

PRODUCT GUIDE

SHUKLA **HiP**

Universal Hip Implant Extraction Solution

#5

System 5 of 15



SHUKLA MEDICAL®

Universal Orthopedic Extraction Technologies

Revolutionizing the Art of Revision Surgery

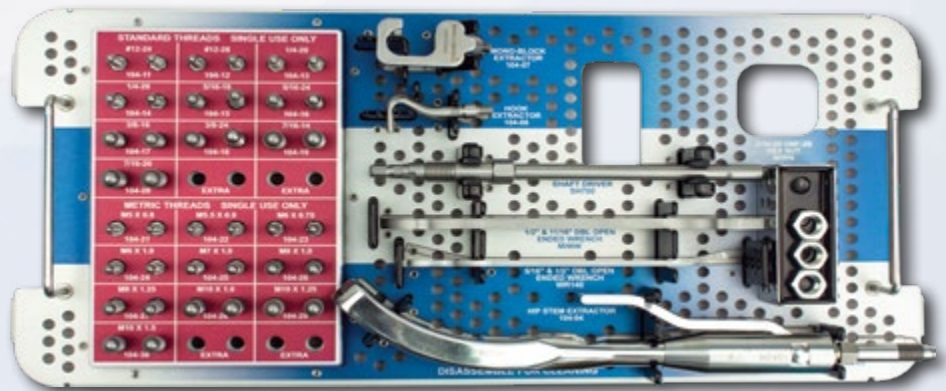
SHUKLA HIP

Universal Hip Implant Extraction Solution

System Name: SHUKLA Hip v2

Primary Use

The SHUKLA Hip Universal Hip Stem Extraction System is designed for the removal of hip stems during revision surgeries. The system consists of a variety of instrumentation geared towards universal removal of varying designs of hip stems including Tapered Neck, Monoblock, Proximally Threaded, Slotted, and Cross Hole stems.



System History

The SHUKLA Hip system was born from the hard work of our engineers and Doctors Barsoum and Krebs from the Cleveland Clinic. The need and desire for a system to universally remove hip stems from patients arose due to the medical industry rapidly moving away from Cemented Hip Stems to Porous Coated Stems.

The Hip v1 was a solid start. The collet had four “teeth” that would thread down and grab the trunnion. We realized that we wanted to improve the grip on the trunnion, so Shukla engineers decided to add in an upgraded Universal Hip Stem Extractor and threaded tip configurations into the mix for the v2.

2010: Version 1 Introduced

2012: Version 2 Introduced

- Femoral Head Extractor
- Threaded Tip Configurations
- Universal Hip Stem Extractor

Key Benefits

- Strike Plate Frame and Mallet combo makes extraction simple, effective, and fast.
- Extraction force remains inline with implant. This greatly reduces side-loading, reducing risk of fractures.
- Ability to remove Tapered, Monoblock, Proximally Threaded, Slotted, and Cross Hole hip stems.



Tapered Neck Stem

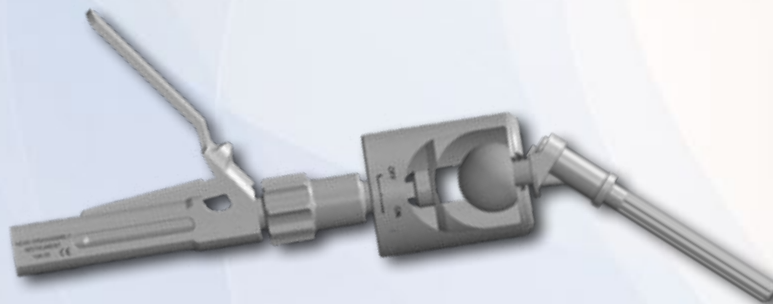


Monoblock Stem



Proximally Threaded Stem

- Femoral Head Extractor securely locks onto trunnion and removes the head with a pull of the lever.



- Removes the need to perform an osteotomy.
- Quick-connect Hudson T-Handle easily tightens onto threaded tips, allowing for Strike Plate Frame attachment.

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

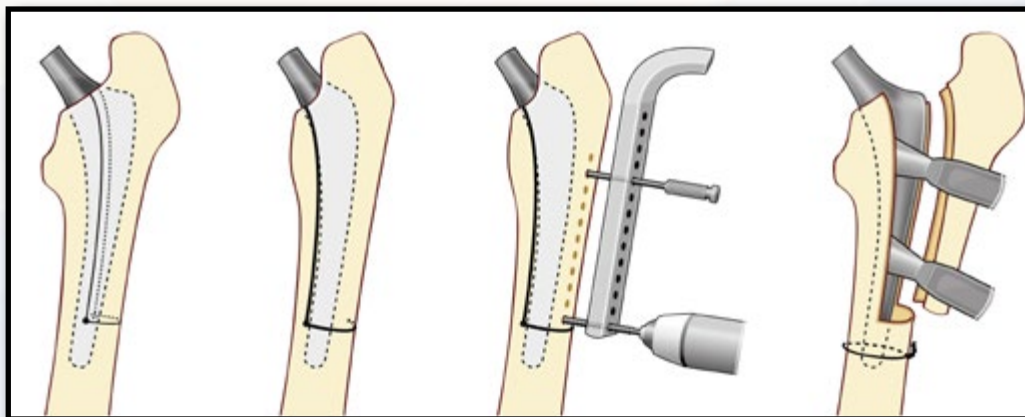
- Addresses all known challenges
- Tools ensure surgery is a success
- Provides backup solutions during surgery

Alternative Method Comparison

Without a SHUKLA Hip set, the most common alternative method in the O.R. is to perform an osteotomy. An osteotomy is a surgical operation whereby part of the bone is removed to allow easier access to the implant. Think of it as a surgery within a surgery. Some surgeons are actually trained in school to resort to an osteotomy if a procedure looks as if it will take longer than fifteen minutes - this is something Shukla strives to help correct. With a SHUKLA Hip system, you can reduce the amount of osteotomies by a staggering amount.

