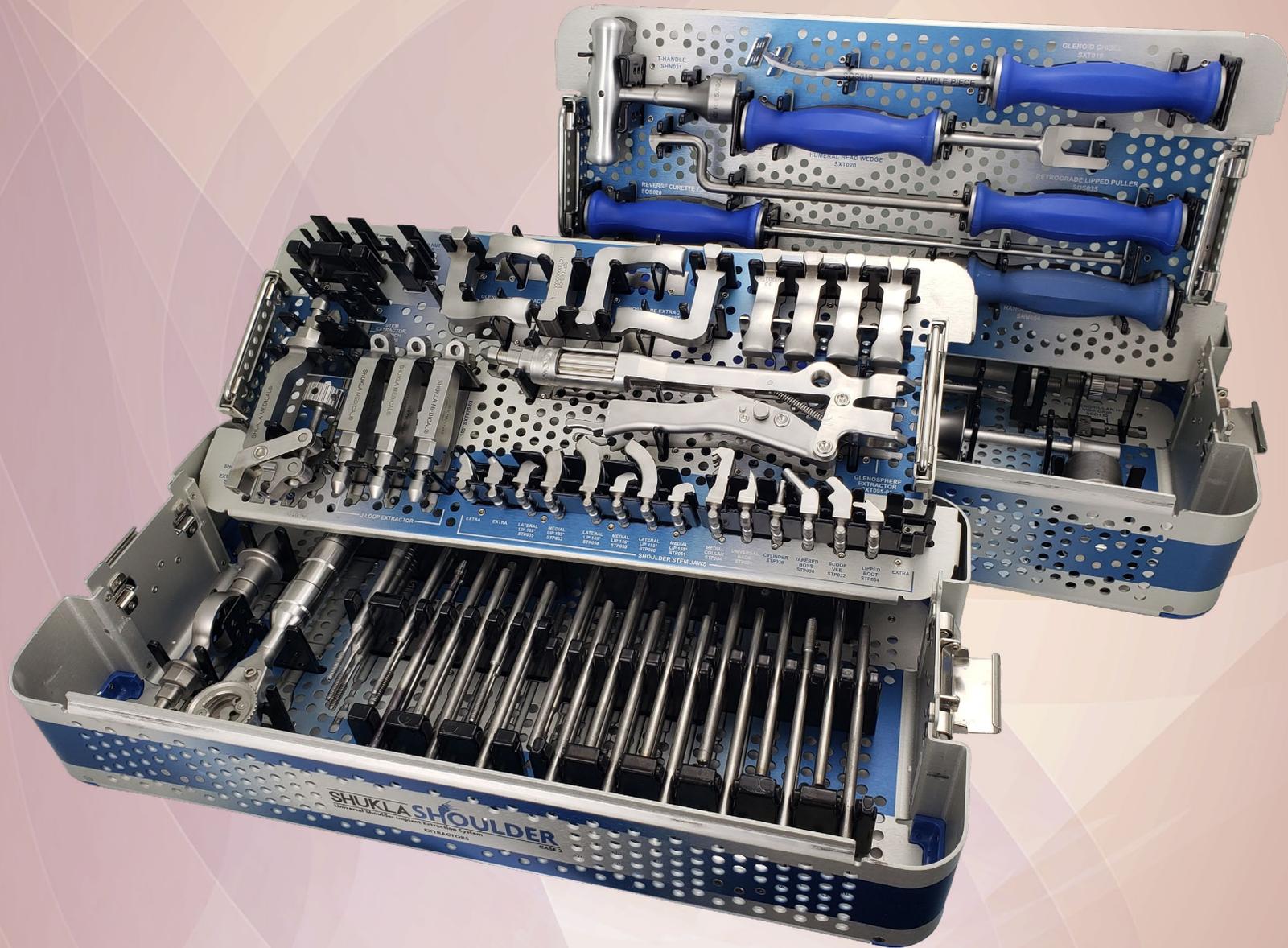


# PRODUCT GUIDE

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# SHUKLA SHOULDER

Universal Shoulder Implant Extraction System



**SHUKLA MEDICAL**<sup>®</sup>

Universal Orthopedic Extraction Technologies

*Revolutionizing the Art of Revision Surgery*

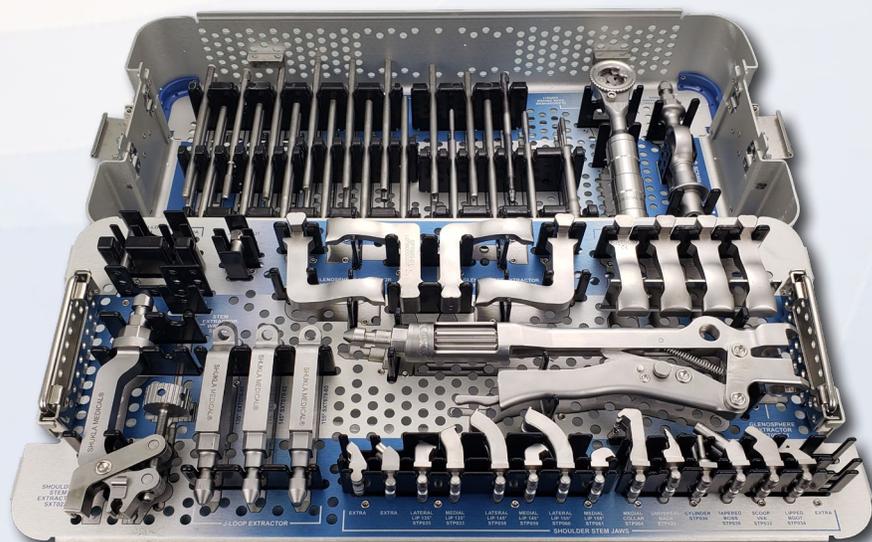
# SHUKLA SHOULDER

## Universal Shoulder Implant Extraction System

**System Name: SHUKLA Shoulder v1**

### Primary Use

The SHUKLA Shoulder Universal Shoulder Implant Extraction System is designed to remove any shoulder implant on the market today. Every part of this system is designed with surgeon efficiency in mind. With universal compatibility across the spectrum of implant features, the SHUKLA Shoulder system gives surgeons every tool they need for a successful extraction.



### System History

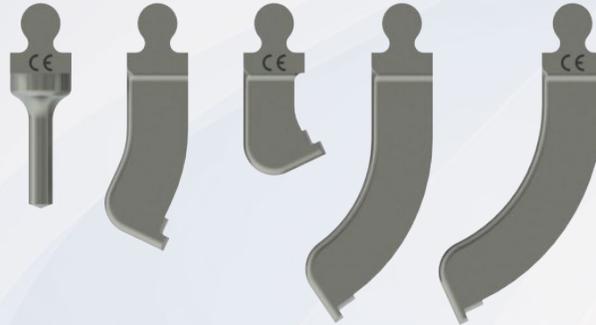
Over the years, numerous surgeons asked Shukla Medical if a shoulder implant extraction system was available in the Shukla Product Suite. That level of demand led our engineers to begin development on the SHUKLA Shoulder system in 2017. Our engineers worked alongside notable surgeons to make sure the system would be universally compatible with the wide range of shoulder implants on the market. The SHUKLA Shoulder system eventually grew to become our largest, most comprehensive set and launched in early 2022.

