

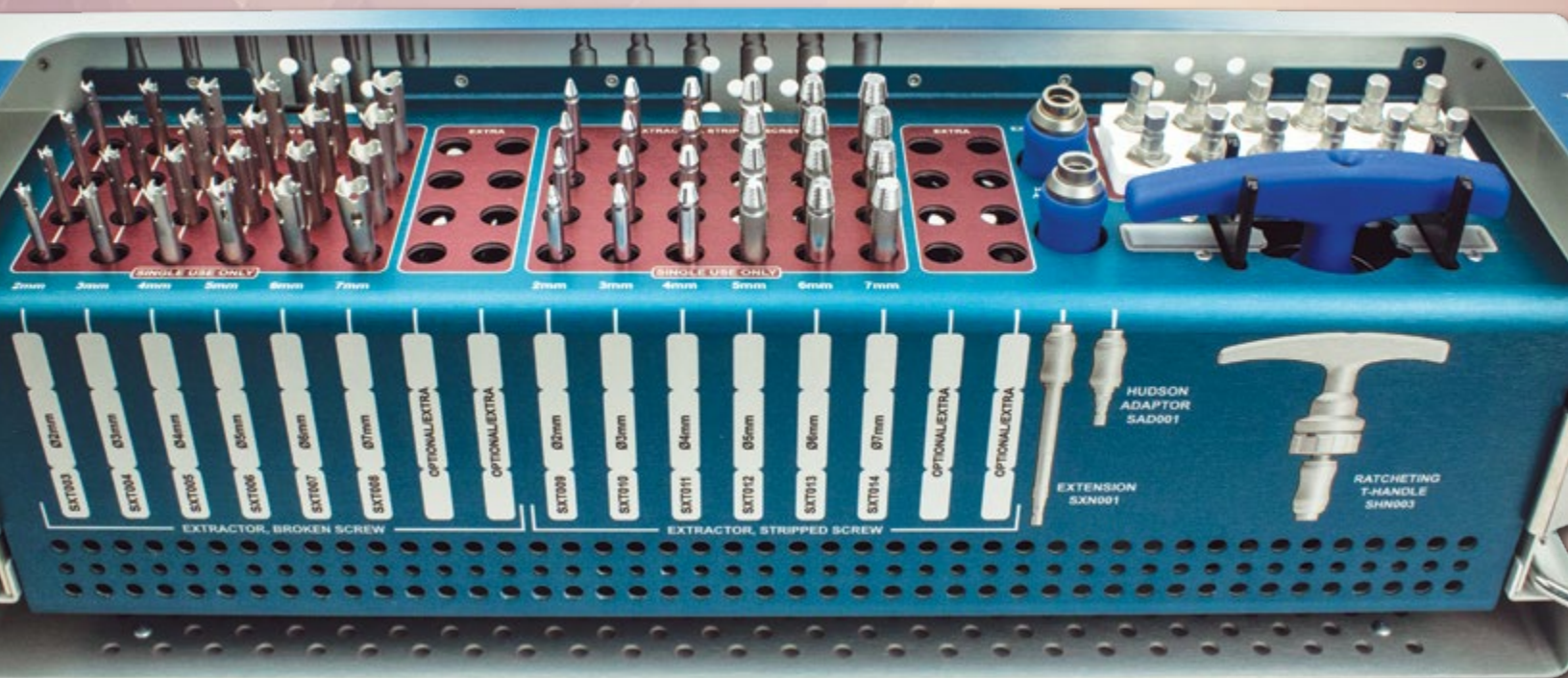
PRODUCT GUIDE

SHUKLA SCREW

Universal Broken & Stripped Screw Extraction Solution

#3

System 3 of 15



SHUKLA MEDICAL®

Universal Orthopedic Extraction Technologies

Revolutionizing the Art of Revision Surgery

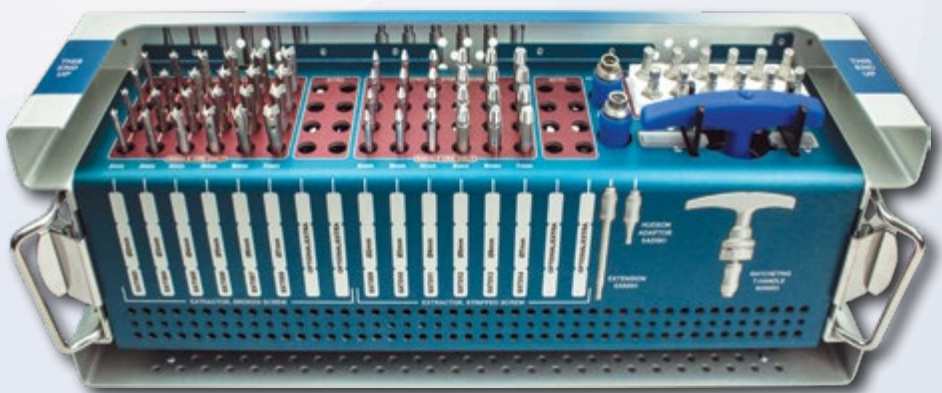
SHUKLA SCREW

Universal Broken & Stripped Screw Extraction Solution

System Name: SHUKLA Broken & Stripped Screw v3

Primary Use

The SHUKLA Broken & Stripped Screw system is a universal screw removal system designed to remove all broken, stripped, and seized bone screws with minimal bone loss to the patient. This set is perfect for all spinal and orthopedic surgical procedures.



System History

The original version of the SHUKLA Screw system was the first system developed internally after the acquisition of Snap-On Medical. At the time, the market was not offering anything even remotely universal and we knew we could do it better than anyone else. The original Screw was born from the frustration of surgeons trying to remove a screw that had been broken or stripped prior to or during the revision surgery.