Benefits to Avoiding an Osteotomy

- Reduces risk of infection
- Reduces risk of nonunion fractures
- Reduces risk of complication due to bone loss
- Reduces need for physical therapy
- Reduces cost to hospital
- Reduces length of hospital stay for patient



Visual representation of an Extended Trochanteric Osteotomy procedure.

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! Taking just the lowest estimate of time savings, the savings per surgery can be estimated at 30 minutes x \$36 per minute = \$1,080. With the SHUKLA Hip system, a hip stem extraction that would normally take anywhere between one to two hours or more can be done in much less time! Between that and the time saved not having to hunt down the proper rep or extractor for the procedure, the SHUKLA Hip system is easy to justify. In fact, a SHUKLA Hip sells for \$20,500. With an average time saved in the O.R. being around an hour per use, the system recoups its cost in just nine cases!

When You Don't Have It

When using a hip stem extraction system from our competitors, you immediately run into the "Three Strikes" of extraction for hip stems.

- **STRIKE ONE** - Competitor's system extractors are not inline with the hip stem itself, wasting up to 60% of the force exerted and increasing the risk of fractures.
- **STRIKE TWO** - Failing to get a good "bite" on the trunnion, resulting in wasted time and effort for the surgeon.
- **STRIKE THREE** - The inefficiency of the traditional slap hammer system. The slap hammer does not generate significant force on the implant, does not employ vibrational harmonics, and leads to both increased surgeon fatigue as well as wasted time in the O.R.

The SHUKLA Hip system directly counters all of those strikes.

- **COUNTER STRIKE ONE** - Our extractors are all inline with the hip stem, leading to a quicker extraction and a greater reduction in the risk of a fracture.
- **COUNTER STRIKE TWO** - Our methods of extraction don't slip off the trunnion once clamped down. This ensures that a surgeon will not waste time trying to get the needed "bite" in order to extract.
- **COUNTER STRIKE THREE** - Our Strike Plate Frame and Mallet combo offer unparalleled vibrational harmonics and impact force control that facilitates the separation of the implant to bone growth interface. This leads to quicker extraction, less surgeon fatigue, and less time spent in the O.R.

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.

Our competitor's extractors primarily use slap-hammers which do not provide as much extraction force. Only the SHUKLA Hip offers a Hip Stem Extractor to allow for the use of a strike plate frame and "Thor" mallet to generate much higher extraction force. In addition, it can adjust to any diameter of trunnion and offers a 360-degree grip for superior positioning.

Some competitor's extraction instruments apply the extraction force in-line with the trunnion which can fracture proximal bone. The SHUKLA Hip Stem Extractor ensures the extraction force is applied directly in-line with the hip stem which minimizes bone loss.

PATENT

- Strike Plate Frame

The engineers at Shukla are the best at what they do. They've worked hard to create ingenious patented items like our Strike Plate Frame.

Strike Plate

The wide strike plate allows surgeons to hit the "sweet spot" with a much larger degree of accuracy. This reduces the chance of a mishit which could result in unwanted lateral force.

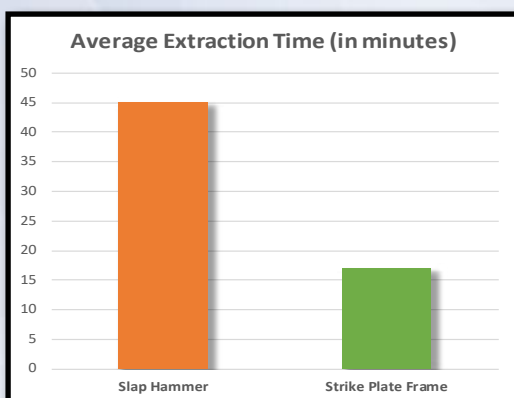
Strike Plate Frame

Our Strike Plate Frame features an integrated connection adaptor as well as an integrated t-handle for proper grippage. The body has been reinforced to help withstand the immense vibrational harmonics that occur with every strike.



Mallet

Stainless steel head and aluminum handle allow for precise blows to the Strike Plate for exceptional extraction force.



Comparisons between the efficiency of the Strike Plate Frame and a standard slap-hammer.

Attention to Detail

Every aspect of the SHUKLA Hip system is the result of our engineers being hyper focused on quality, ease of use, and universal compatibility. Their eye for detail serves the Hip system well, with everything from the Femoral Head Extractor to the Strike Plate Frame getting serious time put into it.

