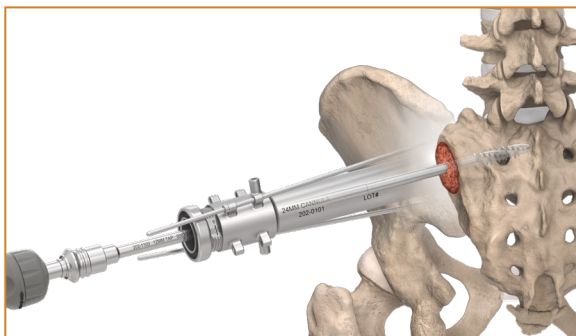
Graft Tube



Graft Ram



3.2mm Long Guide Wire insertion



Optional tapping

## Step 11

### Allograft/Autograft Insertion

Load the Graft Inserter with the selected amount of allograft or autograft material.

**Surgical Note:** The Integrity-SI system and implants is only intended for use with autograft or allograft.

**Maximum Decortication  
Cavity Diameter\***

38mm

**Cavity Volume  
Created\***

6.5cc

\* with BladeX Decorticator blade at full extension

**Graft component**

**Volume Capacity**

Graft Tube

17cc

Graft Funnel

12.5cc

Insert the loaded Graft Funnel through the 12mm Sleeve until the rim is flush with the proximal surface of the 12mm Sleeve, establishing the appropriate depth. This will align the distal opening of the Graft Tube with the cut cavity space. Insert the Graft Ram through the Graft Tube until bottoming out.

## Step 12

### Long 3.2mm Guide Wire Re-Insertion

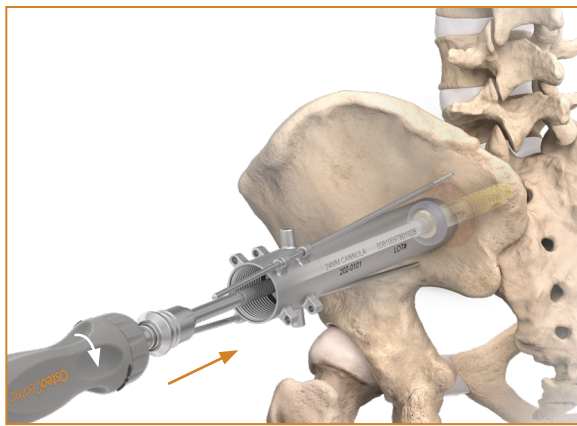
Re-insert the 12mm Dilator through the 12mm Sleeve. Insert the Long 3.2mm guide wire through the Dilator. Utilizing c-arm images, ensure the wire trajectory is correct and safe. Advance to the desired depth to match the initial guide wire placement depth. It is recommended to confirm placement with fluoroscopy using inlet and outlet images.

Once confirmed, the 12mm cannula and stabilization pins can be removed. The only remaining instrumentation should be the 24mm working cannula and the 3.2 mm guide wire.

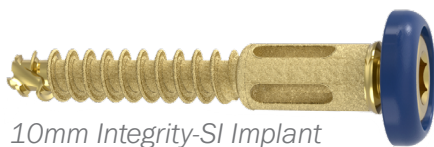
**Surgical Note:** This should follow the initial trajectory as long as the cannula has not shifted from decortication.

## Tap

Prior to implant insertion, if tap is deemed necessary based on patient anatomy and bone quality, a tap can be utilized.



*Integrity-SI implant insertion*



*10mm Integrity-SI Implant*



*12mm Integrity-SI Implant*



*Hex Driver*

### Step 13 Primary Implant Insertion

Select Implant size and remove the desired implant from the sterilization tray. Connect the Large Hex Driver to the Inline Ratcheting Handle. Engage the Implant and insert over the long 3.2 guide wire. Insert the implant until it is nearly (<1.5cm) fully seated against the ilium bone.

Before final seating and placement of the implant, remove the Driver but do not remove the long 3.2 guide wire.