#### Version History

- 2022: Version 1 Introduced

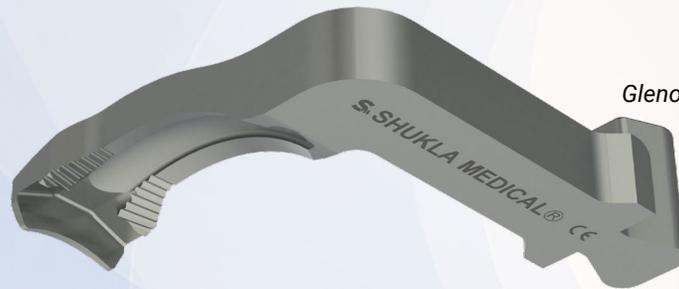
## Key Benefits

- Ability to remove a universal range of shoulder implants regardless of the implant feature, manufacturer, country of origin, or how long ago the primary surgery took place.
- 14 unique Modular Jaws to fit any shoulder implant, no matter the features. Fins, Collars, Trunnions, Lips, and more are all taken into consideration.



Assorted Jaws

- 3 types of Glenosphere Jaws able to grab onto a universal range of glenospheres.



Glenosphere Jaw

- Threaded Extractors are designed with a six inch length to give surgeons easier access to a wider range of patients.



Threaded Extractor

- Strike Plates apply crucial extraction force inline with the shoulder implant. Additionally, the Strike Plates were designed to help break up bone ingrowth making extraction easier and reducing the risk of fractures.

### 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

#### Universal Designs

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

#### Ergonomic Design

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

#### Comprehensive Design

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

## Alternative Method Comparison

The main alternative method to extract a shoulder implant without a SHUKLA Shoulder set in the O.R. is to contact a rep for the original manufacturer of the implant and obtain the specific instruments from them. This method only works if:

- You know ahead of time exactly what kind of implant is being dealt with. However, many times the information is incomplete, or when a surgeon opens up the patient, they discover the implant is not what they thought it would be. This leads to wasted time waiting on other reps to show up or an unsuccessful closing of the case.
- The original implant manufacturer has designed a special extraction tool for their implant and that tool is readily available on the date of the surgery.

Another common alternative in shoulder revisions is performing a small osteotomy on the distal end of where the shoulder implant is and using a punch to force it out. This leads to extra time in surgery, unnecessary bone loss, and increased cost. Why deal with all of that when a surgeon can use the SHUKLA Shoulder and extract the implant in minutes?



*A window is cut in the bone on the end of the shoulder implant to allow a hammer and a punch to tap the implant out the opposite direction in which it was implanted.*

## Return On Investment Justification

According to a study published in JAMA Surgery, the average cost for one minute in an O.R. is a staggering \$66! The median time spent in an O.R. per surgery is 75 minutes per surgery. Therefore, the typical per surgery cost could be calculated as 75 minutes per surgery x \$66 per minute for a total of \$4,950. The SHUKLA Shoulder system would pay for itself in less than seven surgeries.

## When You Don't Have It

When a hospital does not have a SHUKLA Shoulder system on hand, their surgeons are put at a distinct disadvantage. With so many different types of shoulder implants, each with their own features on them, why struggle with finding the manufacturer's tool or carving away at bone unnecessarily? With the SHUKLA Shoulder's modular and glenosphere jaws, threaded extractors, and variety of instrumentation, no matter what implant you come across, you have the proper tool at your disposal. With extractions taking less time as a result, the patient benefits from a decrease in time spent under anesthesia as well.

## How We Compare

Most orthopedic implant manufacturers provide revision/extraction tools suited only for their specific implants. Suppliers that claim to offer extraction systems for a variety of implants really only offer an assortment of tools thrown together as an afterthought. At Shukla Medical, **extraction is what we do**. Our engineers design truly universal tools to help remove any implant/hardware available on the market today. Our comprehensive, patented designs are revolutionizing the art of revision surgery; we proudly stand alone. That being shared, we did our best to provide a competitor comparison below.

While there are other shoulder implant extraction systems on the market, none come close to the comprehensive and universal capabilities of the SHUKLA Shoulder. Other sets do not work on all implant features such as collars or trunnions. Some others do not distribute the loading as evenly to reduce fractures. The SHUKLA Shoulder is effective on more implants, with a more secure connection, and with less risk of fracture.