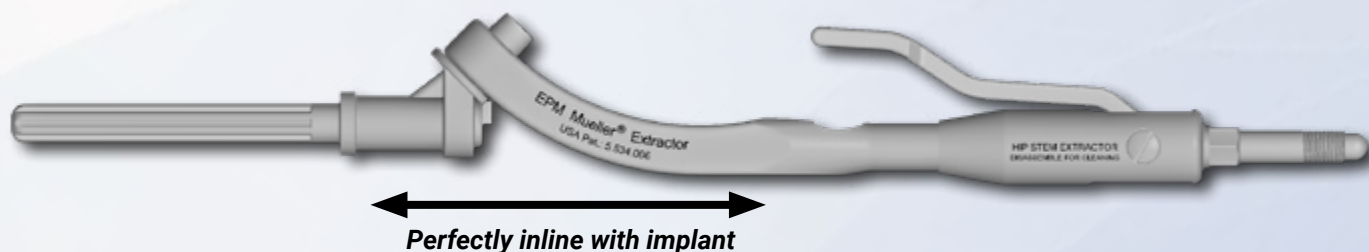


The Strike Plate Frame has more modes of frequency than a slap hammer, which vibrates the bone-implant interface with each hit. Because bone has a complex shape and its density varies throughout, varied frequencies are more important than amplitude of frequencies. This increases the likelihood of matching the bone's natural frequency and thus weakening and loosening the implant.

The SHUKLA Hip system has dedicated methods for extracting all types of hip stem configurations - from Monoblock, to Slotted, to Cross Hole, to Threaded, and more. If it is a Hip Stem, we are going to get it out.



The Universal Hip Extractor Assembly attaches to hip stems inline with the implant itself, allowing for reduced risk of fracture and maximum application of extraction force.



Components List

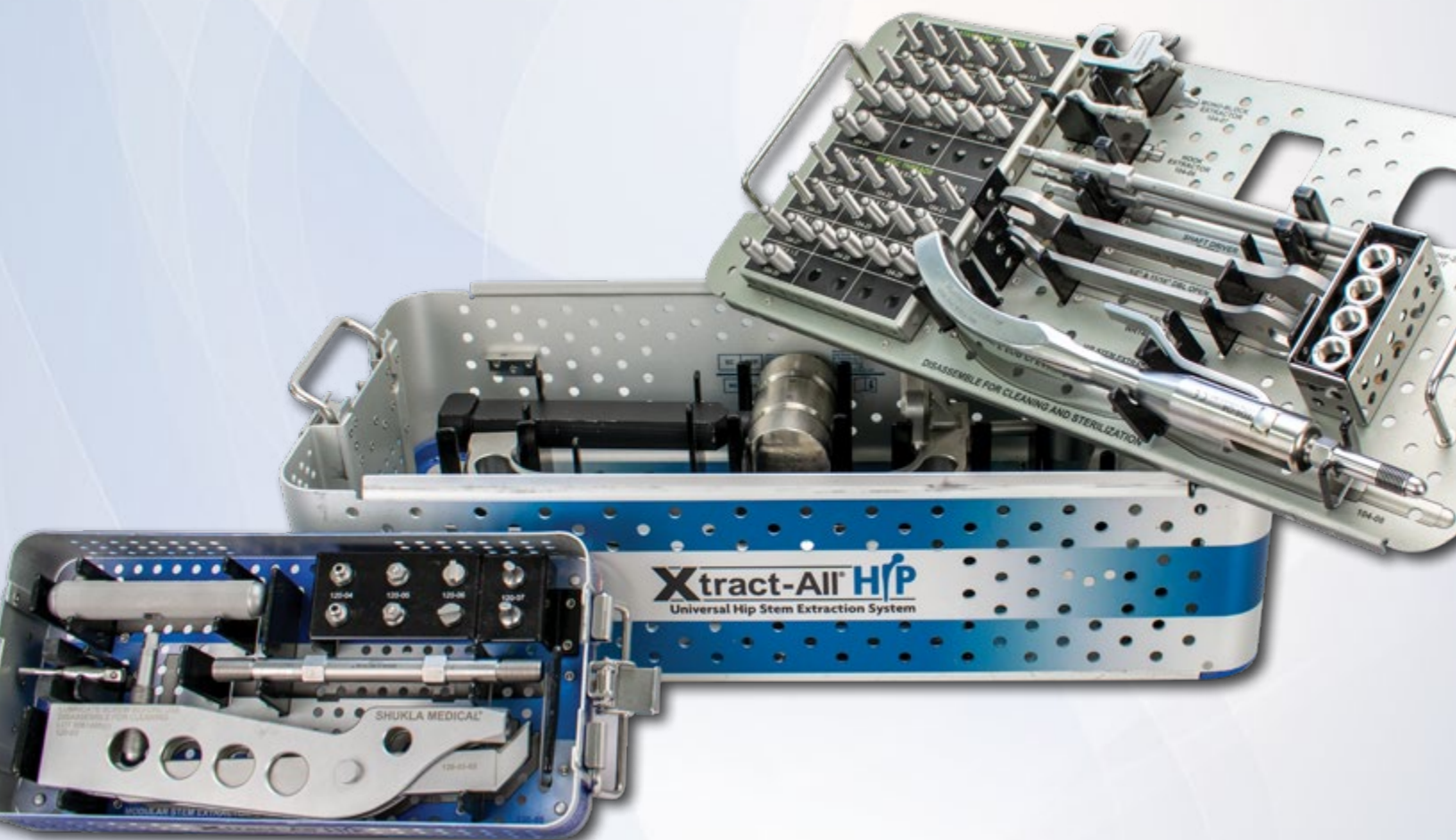
Component List		
Std Qty	Part Number	Description
1	104-01	Case, Hip System
1	104-04	Extractor Assy, Stem, Cam lock
1	104-05	Extractor Assy, Femoral Head
1	104-06	Extractor, Stem, Hook
1	104-07	Extractor, Stem, Monoblock Assy
1	104-08	Tray, Hip System
2	104-11	Tip, Male, 12-24 UNC-2A, Single Use
2	104-12	Tip, Male, 12-28 UNF-2A, Single Use
2	104-13	Tip, Male, 1/4-20 UNC-2A, Single Use
2	104-14	Tip, Male, 1/4- 28 UNF-2A, Single Use
2	104-15	Tip, Male, 5/16- 18 UNC-2A, Single Use
2	104-16	Tip, Male, 5/16-24 UNF-2A, Single Use
2	104-17	Tip, Male, 3/8-16 UNC-2A, Single Use
2	104-18	Tip, Male, 3/8-24 UNF-2A, Single Use
2	104-19	Tip, Male, 7/16-14 UNC-2A, Single Use
2	104-20	Tip, Male, 7/16-20 UNF-2A, Single Use
2	104-21	Tip, Male, M5 X 0.8-6g, Single Use