In 2007, SHUKLA Screw version 1 (v1) made the smart move towards disposable extractors, eliminating the issue of metal on metal galling ruining the integrity of the extractors, as well as eliminating the need of cleaning intricate geometry. The v1 was so effective at removing broken & stripped screws that surgeons and hospitals found it difficult to imagine, believing the claims of removing screws in seconds to be absurd. Our Product Manager then created the Bone Block Demo, which proved to be a complete game changer. The act of actually seeing the SHUKLA Screw in action turned skeptics into believers, and the system began to fly off the shelves.

The current v2 of the system launched in 2016 and added a ton of improvements to an already stellar set.

1999: Snap-On Introduced

2007: Version 1 Introduced

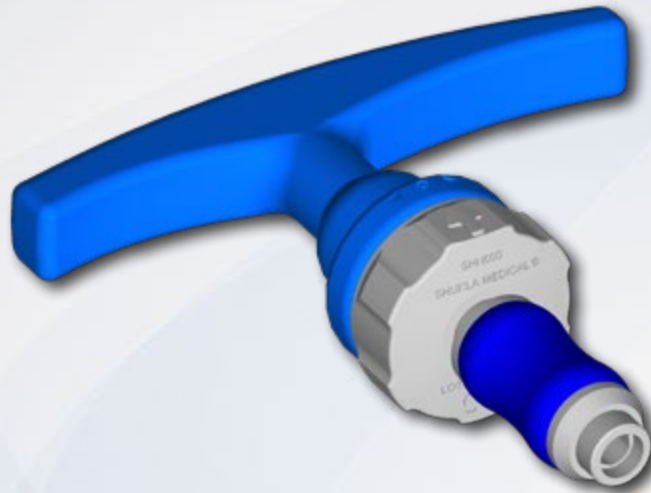
- Bone Block Demo
- Disposable Extractors

2016: Version 2 Introduced

- Carbide Drill Bits
- Extractors Increased to 6" Length
- Quick Connect Hudson Power Adapter

Key Benefits

- Ratcheting quick connect T-Handle with locking capability and ergonomic design grants easier and simpler screw removal with less fatigue.



- Hudson Power Adapter lets surgeons connect to a power drill for even faster screw removal.
- Carbide Drill bits allow for the creation of a well when one isn't readily available. The carbide tips make short work of all commonly used orthopaedic metals.



