

PRODUCT GUIDE

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# SHUKLA BLADE

Universal Flexible Osteotome Solution



**SHUKLA MEDICAL®**

Universal Orthopedic Extraction Technologies

*Revolutionizing the Art of Revision Surgery*

# SHUKLA BLADE

## Universal Flexible Osteotome Solution

**System Name: SHUKLA Blade v1**

### Primary Use

The SHUKLA Blade (Universal Flexible Osteotome Solution) is designed to be used in any orthopedic revision surgery that calls for osteotomes in order to loosen the interface between the implant and the bone or bone cement. The system includes blades for general orthopedic, knee specific and hip specific applications as well as numerous tip and blade configurations that all flex to conform to the implant geometry. This system was designed to prepare implants for removal as well as to ensure minimal bone loss.



### System History

Good things come to those that wait, which is probably why our brand new Shukla BLADE system is so amazing. In development since 2009, our engineers have been hard at work making sure that our flexible osteotome system is the best in the business. What began as an initial request by Dr. Chiang soon became a universally desired product from Shukla. Why Shukla? Because by now surgeons and hospitals know a Shukla set is a one stop shop for whatever problem they are dealing with. We just do things better. With the feedback from tons of sales reps, surgeons, and professionals, we developed the debut v1 of the BLADE system. It is currently the “new kid on the Shukla block” as it were.

#### Version History

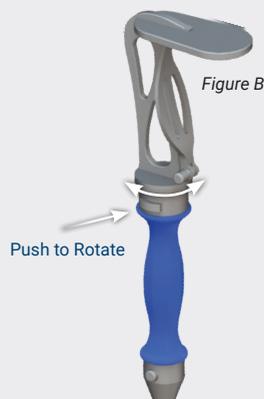
- 2019: Version 1 Introduced

## Key Benefits

- Osteotome handle is push to connect on both sides. In the front for the blades themselves, and in the back for attachments.
- Calcar Blade designed to reach the previously difficult calcar region of the femoral neck.
- Huge variety - rounded tip blades, flat tip blades, curved blades, straight blades - more lengths, more widths, more shapes than any on the market.
- Strike Plate attachment allows blades to be tapped into the bone or tapped out from being stuck in bone.
- Esse Blades use their unique "Z" shape to reach hard to get soft tissue in the knee.
- Minimize lost time searching for the right osteotome. The whole family is here.
- Single use blades guarantee the sharpest osteotome blade every time.
- Strike Plate attachments can be set in any of eight configurations, allowing it to work from any angle.

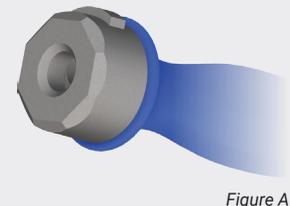
### Strike Plate Orientation

The rear chuck edge is surrounded by 8 chamfers (Fig A), allowing 8 functional orientations for the Strike Plate & Extended Strike Plate which may be used in the surgeon-preferred orientation.



#### Changing Strike Plate Orientation (Fig B,C)

1. Press and hold the handle release button.
2. Rotate the device to the desired position.
3. Release the button.
4. Check that the device is secure in the new position.



- The Shukla System Universal Benefits
  - Reduces risk of infection to patient
  - Reduces time spent under anesthesia
  - Reduces cost to the hospital
  - Reduces overall time in the O.R.
  - Reduces surgeon stress

## Alternative Method Comparison

Before our calcar blade was made, the only reliable method of breaking apart the bony interface of the calcar region was by running k-wires down side by side since a traditional osteotome wouldn't reach. Other sets on the market lack our comprehensive range of blades as well as the simple push to connect capability of our handle. Basically, move over Marvel - there is a new Blade in town.



*K-Wires inserted into the calcar bone, causing a much higher rate of bone loss.*



*Calcar Blade inserted into the calcar bone, causing minimal bone loss because our engineers are amazing*

## Return-On-Investment Justification

According to a study published in *JAMA Surgery*, the cost of one minute in an O.R. can vary anywhere from \$36 per minute to \$100 per minute with the average cost of a minute in the O.R. a staggering \$66! Taking just the lowest estimate of time savings, the savings per surgery can be estimated at 30 minutes x \$36 per minute = \$1,080. A SHUKLA Blade set at the current (2019) price sells at \$13,500. At this price, when you use the system a mere 13 times, the full purchase price is recovered. As a rule of thumb, it can be stated that every time a SHUKLA system is used in surgery, the hospital saves a minimum of \$1,000. Considering that in many cases SHUKLA can save hours instead of just minutes, the savings accrue fast.