Component List		
Std Qty	Part Number	Description
2	104-22	Tip, Male, M5.5 X 0.9-6g, Single Use
2	104-23	Tip, Male, M6 X 0.75-6g, Single Use
2	104-24	Tip, Male, M6 X 1.0-6g, Single Use
2	104-25	Tip, Male, M7 X 1.0-6g, Single Use
2	104-26	Tip, Male, M8 X 1.0-6g, Single Use
2	104-27	Tip, Male, M8 X 1.25-6g, Single Use
2	104-28	Tip, Male, M10 X 1.0-6g, Single Use
2	104-29	Tip, Male, M10 X 1.25-6g, Single Use
2	104-30	Tip, Male, M10 X 1.50-6g, Single Use
1	MIWE	Strike Plate Frame Assy, with Handle
3	MIWN	Nut, Hex, 7/16-20 UNF-2B
1	MIWW	Wrench, Double Open End, 1/2" & 11/16"
1	MMI1222	THandle, Assy, Quick Connect, Hudson
1	MMM5	Mallet Assy
1	SCS011	Lid, Hip, Knee, Broken & Stripped, Blade Systems
2	SH700	Connector Shaft for Strike Plate
1	WR140	Wrench, Double Open End, 5/16" & 1/2"

SHUKLA **HIP**

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and **MOD**
SHUKLA **HIP**
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SHUKLA HIP

Universal Hip Implant Extraction Solution

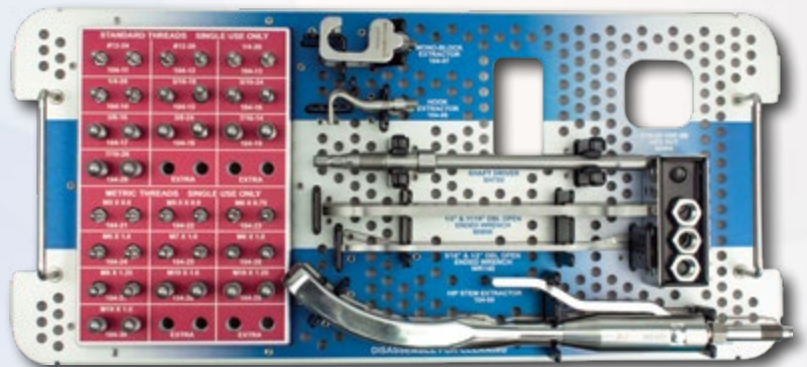
1.1 System Name: SHUKLA Hip

Part Number: S9HIP

Version: 2

1.2 Primary Use

The SHUKLA Hip Universal Hip Stem Extraction System is designed for the removal of hip stems during revision surgeries. The system consists of a variety of instrumentation geared towards universal removal of varying designs of hip stems including Tapered Neck, Monoblock, Proximally Threaded, Slotted, and Cross Hole stems.