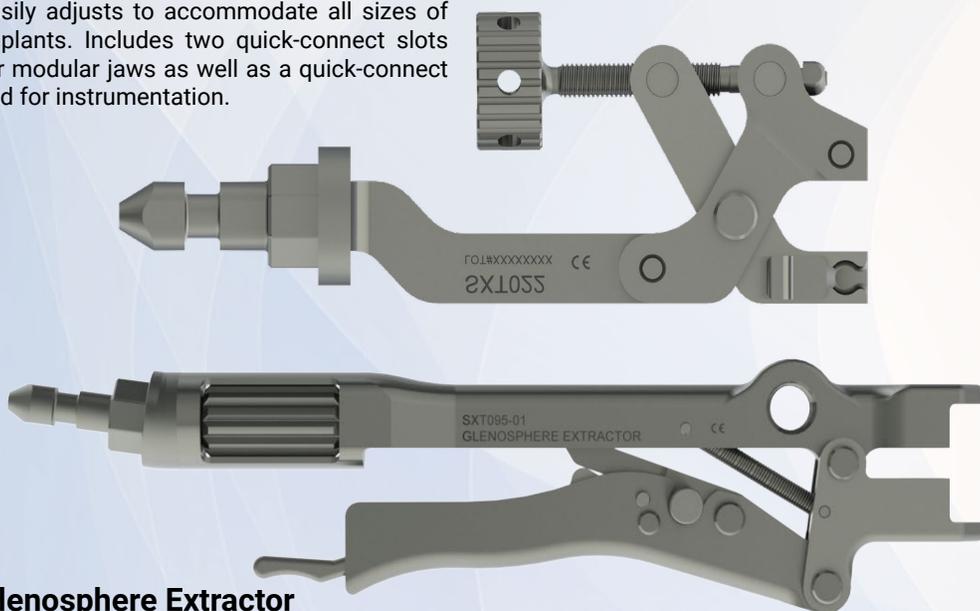
## PATENTS

- Shoulder Stem Extractor
- Stem Extractor Modular Jaws
- Glenosphere Extractor
- Glenosphere Jaws
- T-Handle
- Threaded Extractors
- Threaded Extractor Driver & Handle
- Strike Plate
- J-Loops
- Slotted Mallet
- Back Jaw Chisel
- Lip Extractor Punch
- Retrograde Lip Puller

The SHUKLA Shoulder system has more patented parts than any other Shukla Medical system on the market. Our engineering team worked incredibly hard on each and every part.

### Shoulder Stem Extractor

Easily adjusts to accommodate all sizes of implants. Includes two quick-connect slots for modular jaws as well as a quick-connect end for instrumentation.



### Stem Extractor Modular Jaws

Quick-connects to the stem extractor and allows for rapid connection and disconnection. Each of the 14 jaws is designed to grab onto specific features of a shoulder implant.



### Glenosphere Extractor

The extractor has an adjustment knob to ensure a tight grip on any size glenosphere. Dovetail slots on the end allow for easy sliding in and out of modular glenosphere jaws.

### Glenosphere Jaws

Range of jaws designed to grip onto a glenosphere of any size and with varying geometry. Includes jaws for head-on and offset bends for optimal positioning.



### T-Handle

The quick-connect capability allows for rapid insertion of extractors. It has a release button for quick disengagement. The symmetric T-shape allows for solid and stable grip while extracting implants using a strike plate.

### J-Loop Extractors

Three different angles to accommodate all possible stem angles. Allows for in-line extraction and the ability to connect to the slide-hammer attachment.

## Threaded Extractors

18 different thread configuration sizes available for quick engagement of any type of threaded implant.



## Threaded Extractor Driver

Quick-connect capability allows for easy insertion and removal of any threaded extractor. The end connects rapidly to any of the instrumentation.