- Reverse threads quickly engage with the broken or stripped screw and remove it with ease.
- Universal compatibility - six sizes of Stripped Extractors, six sizes of Broken Extractors, and six sizes of Drill Bits ensure that no screw can escape the grasp of Shukla.
- Minimize bone loss - less cost to the O.R., less risk to the patient. Our extractors remove the screw with an amazingly low amount of bone loss.

Universal Shukla System Benefits for Better Patient Outcomes

Less Time Spent in O.R.

- Reduces risk of infection to patient
- Reduces time spent under anesthesia
- Reduces cost to the hospital

Ergonomic Design

- Reduces surgeon stress
- Reduces surgeon fatigue
- Better grip/reduces slippage

Universal Designs

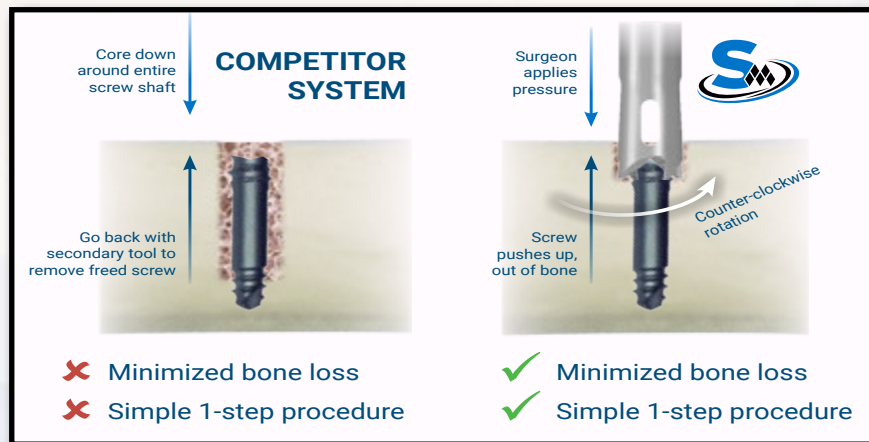
- Less prep time for surgeons
- Less space taken up in the O.R.
- Reduces need for other systems or tools

Comprehensive Design

- Addresses all known challenges
- Tools ensure surgery is a success
- Provides backup solutions during surgery

Alternative Method Comparison

Before Shukla arrived on the scene with this revolutionary screw extraction system, surgeons had to do a lot of prep or a lot of waiting to get broken or stripped screws removed. Without the SHUKLA system, surgeons would need to core the bone down around the screw shaft and use a second tool to try and remove the shaft. This would lead to higher O.R. costs, lower success rates, higher surgeon frustration, and lower patient satisfaction. The SHUKLA Screw helps alleviate all of those issues.



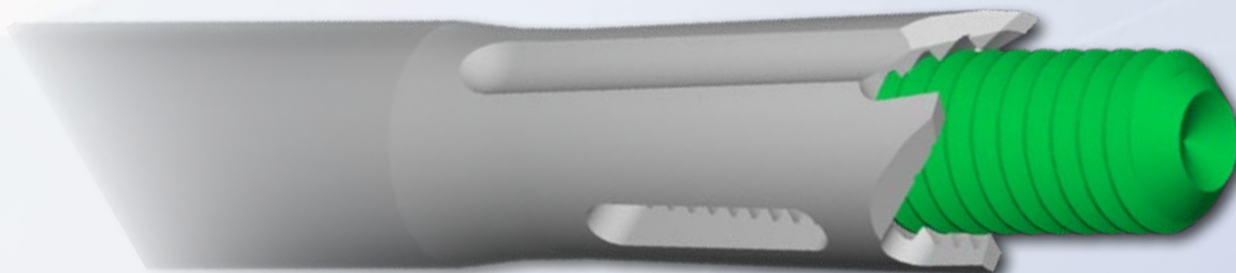
Return On Investment Justification

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. at a staggering \$66! Using this system, you can save anywhere from 30 minutes to 60 minutes per surgery. With the SHUKLA system, what used to take anywhere up to 60 minutes can be accomplished faster than it took to type this sentence. At an average savings of 45 minutes per surgery and using the lowest O.R. rate of \$36/minute, the savings per surgery comes to an average of \$1,620. A SHUKLA Screw v3 sells for \$19,600, meaning that even at the lowest cost per minute in the O.R. it would only take 12 uses to fully pay itself off.