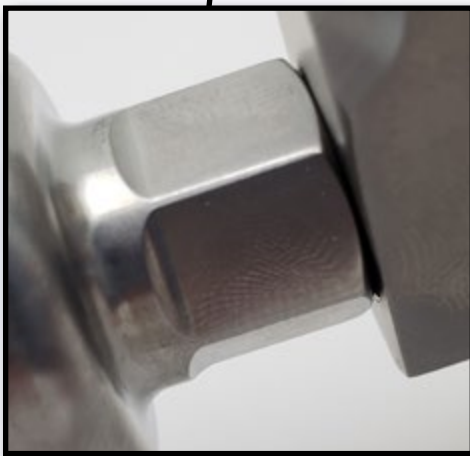
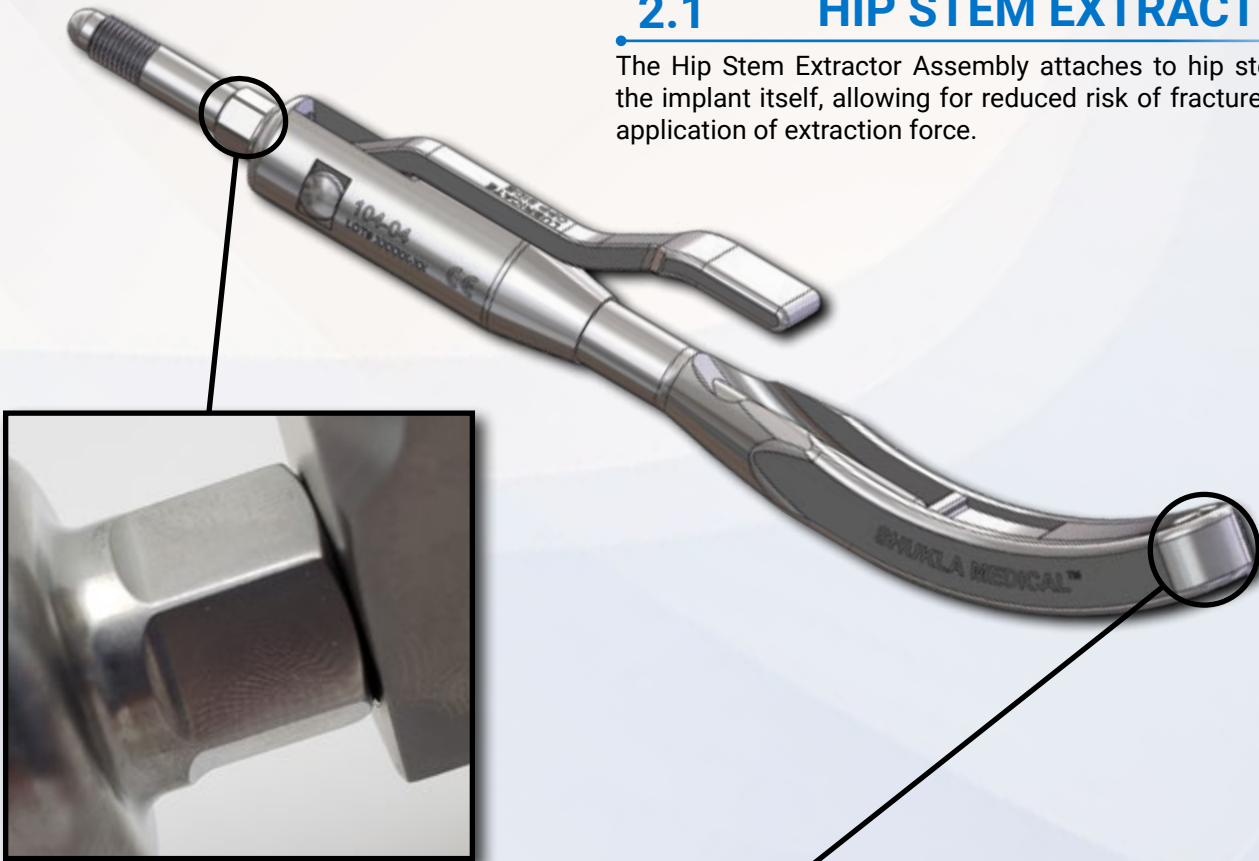
1.3 System History

The SHUKLA Hip system was born from the hard work of our engineers and Doctors Barsoum and Krebs from the Cleveland Clinic. The need and desire for a system to universally remove hip stems from patients arose due to the medical industry rapidly moving away from Cemented Hip Stems to Porous Coated Stems.

The Hip v1 was a solid start, but suffered from difficulty of the stem extractor properly gripping the hip stem. The collet had four "teeth" that would thread down and grab the trunnion, but the grip had difficulty staying. So Shukla engineers decided to add in an upgraded Universal Hip Stem Extractor and threaded tip configurations into the mix.

2.1 HIP STEM EXTRACTOR

The Hip Stem Extractor Assembly attaches to hip stems inline with the implant itself, allowing for reduced risk of fracture and maximum application of extraction force.



The Hip Stem Extractor securely connects to the Strike Plate Frame allowing for inline extraction.



Teeth on the inside clamp down on the trunnion when the camlock is engaged.



The Modular Hip Stem Extractor's T-Handle tightens the jaw onto the modular hip stem, securing it into place.

2.2 STRIKE PLATE FRAME

The Strike Plate Frame applies crucial extraction force in-line with the hip stem. Vibrational Harmonics help break up bone ingrowth, making extraction easier and helping reduce the risk of fractures.



The holes in the body reduce overall weight while increasing the vibrations of the resonant frequencies.