Remove the 24mm cannula. Then clear any gluteal fascia entrapped under the washer before final seating.

Leave the long guide wire in place if the surgeon is planning on placing the secondary 6.5mm implant for additional rotational stability.

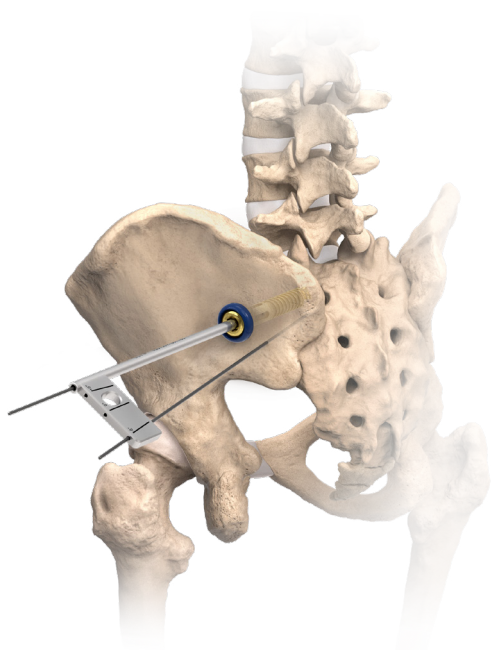
**Surgical Pearl:** When selecting implant length, ensure that a length is selected that is within 3mm of the measurement made by the Length Guide. This will ensure ideal fixation at the distal portion of the implant. If performing Bi-lateral getting as close to, but not passing mid-line, of the sacrum is recommended. The large hex driver fits all three implant offerings.

**Surgical Note:** After removing the cannula, seat the implant against the outer cortex of the ilium. Check with an AP view with a 20° - 30° degree rollback tilt to view the lateral table in profile to ensure the implant is flush with the outer cortex of the ilium. Also ensure to not intrude the lateral wall of the ilium or strip the implant's torque.

**Surgical Pearl:** It is helpful for the surgeon to use their finger to clear gluteal fascial tissues from the undersurface of the washer to prevent entrapment of the gluteal tissues against the lateral wall of the ilium.

### Secondary 6.5mm Implant Wire Guide & 2.0 Guide Wire Insertion

If a secondary fastener is desired to add additional rotational stability, then follow the remaining steps.



*2.0mm Wire Guide and  
2.0mm guide Wire insertion*

### **Step 14** **2.0 Wire Insertion**

Insert the 2.0mm Wire Guide over the Long 3.2mm guide wire and insert until the distal tip contacts the Implant surface. Maintain contact with the Implant and insert the 2.0mm guide wire through the desired hole of the 2.0 Wire Guide. Insert the 2.0mm guide wire to the desired depth of the screw. Remove the 3.2mm guide wire and then remove the 2.0 Wire Guide. Ensure to leave the 2.0mm guide wire in place.

**Surgical Note:** The 6.5mm secondary implant may not be used by itself and is only intended for use with either the 10mm, or 12mm Primary Implant.

**Surgical Note:** It is recommended that the secondary implant be placed directly caudal to the primary implant when the primary implant is placed into the upper sacral segment. With this practice, the implant is directly under the primary implant on the inlet view and hidden on the image and directly caudal and convergent/parallel/divergent on the outlet view.