When You Don't Have It

Not having our system in the O.R. for a case leads to two inevitable conclusions - 1: Your O.R. costs will rise substantially, and 2: Bone loss potential goes off the charts. Picture this: As a surgeon, you have a patient with several broken and stripped screws. You have to use a bone chisel to chip away at the bone around the screw, meaning later on you need to spend time and money on bone cement or a biologic. You would have to use pliers to grip the exposed screw and twist it out, hoping it doesn't break further. Each screw takes close to an hour.

Or you can use a SHUKLA Screw system and save yourself time, effort, and frustration.



How We Compare

Most orthopaedic implant manufacturers provide revision/extraction tools suited *only* for their own implants. Even suppliers that claim to offer extraction sets basically have an assortment of tools thrown together as an afterthought. For Shukla Medical, **extraction is what we do**. Our engineers design truly universal tools to help remove any implant/hardware out there, making our competition essentially nonexistent. Our patented designs are revolutionizing the art of revision surgery; we proudly stand alone. We have still tried to provide a comparison to other systems on the market.

Shukla Medical's superior designs are quickly becoming the industry standard in screw removal in a market dominated by a single competitor. Our competitor's system utilizes a multi-step process where the surgeon needs to ream the entire length of the screw to then grab the proximal end. This sometimes creates a void or defect that may need to be filled with biologics. The SHUKLA Screw system, by contrast, is a single-step process that grabs the screw from the proximal end and removes it in mere seconds without creating any large voids or bone loss.

The tips provided by the competition are much shorter than the SHUKLA Screw extractor tips. Their largest extractor is only 7.5mm, while we offer extractors up to 11mm. For stripped extractors, the competition's largest extractor is only 3.5mm while our largest is 11mm. The SHUKLA system also offers a stand-up tray which allows for easy view of the extractors thereby making selecting the proper tip a breeze.

The SHUKLA Screw system is incredible at what it does, and that is because of our engineering team.

Their patented Broken and Stripped Screw Extractors are a big part of why our Screw set is so powerful.

PATENTS

- Broken Screw Extractor
- Stripped Screw Extractor

Broken Screw Extractor

- Extended neck length to help reach deeply buried screws.
- Bone clearing window to allow bone to pass through to prevent blockage.
- Tapered reverse threads capture the screw quickly.
- Trephine teeth cut through bone with ease.

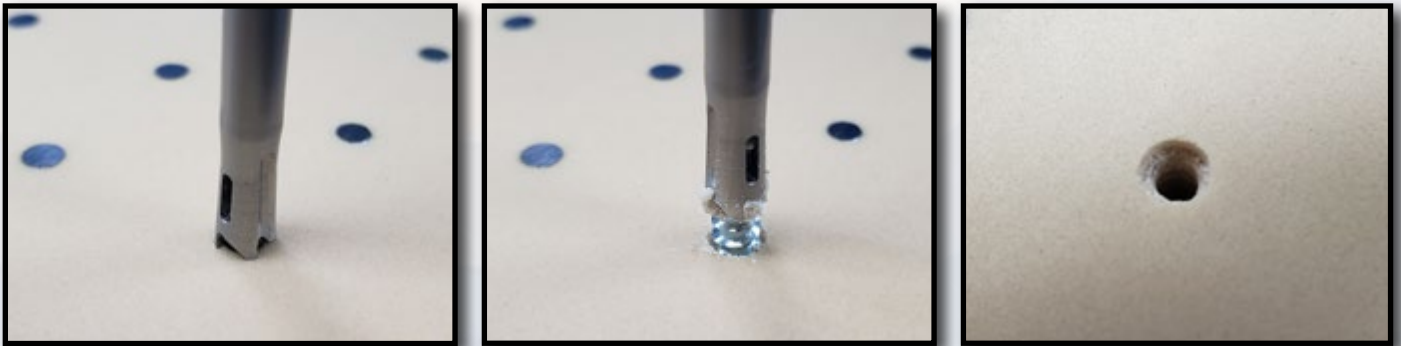
Stripped Screw Extractor

- Low profile angle to help reach further. Can even go through spinal tulips to get to the screw inside.
- Reverse threading cuts new threads into the wall of the stripped screw well.
- Tapered so that it can be used on a wider range of screws.