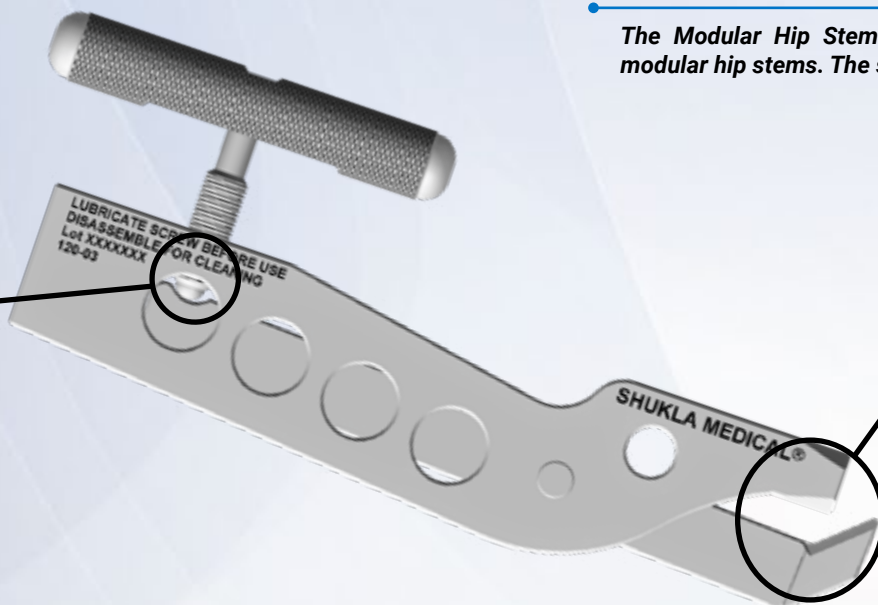


The wide strike plate allows surgeons to hit with a large degree of accuracy, reducing the chance of mishits.



2.3 MODULAR HIP STEM EXTRACTOR

The Modular Hip Stem Extractor is designed to aggressively attach onto modular hip stems. The strong grip helps with eliminating the risk of slippage.



The jaw clamps down onto the modular hip stem, securing it in place for extraction.

3.1 Preoperative

- Appropriate x-rays and surgical notes may be used to identify manufacturer, brand, location, & condition of implanted hardware.
- The surgeon should be familiar with general principles of revision surgery and techniques for removal of implants.
- The instrumentation should be inspected for visible wear prior to use (see *Reusable Instrument Inspection Manual*, FCD-17089). Do not use the product if damage is suspected.
- Only recommended cleaning and sterilization guidelines should be used.

3.2 Operative

- The surgeon should be cautious with limb position change and/or excessive force exertion while using the instrumentation provided in the tray.

3.3 Storage

- It is recommended to store all Shukla Medical instrumentation in a clean, dry environment. Under 50% relative humidity; $\leq 75^{\circ}\text{F}/24^{\circ}\text{C}$.
- Proper handling and storage of the instrumentation is mandatory. Long-term use of this system may produce stresses and cause weakness, which could become a focal point for failure.

3.4 Intended Use

The SHUKLA Hip (S9HIP, prev. 104-00) Universal Hip Implant Extraction Solution is designed for the removal of femoral hip components, especially hip stems, during revision procedures.

Instrumentation from Shukla Medical is recommended for use only within the intended design, and only by licensed healthcare professionals. Any uses other than those indicated may cause adverse results to the instrumentation or to the patient.

3.5 Indications for Use

The SHUKLA Hip (S9HIP, prev. 104-00) Universal Hip Implant Extraction Solution is indicated for use during any revision procedure in which femoral hip components must be extracted, including but not limited to tapered neck, monoblock, threaded, & modular stems.

3.6 Contraindications

The SHUKLA Hip System includes multiple attachment methods specific to a variety of hip stem implant styles. All attachment configurations ultimately connect to the Strike Plate Frame and require repeated strikes with a mallet to extract the implant. Therefore, when there is insufficient quality or quantity of bone, or any other condition that may result in fracture of the femur during extraction, the provided instrumentation should not be used.

Listed below are possible (not inclusive) scenarios in which the SHUKLA Hip System should not be used:

- **Fully porous-coated straight and bowed stems:** Due to the excessive bone ingrowth on fully porous-coated straight and bowed stems, it is not recommended to use this system for removal of such implants.
- **Foreign body sensitivity:** Where material sensitivity is suspected, appropriate tests should be performed to rule out sensitivity prior to use.

3.7 Additional Recommendations

If extracting a modular hip stem, or if there is any possibility that a hip component could be modular, it is recommended to use the SHUKLA Mod Hip (S9HIP-MOD, prev. 120-00) Universal Modular Hip Stem Extraction Solution in conjunction with the SHUKLA Hip.

For complete revision solutions, it is also recommended to use the SHUKLA Hip system in conjunction with the SHUKLA Screw (S9SCREW) Universal Broken & Stripped Screw Extraction Solution, the SHUKLA Maxi (S9MAXI) Universal Large Bone Screw Extraction Solution, and the SHUKLA Blade (S9BLADE) Universal Flexible Osteotomes Solution.

STEP 1

Determine Stem Type

For the best possible surgical outcome of the SHUKLA Universal Hip Stem Extraction System (S9HIP), it is necessary to preoperatively determine if the hip stem is a standard stem or a modular stem.

Removal of a modular stem requires the SHUKLA Modular Hip Stem Extraction System (S9HIP-MOD) in addition to the standard system (S9HIP). If the stem is modular, skip to **Step 7**.