## Slotted Mallet

Allows for controlled impacts on any of the punches, chisels, and pullers. The slot allows the mallet to be guided up the shaft.



## Back Jaw Chisel

Specially designed chisel to match the geometry of the universal back jaw. Clears the way for a clean grip of the backside of the implant.

## Retrograde Lip Puller

Specially designed for reverse shoulder implants. Can hook onto the inside lip of the implant and extract in-line with the stem.

## Lipped Extraction Punch

Specially designed to be wedged under the collar of an implant. The impact cap allows for in-line punches after a grip has been established.

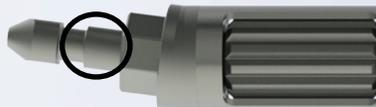


## Attention to Detail

The SHUKLA Shoulder is the result of years of engineering diligence. That hard work can be seen in all facets of the system. Many of the design features are not readily apparent and yet are no less important. One example is the engineered weakpoint on all of the system's threaded extractors. On thinner extractors, the weakpoint breaks outside of the threads, and on the thicker extractors, the minor diameter of the thread is thicker than the shaft. This allows the shaft to break before the thread, preventing a break midthread in the hole of an implant.



Another subtle yet important design is on the glenosphere extractor. The back hub of the extractor is slightly angled so that when instrumentation such as the strike plate is attached, the extraction force is kept in-line with the implant. This helps to greatly reduce the risk of fractures.



The fourteen modular jaws are designed to cover any potential combination of shoulder stem implant features. These include, but are not limited to: collars, inner lips, fins, pinholes, and trunnions.

Part Numbers		JAW											Implant Type		
		STP036	STP035 STP059 STP061	STP033 STP058 STP060	STP034	STP032	STP030	STP029	STP064	STP068	STP080	SXT070 01 - 03	Anatomic	Reverse	
Description		Cylinder	Lateral Lip	Medial Lip	Lipped Boot	Scoop Vee	Tapered Boss	Universal Back Jaw	Medial Collar	Reverse Vee	Extruded Boss Mini	J-Loop Extractor			
F E A T U R E	Collar								●				●	●	
	Proximal Notched Lip				●								●		
	Male Trunnion					●				●			●		
	Female Trunnion						●				●		●		
	Threaded Hole											●	●	●	
	Inner Lip		●	●										●	
	Fins							●						●	
	Pinhole	●												●	

## Components List

Component List			
Std Qty	Part Number	Description	
1	SCS067	Shoulder System Case 1	CASE 1
1	SCS064	Shoulder System, Case 1, Lid	
1	SCS065	Shoulder System, Case 1, Tray	
1	SHN054	Handle, In-Line	
1	SHN031	T-Handle, Female Chuck	
2	SBD106	Strike Plate, Octagon ID	
1	SIN010	Slide Hammer, Female Chuck	
1	SMT003	Mallet, Slotted	
1	SBD132	Perpendicular Hub, Vise Grip	
1	SBD133	Side Strike Plate, Vise Grip	
1	SOS040	Universal Back Jaw Chisel	
1	SOS020	Reverse Currette 7.5mm	
2	SOS024	Screw Head Pick	
1	SOS023	Notched Cement Chisel	
1	SOS019	Glenoid Chisel	
1	SXT020	Humeral Head Wedge	
1	SXT035	Lipped Extraction Punch	
1	SOS035	Retrograde Lipped Puller	
1	SCS068	Shoulder System Case 2	
1	SCS071	Shoulder System, Case 2, Lid	
1	SCS072	Shoulder System, Case 2, Tray	
1	SXT022	Extractor, Shoulder Stem	
1	SHN095	Stem Extractor, Wrench	
2	STP036	Shoulder Stem Extractor Jaw, Cylinder	CASE 2
2	STP035	Shoulder Stem Extractor Jaw, Lateral Lip, 135°	
2	STP058	Shoulder Stem Extractor Jaw, Lateral Lip, 145°	
2	STP060	Shoulder Stem Extractor Jaw, Lateral Lip, 155°	
2	STP033	Shoulder Stem Extractor Jaw, Medial Lip, 135°	
2	STP059	Shoulder Stem Extractor Jaw, Medial Lip, 145°	
2	STP061	Shoulder Stem Extractor Jaw, Medial Lip, 155°	
2	STP034	Shoulder Stem Extractor Jaw, Lipped Boot	
2	STP032	Shoulder Stem Extractor Jaw, Scoop Vee	
2	STP030	Shoulder Stem Extractor Jaw, Tapered Boss	