*2.0mm Wire Guide*



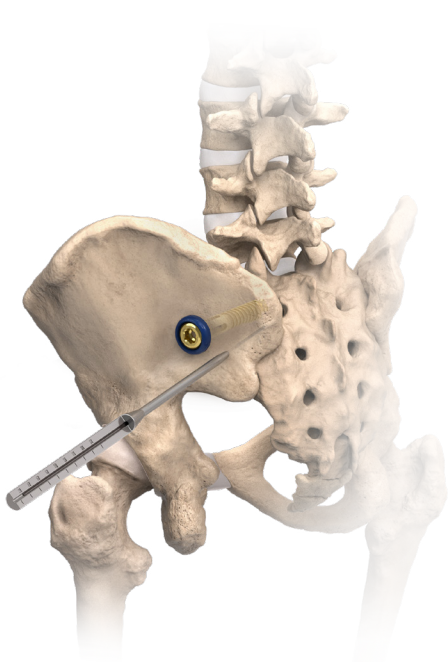
*Guide Wire Demonstration Parallel*



*Guide Wire Demonstration +8 degrees*



*Guide Wire Demonstration -8 degrees*

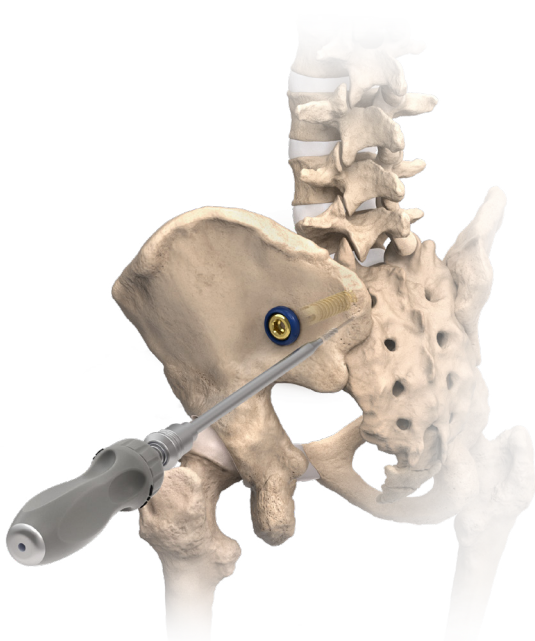


*Secondary Depth Gauge*

### **Step 15**

#### **Measure Length of Secondary Implant**

Measure the length by placing the Secondary Depth Gauge over the 2.0mm guide wire. The end of the wire indicates the length of implant needed.



*Bone Preparation for 6.5mm Secondary Implant*

### **Step 16**

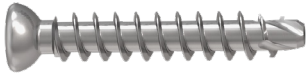
#### **Bone Preparation for Secondary Implant**

Connect the 4.0mm drill to the Inline Ratcheting Handle or T-handle.

Insert the Drill over the 2.0mm guide wire and advance just through the outer ilial cortex. Ensure the 2.0mm guide wire does not advance and remains in place.

**Surgical Pearl:** Care must be taken to ensure the pin does not bind on the drill and come out. If this is noticed on the imaging, a 2nd guide wire can be used through the drill cannula to push out the guide wire to its original place. Often, simply drilling to the SI joint is far enough.