- If the stem is Threaded, skip to **Step 6**.
- If the Femoral Head is Removable, proceed to **Step 2**.
- If the stem is Tapered, skip to **Step 3**.
- If the Femoral Head is not Removable, skip to **Step 4**.
- If there is proximal grabbable geometry on the hip stem, such as a slot or a hole, skip to **Step 5**.



Modular Stems



Tapered Neck Stem



Monoblock Stem



Proximally Threaded Stem

STEP 2

Femoral Head Removal

1. Rotate knob in center of Femoral Head Disassembly Instrument (104-05) until the inner sleeve is fully descended, such that the inner and outer sleeves are nested together at the distal end.
2. Slide the instrument onto the hip implant neck, with the femoral head inside the nested sleeves.
3. Rotate knob to adjust sleeve spacing, raising the inner sleeve until it rests against the femoral head and the outer sleeve rests against the femoral neck (Image 1).
4. Press handle toward instrument body (Image 2) to detach femoral head from neck.
5. The femoral head is retained inside the inner sleeve for easy disposal.
6. Proceed to Step 5 to extract the remaining hip stem.



Image 1

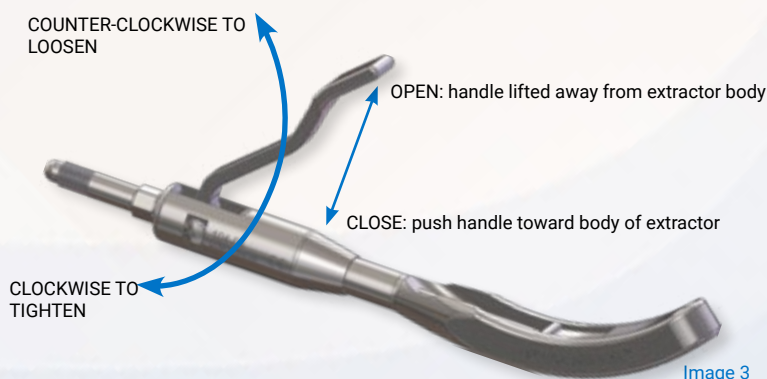


Image 2

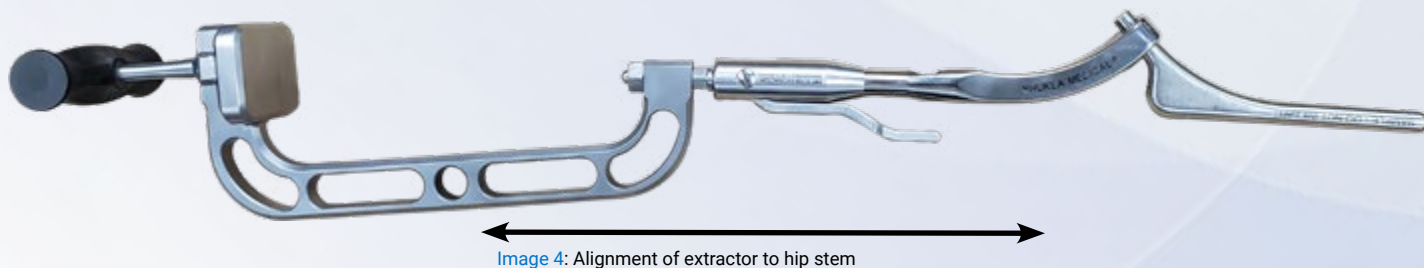
STEP
3

Tapered Neck Stem Extraction

1. With handle in open position, slide Hip Stem Extractor (104-04) over implant neck as far down as possible. Rotate the extractor handle counter-clockwise to loosen the jaw if necessary (Image 3).



2. Tighten jaw grip by rotating handle clockwise. Tighten as far as possible, then reverse 180° to close the handle. Stop when you first experience resistance - the jaw has begun to clamp onto the neck. **Check to ensure the extractor axis is in line with the hip stem before closing fully.** Make manual adjustment if not aligned properly (Image 4).



3. Press handle toward extractor body until it locks completely closed. Handle must close fully to ensure a secure grip on the implant neck. Confirm secure attachment by pulling slightly.
4. With extractor aligned and securely locked onto hip stem, slide the Strike Plate Frame (MIWE) and a Hex Nut (MIWN) onto the proximal end. Tighten nut fully with the 11/16" Wrench (MIWW) while applying counter-torque with the 1/2" Wrench (WR140).
5. Extract implant with repeated strikes of the Mallet (MMM5) on extraction Strike Plate Frame (Image 5). If implant resists removal after several strikes, loosen bone around implant prior to continuing.
6. After implant is pulled free from the femur, open extractor & remove implant from extraction assembly.



STEP 4

Monoblock Stem Extraction

1. Thread Monoblock Stem Extractor (104-07) onto Shaft Driver (SH700).
2. Slide the Strike Plate Frame (MIWE) and a Hex Nut (MIWN) onto the proximal end. Tighten nut fully with the 11/16" Wrench (MIWW) while applying counter-torque with the 1/2" Wrench (WR140).
3. Hook Monoblock Stem Extractor around implant neck (Image 6).
4. **Keeping impaction force in line with the axis of the implant**, use repeated strikes of the Mallet (MMM5) on the strike plate to extract stem. If implant resists removal after several strikes, loosen bone around implant prior to continuing.