Component List			
Std Qty	Part Number	Description	
2	STP029	Shoulder Stem Extractor Jaw, Universal Back Jaw	CASE 2
2	STP068	Shoulder Stem Extractor Jaw, Reverse Vee	
2	STP080	Shoulder Stem Extractor Jaw, Extruded Boss Mini	
2	STP064	Shoulder Stem Extractor Jaw, Medial Collar	
1	SXT070-01	J-Loop Extractor 135°	
1	SXT070-02	J-Loop Extractor 145°	
1	SXT070-03	J-Loop Extractor 155°	
2	SNT008	J-Loop Nut	
2	SSC024	J-Loop Screw	
1	SXT095-01	Extractor, Glenosphere	
4	STP067	Glenosphere Extractor Jaw, Straight	
2	STP069-01	Glenosphere Extractor Jaw, Offset 1	
2	STP069-02	Glenosphere Extractor Jaw, Offset 2	
1	SDR002	Threaded Extractor Driver	
2	SXT036-01	Threaded Extractor, 8-32 UNC-2A, <i>Single Use</i>	
2	SXT036-02	Threaded Extractor, 10-24 UNC-2A, <i>Single Use</i>	
2	SXT036-03	Threaded Extractor, 10-32 UNF-2A, <i>Single Use</i>	
2	SXT036-04	Threaded Extractor, 12-24 UNC-2A, <i>Single Use</i>	
2	SXT036-05	Threaded Extractor, 12-28 UNF-2A, <i>Single Use</i>	
2	SXT036-06	Threaded Extractor, 1/4-20 UNC-2A, <i>Single Use</i>	
2	SXT036-07	Threaded Extractor, 1/4-28, UNF-2A, <i>Single Use</i>	
2	SXT036-08	Threaded Extractor, 5/16-18 UNC-2A, <i>Single Use</i>	
2	SXT036-09	Threaded Extractor, 5/16-24 UNF-2A, <i>Single Use</i>	
2	SXT036-10	Threaded Extractor, 5/16-32 UNEF-2A, <i>Single Use</i>	
2	SXT036-11	Threaded Extractor, 3/8-16 UNC-2A, <i>Single Use</i>	
2	SXT036-12	Threaded Extractor, 3/8-24 UNF-2A, <i>Single Use</i>	
2	SXT037-01	Threaded Extractor, M5 X 0.8 - 6G, <i>Single Use</i>	
2	SXT037-02	Threaded Extractor, M6 X 0.75 - 6G, <i>Single Use</i>	
2	SXT037-03	Threaded Extractor, M6 X 1.0 - 6G, <i>Single Use</i>	
2	SXT037-04	Threaded Extractor, M7 X 1.0 - 6G, <i>Single Use</i>	
2	SXT037-05	Threaded Extractor, M8 X 1.25 - 6G, <i>Single Use</i>	
2	SXT037-06	Threaded Extractor, M8 X 1.0 - 6G, <i>Single Use</i>	
3	SXT096	Poly Extractor, <i>Single Use</i>	
1	SWR011	Glenosphere Base Driver	



# THE EXTRACTION EXPERTS

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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CONSULT  
INSTRUCTIONS  
FOR USE



NON-STERILE  
PRODUCT



**SHUKLA Surgical Tech Support**  
24 hours a day, 7 days a week  
727-626-2771

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.