6.5mm Secondary Implant



6.5mm Secondary Implant Insertion

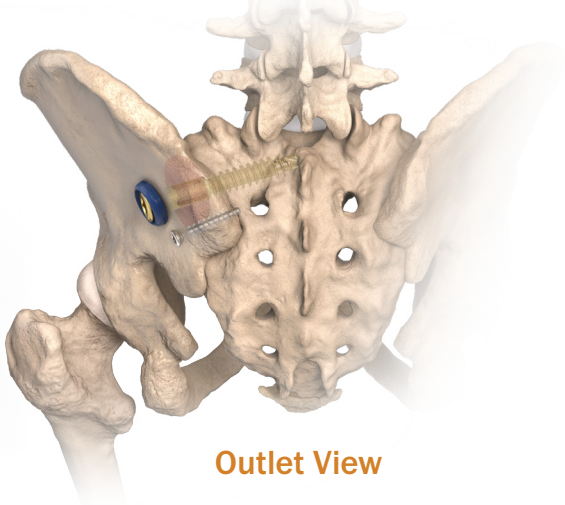
## Step 17

### 6.5mm Secondary Implant Insertion

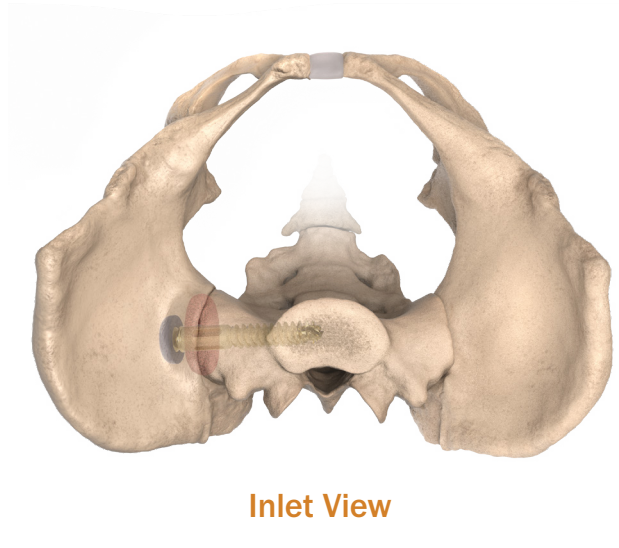
Connect the Small Hex Drive to the Inline Ratcheting Handle. Engage the 6.5mm implant and insert it over the 2.0mm guide wire. Advance until fully seated against the bone.

**Surgical Pearl:** Great care must be taken to ensure that the guide wire does not inadvertently advance when inserting the implant. Following the implant advancement with fluoroscopic guidance is recommended with this step.

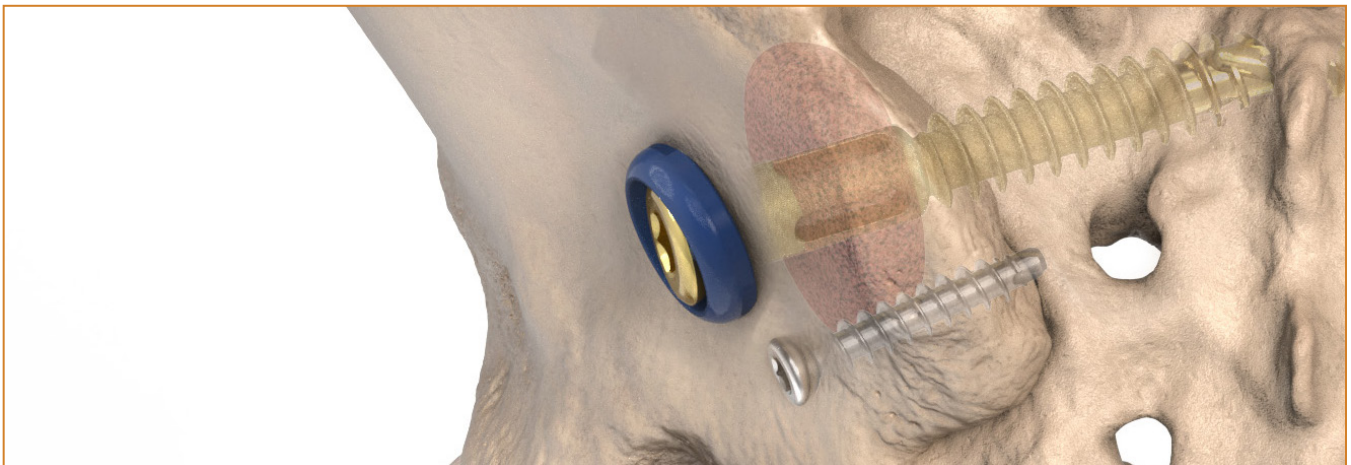
**Ensure all Instruments Have Been Removed.**



Outlet View



Inlet View



Final Integrity-SI Fusion System Implant Construct

# Implant Removal



## Implant Removal

If either the 10mm, or 12mm Integrity-SI implants need removal then the Removal Tool may be utilized.

Utilizing the Dilators and Cannula, obtain access to the implant. Insert the Removal Tool through the Cannula and engage the hex of Removal Tool to the Implant.

Next, rotate the knob clockwise to thread into the implant ensuring that the implant is captured.

To remove the implant, rotate the Removal Tool handle counterclockwise to unscrew the Integrity-SI implant from the bone.