## When You Don't Have It

Picture in your mind this scenario: Patient Bob Badhip comes in, in need of a hip revision. You start the procedure, and everything is great. But, oh no! That pesky hip stem got all sorts of integrated with bone with its porous interface. Not a problem - you have a generic osteotome. All good, right? WRONG. It's not only the wrong width, but it isn't long enough. It gets stuck because the tip was flat instead of curved. Your slap hammer seems helpless with removing it from the bone. The minutes keep ticking by. You try k-wires, and they do the job...but at what cost? \$62 a minute on average - that is the cost.

Or, you get the Shukla Blade system, and have so many osteotomes at your disposal that you can use the extras to pretend you are Wolverine.

## How We Compare

The patented Esse blades and Calcar blade eliminate the frustration surgeons have with common issues in hip and knee revision surgeries. K-wires are a thing of the past with this system - all of the issues other products on the market had, the Shukla Blade system trivialize. More sizes. More lengths. More widths. More styles. More solutions. More awesomeness. That's the Shukla way.

$$\{ \text{MIN} (\Delta V_{\text{Bone}}) + \text{MAX}(n_{\text{Blades}}) + \text{Handle}_{\text{PTC}} \} > \text{Competition}$$

*Very scientific mathematical inequality proving why the Shukla Blade set is superior*

The engineers at Shukla are the best at what they do. They've worked hard to create several ingenious patented items just for the Shukla Blade flexible osteotome system.

Our engineers rock - the tools and instruments they come up with are wonderful and help make every step of the process easier.

- ### PATENTS
- Osteotome Handle
  - Extended Strike Plate
  - Calcar Blade
  - ESSE Blade
  - Slide Hammer



#### Osteotome Handle

All blades and accessories attach quickly and easily with a push-to-connect chuck at either end of the handle, detaching with the push of a button to allow simple interchange of devices as needed during the case.

#### Extended Strike Plate

Used to apply greater impact force to the blade. The distance from handle to impact surface allows a greater range of motion for mallet strikes, increasing crucial impact force. A retractable hand guard protects user during heavy mallet strikes.

#### Calcar Blade

The calcar blade is designed to break up proximal bone or bone cement interface at the calcar.



#### ESSE Blades

The offset geometry of the ESSE blades is able to bypass soft tissue surrounding the femoral component without requiring retraction, allowing faster access to the implant interface.

#### Slide Hammer

The Slide Hammer may be used to apply impact force in either antegrade or retrograde directions, reducing user fatigue thanks to its ergonomic grip. It can be readily attached or removed from the rear Push-To-Connect chuck on the osteotome handle.



## Attention to Detail

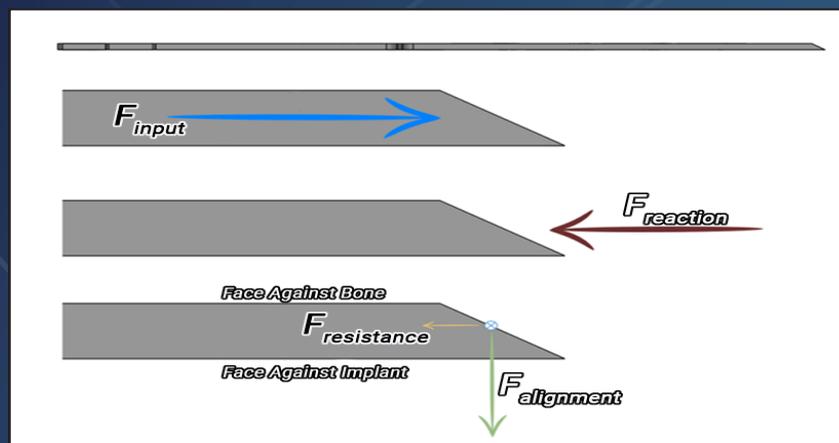
The patented osteotome handle allows attachments to pivot into eight different positions without the need to even remove it from the push to connect mechanism. The tiny calcar blade was engineered for a specific issue many surgeons had to face. The blades were created with a variety of shapes, widths, and lengths to ensure that no matter the bone that appears before you, you can osteotome the hell out of it. Our blades are beveled only on one side to maximize alignment force with the implant to minimize risk of bone loss. *That is why Shukla rocks - we focus not only on the big picture, but the small details.*

### REVEL IN THE BEVEL

A single bevel blade may seem like a standard, simple way of sharpening an object, but why is it done this way? Everything in this world obeys the laws of physics. Every heard of Isaac Newton? Of course you have he's the godfather of modern physics. He developed Newton's 3 laws of motion that are ingrained in everybody's head from an early age. However, we only need to pay attention to the third law:

For every action, there is an equal and opposite reaction

Take a look at the following diagram.