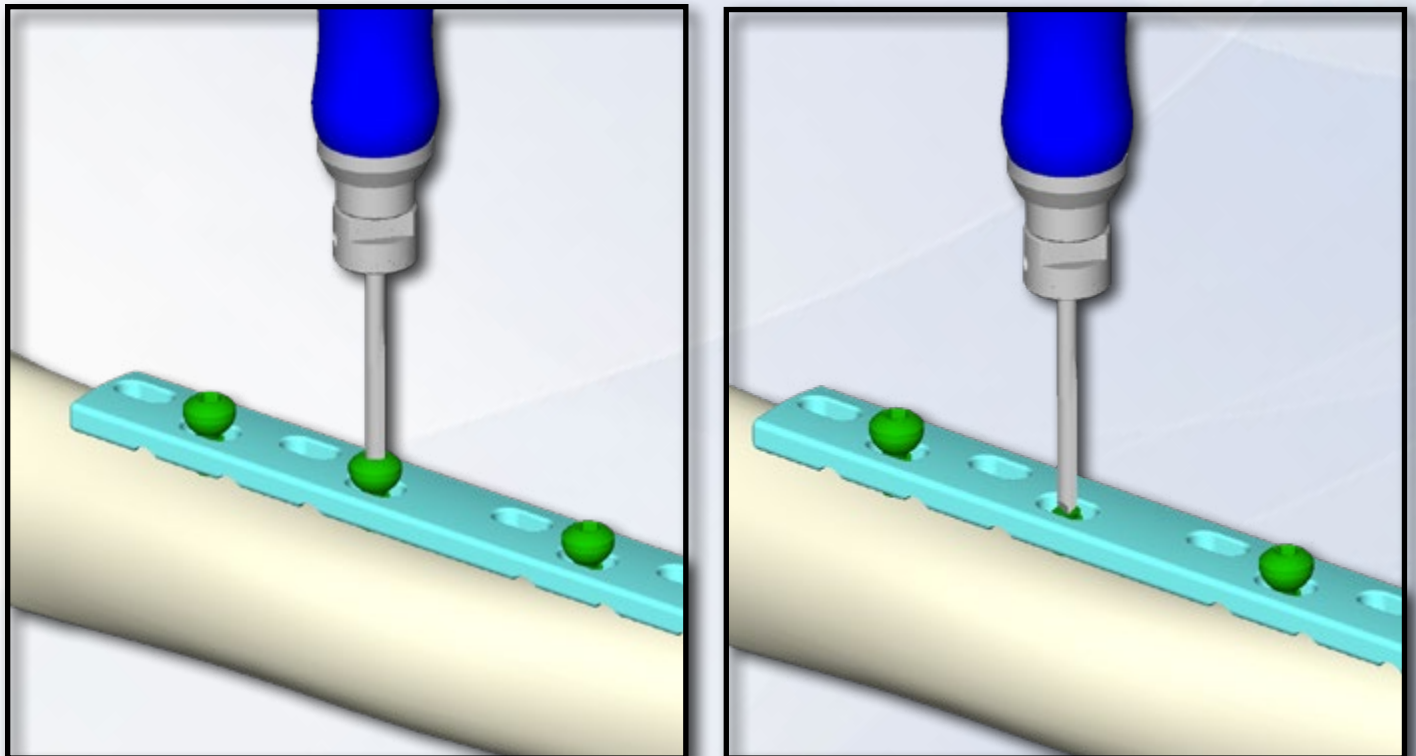
Attention to Detail

The SHUKLA Screw's broken screw extractors are designed with bone preservation in mind. The built in trephine teeth coupled with the one step process preserves every bit of bone possible. The teeth only dig down far enough for the extractor to reach the broken screw, and once it is engaged, will automatically start reverse threading the screw out leaving healthy bone intact. It is possible to re-insert a screw of the same diameter into the same hole and still engage healthy bone; that is a claim that not even the biggest ortho companies can make.