**Surgical Pearl:** It is often helpful to re-cannulate the implant with the 3.2 mm guide wire and partially remove the screw with the primary implant screwdriver. Typically 1-2 cm is sufficient. Then, remove the primary screw driver and long 3.2mm guide wire, and replace with the Implant Removal Tool. At this stage, the hex removal tool can be used as described above.

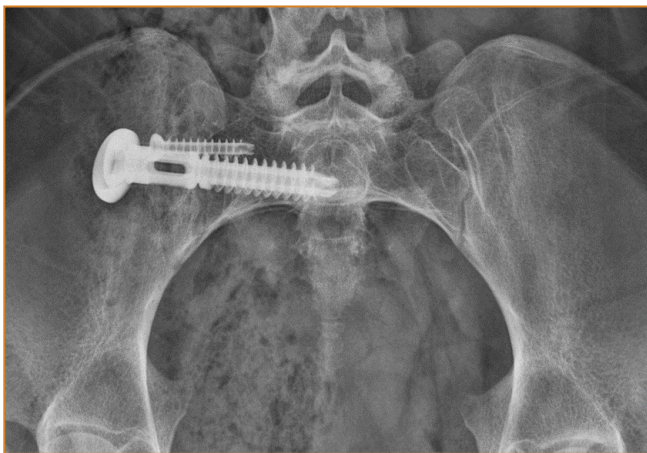
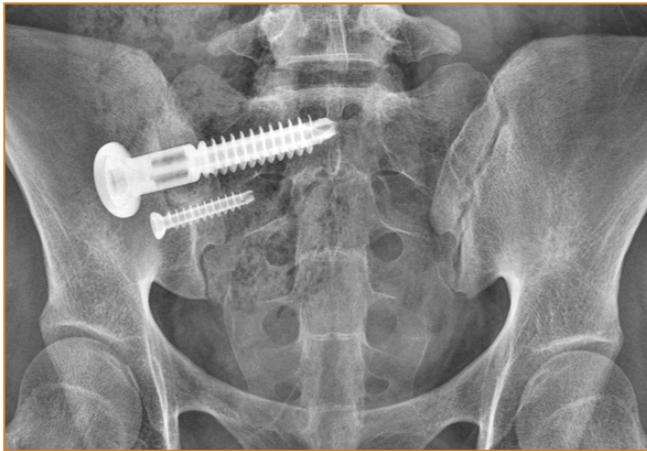
## Contraindications:

Contraindications for the Integrity-SI Fusion System include the following:

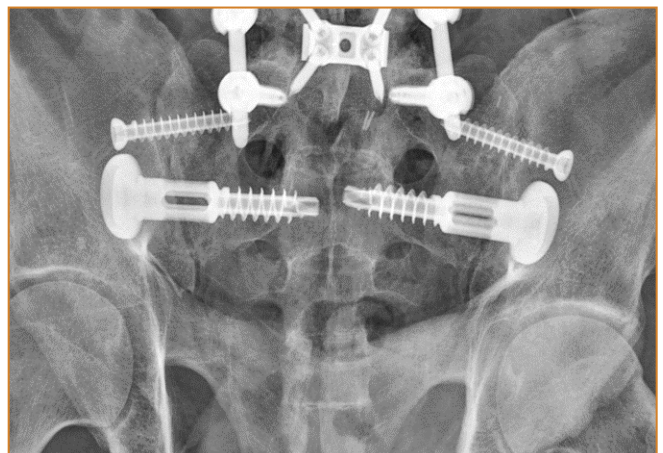
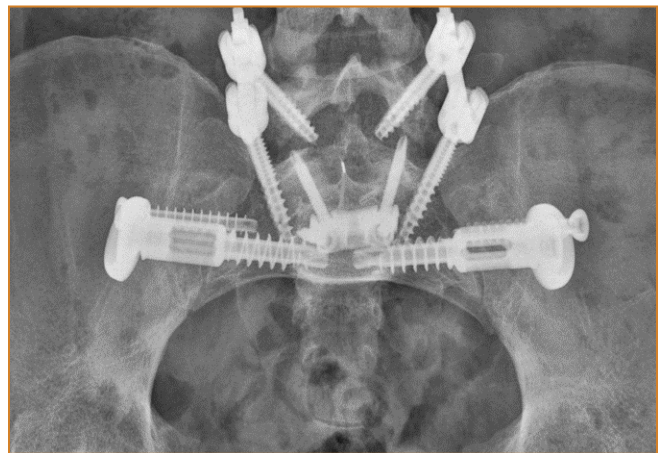
1. Deformities or anatomic variations that prevent or interfere with placement of the Integrity-SI Fusion implants
2. Tumor of sacral or ilial bone
3. Active infection at treatment site
4. Unstable fracture of the sacrum or ilium that involves the sacroiliac joint
5. Allergy to metal implants