The input force is the force we are putting into the blade, this would be the force from the mallet or slap hammer. The bone is imparting a reaction force on this. The resistance force in the diagram below is very small and this is the force that needs to be overcome in order to drive the blade into the bone. The interesting force here is that alignment force. This is a substantial force that is pushing the flat side of the blade against the implant to keep it from migrating out into bone. This simple force is one of the keys to bone preservation in the osteotome blades.

#### Blade Direction

Blade edges are beveled, with one side longer than the other. Use blades with the longer side against the implant (Fig A, B). This creates a force that helps to keep the blade against the implant as the surgeon drives it forward.



## Quotes

“The Shukla Blade is an amazing system designed by incredibly talented engineers. Just super smart people. Best in the business, really.” ~ Brian Servedio, Engineer

“The Shukla Blade system is unparalleled in the market today. It is going to change the face of the market.” ~ Ashley Cheshire, Marketing

“They’re a game changer!” ~ Dr. Leo Whiteside

“Two thumbs up.” ~ Dr. Matthew Jones

## Components List

Part #	Description	Std Qty
SCS009	Case, Blade System	1
SCS010	Tray, Blade System	1
SCS011	Lid, Hip, Knee, Broken & Stripped, Blade Systems	1
SHN012	Handle Assy, Osteotome, Push-to-Connect	1
SHN012	Handle Assy, Osteotome, Push-to-Connect	1
SIN005	Hammer Assy, Slide	1
SMS019	Strike Plate	1
SMS023	Strike Plate, Assy, Extended	1
SOS006-01	Blade, Flat, 8 mm x 5 cm, Single Use	2
SOS006-02	Blade, Flat, 8 mm x 11 cm, Single Use	2
SOS006-03	Blade, Flat, 10 mm x 5 cm, Single Use	2
SOS006-04	Blade, Flat, 10 mm x 11 cm, Single Use	2
SOS006-05	Blade, Flat, 12 mm x 5 cm, Single Use	2
SOS006-06	Blade, Flat, Round Tip, 12 mm x 5 cm, Single Use	2
SOS006-07	Blade, Flat, Round Tip, 20 mm x 11 cm, Single Use	2
SOS006-08	Blade, Flat, 20 mm x 11 cm, Single Use	2
SOS007-01	Blade, Cupped, 10 mm x 11 cm, Single Use	2
SOS007-02	Blade, Cupped, 12 mm x 11 cm, Single Use	2
SOS007-03	Blade, Cupped, 14 mm x 11 cm, Single Use	2
SOS007-04	Blade, Cupped, 16 mm x 11 cm, Single Use	2
SOS007-05	Blade, Cupped, 20 mm x 11 cm, Single Use	2
SOS008-01	Blade, Curved, for Lateral Hip, 12 mm x 11 cm, Single Use	2
SOS008-02	Blade, Curved, for Lateral Hip, 12 mm x 16 cm, Single Use	2
SOS008-03	Blade, Curved, for Medial Hip, 12 mm x 11 cm, Single Use	2
SOS008-04	Blade, Curved, for medial Hip, 12 mm x 16 cm, Single Use	2
SOS009	Blade, ESSE, Flat Tip, 16 mm x 2 cm, Single Use	2
SOS016-01	Blade, Flat, 6 mm x 3 cm, Single Use	2
SOS016-02	Blade, Flat, 6 mm x 9 cm, Single Use	2
SOS025	Blade, for Calcar, 8 mm x 3 cm, Single Use	2
SOS026	Blade, ESSE, Round Tip, 16 mm x 2 cm, Single Use	2



*Revolutionizing the Art of Revision Surgery*

**Shukla Medical** designs & manufactures instrumentation for orthopedic implant extraction in St. Petersburg, Florida, USA.

In 1998, aerospace component manufacturer S.S. White Technologies, Inc. acquired the Snap-On Winquist IM Nail system. S.S. White rebranded the medical division in 2007 to create Shukla Medical.

Today, Shukla Medical is the industry leader in orthopedic implant extraction tools. We are the only company to offer a comprehensive, truly universal orthopedic revision line for removing IM nails, hip and knee implants, spine hardware, and broken or stripped screws. Surgeons and industry leaders know: **If Shukla can't get it out, no one can.**

Contact us to learn more

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