The simplicity of using the SHUKLA Screw to remove a broken screw in seconds with minimal bone loss.

The drill bits in the SHUKLA Screw are made of carbide. Why Carbide? Simply put, carbide is harder than most other materials, including Titanium. Titanium, one of the harder materials used for medical instruments, measures at a 6 on the Mohs Hardness Scale. Carbide has a Mohs Hardness Rating of 9. Our carbide drill bits will cut through screws made of any medical grade material.



Our carbide drill bit removing the head of a screw, paving the way for a plate to be removed with minimal bone loss so that the screw shaft can then be extracted easily.

Components List

Component List			
Std Qty	Part Number	Description	Effective Range
1	SCS003	Case & Lid, Broken & Stripped V2 System	
1	SHN003	THandle Assy, Ratcheting, Hex, 1/4", with Quick Connect	
1	SXN001	Adapter Assy, Hudson to Hex, 6"	
1	SAD001	Adapter Assy, Hudson Power Drill, 2.75"	
2	SBT001	Drill Bit Assy, Carbide, Hudson End, 2 mm, Single Use	
2	SBT002	Drill Bit Assy, Carbide, Hudson End, 3 mm, Single Use	
2	SBT003	Drill Bit Assy, Carbide, Hudson End, 4 mm, Single Use	
2	SBT004	Drill Bit Assy, Carbide, Hudson End, 5 mm, Single Use	
2	SBT005	Drill Bit Assy, Carbide, Hudson End, 6 mm, Single Use	
2	SBT006	Drill Bit Assy, Carbide, Hudson End, 7 mm, Single Use	
4	SXT003	Extractor, Broken Screw, 2 mm, 6" long, Single Use	2.0-2.5mm
4	SXT004	Extractor, Broken Screw, 3 mm, 6" long, Single Use	2.5-3.5mm
4	SXT005	Extractor, Broken Screw, 4 mm, 6" long, Single Use	3.5-4.5mm
4	SXT006	Extractor, Broken Screw, 5 mm, 6" long, Single Use	4.5-5.5mm
4	SXT007	Extractor, Broken Screw, 6 mm, 6" long, Single Use	5.5-6.5mm
4	SXT008	Extractor, Broken Screw, 7 mm, 6" long, Single Use	6.0-8.0mm
4	SXT009	Extractor, Stripped Screw, 2 mm, 6" long, Single Use	2.0mm
4	SXT010	Extractor, Stripped Screw, 3 mm, 6" long, Single Use	2.5-3.5mm
4	SXT011	Extractor, Stripped Screw, 4 mm, 6" long, Single Use	3.5-4.5mm
4	SXT012	Extractor, Stripped Screw, 5 mm, 6" long, Single Use	4.5-5.5mm
4	SXT013	Extractor, Stripped Screw, 6 mm, 6" long, Single Use	5.5-6.5mm
4	SXT014	Extractor, Stripped Screw, 7 mm, 6" long, Single Use	6.0-7.0mm



Revolutionizing the Art of Revision Surgery

Shukla Medical designs and manufactures instrumentation for orthopedic implant extraction at our headquarters in St. Petersburg, Florida, USA. We are proud to be an ISO 13485:2016 Certified company.

In 1998, aerospace component manufacturer S.S. White Technologies, Inc. acquired the Medical Products Division of Snap-On. 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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When you have tried all known techniques to extract an implant or remove a screw but determine you need suggestions for alternate techniques, help is only a phone call away. We will quickly put you in touch with our Technical Experts who will suggest other solutions to use our tools.



SHUKLA Medical offers the best warranty in the industry. Every component in a SHUKLA extraction system is designed and manufactured by us. Every component in our extraction systems that is not a single-use* or a wear* component is warranted against manufacturing defects for the life* of the system. All other parts are covered for as long as the purchased version of the system is actively marketed by SHUKLA Medical.

*Please see our website for the complete explanation of these terms and full details on our warranty.