# Integrity-SI Implant Construct Examples

Example of patient with unilateral implant construct.



Example of patient with bilateral implant construct.





# Integrity-SI Fusion System Instrument List

	Part number	Description
<b>BladeX® MIS Decorticator</b>	202-0001	BladeX Cutter
	202-0002	Central Shaft
	202-82038	Blade, 38mm
<b>Guide Wires/Pins</b>	202-80100	2.0mm Guide Wire
	202-80200	3.2mm Guide Wire - long
	202-80300	3.2mm Stabilizing Guide Pin
<b>Drills</b>	202-80403	12mm Drill
	202-80402	7.5mm Drill
	202-80401	6.0mm Drill
	202-80400	4.0mm Drill
<b>Taps</b>	202-1101	6.5mm Tap
	202-1102	10mm Tap
	202-1103	12mm Tap
<b>Cannulas</b>	202-0101	24mm Cannula
<b>12mm Sleeve</b>	202-0102	12mm Sleeve
<b>Impactor</b>	202-1001	Impactor
<b>Dilators</b>	202-0104	12mm Dilator
	202-0105	18mm Dilator
	202-0106	24mm Dilator
<b>Depth Gauges</b>	202-0203	Primary Depth Gauge
	202-0202	Secondary Depth Gauge
<b>Graft Inserter</b>	202-0301	Graft Inserter
	202-0302	Graft Inserter Ram
<b>Hex Driver</b>	202-0401	Hex Driver - 7.9mm
	202-0402	Hex Driver - 4.3mm
<b>Removal tool</b>	202-0501	Removal Tool
<b>Suction Tube</b>	202-0601	Suction Tube
<b>2.0 Wire Guide</b>	202-0701	2.0 Wire Guide
<b>Handles and Tray</b>	202-0801	Inline Ratcheting Handle
	2004-0009	T-Handle
	202-90000	Instrument Tray
	202-90104	Implant and Blade Tray

# Integrity-SI Fusion System Implant List

	Part number	Length (mm)
<b>12mm Primary Implants</b>	202-12050	50
	202-12055	55
	202-12060	60
	202-12065	65
	202-12067	67.5
	202-12070	70
	202-12072	72.5
	202-12075	75
	202-12077	77.5
	202-12080	80
	202-12082	82.5
	202-12085	85
	202-12090	90
	202-12095	95
	202-12100	100
202-12105	105	
202-12110	110	
<b>10mm Primary Implants</b>	202-10050	50
	202-10055	55
	202-10060	60
	202-10065	65
	202-10067	67.5
	202-10070	70
	202-10072	72.5
	202-10075	75
	202-10077	77.5
	202-10080	80
	202-10082	82.5
	202-10085	85
	202-10090	90
	202-10095	95
	202-10100	100
202-10105	105	
202-10110	110	
<b>Optional 6.5mm Secondary Implant</b>	202-65030	30
Note: The 6.5mm Secondary Implant can only be used in conjunction with a 10mm, or 12mm Primary Implant.	202-65035	35
	202-65040	40
	202-65045	45
	202-65050	50



**Note:**

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