Image 6

STEP 5

Slotted or Cross Hole Stem Extraction

1. Thread Hook Extractor (104-06) onto Shaft Driver (SH700).
2. Slide the Strike Plate Frame (MIWE) and a Hex Nut (MIWN) onto the proximal end. Tighten nut fully with the 11/16" Wrench (MIWW) while applying counter-torque with the 1/2" Wrench (WR140).
3. Hook the extractor through the cross hole shaft (Image 7).
4. **Keeping impaction force in line with the axis of the implant**, use repeated strikes of the Mallet (MMM5) on the strike plate to extract stem. If implant resists removal after several strikes, loosen bone around implant prior to continuing.



Image 7

STEP 6

Threaded Stem Extraction

1. Determine size of threaded implant neck and select corresponding single-use Extractor Tip (104-11 through 104-30).
2. Screw selected Extractor Tip into Shaft Driver. Then attach Shaft Driver (SH700) to Hudson T-Handle (MMI1222) by pulling handle shaft up, inserting & aligning the driver, & releasing handle to lock in place.
3. Use the T-handle to screw the Shaft Driver assembly tightly into implant neck (Image 8).
4. Remove T-handle from Shaft Driver. Slide the Strike Plate Frame (MIWE) and a Hex Nut (MIWN) onto the proximal end. Tighten nut fully with the 11/16" Wrench (MIWW) while applying counter-torque with the 1/2" Wrench (WR140).
5. Extract implant with repeated strikes of the Mallet (MMM5) on the strike plate (Image 9). If implant resists removal after several strikes, loosen bone around implant prior to continuing.
6. After extraction, use wrenches to remove Extractor Tip from assembly and discard.



Image 8



Image 9

MOD_o SHUKLA HIP

Universal Hip Implant Extraction Solution

System Name: SHUKLA Mod Hip v1

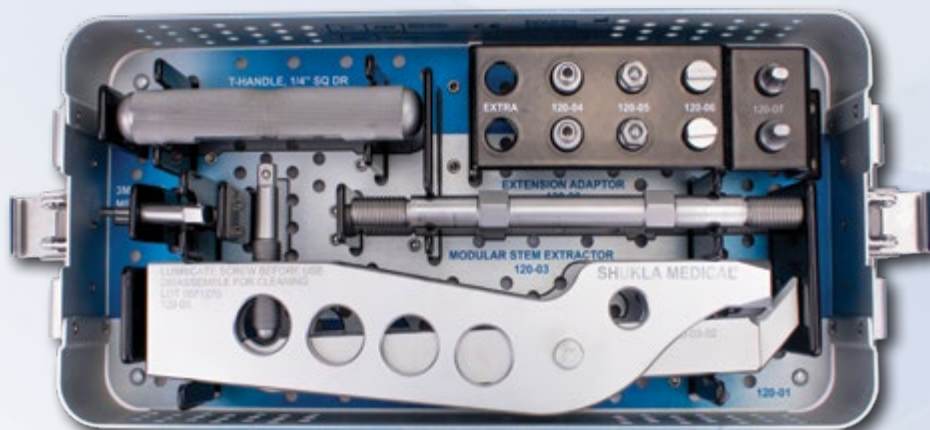
Part Number: S9HIP-MOD

Version: 2

Primary Use

SHUKLA Mod Hip is an accessory system, intended to be used with the SHUKLA Hip Mallet & Strike Plate Frame instrumentation.

The system includes multiple tip configurations for universal compatibility with any modular hip stem.



System History

Work on the Modular Hip system began right after the main Hip system launched thanks to a surgeon from Wisconsin. Due to a nationwide recall on a modular hip stem, the call went out for revisions.

Osteotomies were being ordered for everyone affected - over 170 of them by that surgeon alone! A Shukla engineer flew out to Wisconsin to help design a modular hip extractor. This would go down as the fastest product development cycle ever for Shukla Medical.

The SHUKLA Modular Hip Stem Extraction System (S9HIP-MOD) should be used in conjunction with the SHUKLA Hip System (S9HIP) when removing any modular hip stem.

STEP 7

Choose Clamping Pin (120-04 through 120-07) that corresponds to implant.

- 120-04 Stryker Rejuvenate (Image 10)
- 120-05 Smith & Nephew (Image 11)
- 120-06 Wright Medical (Image 12)
- 120-07 Zimmer (Image 13)



Image 10

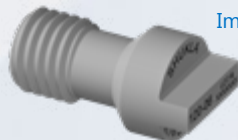


Image 12



Image 11



Image 13

STEP 8

Screw Clamping Pin into Modular Hip Stem Extractor (120-03). Loosen extractor jaw to improve access if necessary.

- 120-04 may be tightened manually or with the 3.0mm Driver Bit (MBT130) (Image 14).
- 120-05 should be tightened manually
- 120-06 & 120-07 should be screwed in manually and will spin freely when fully engaged.



Image 14

STEP 9

Align Clamping Pin with implant and fit extractor lever hook into vacated trunnion fitting (Image 15, Image 16).



Image 15



Image 16

STEP 10

Attach T-Handle (HD218-M01) to Clamping Screw (Image 17) by pushing until you hear a click.



Image 17

STEP 11

Tighten Clamping Screw with T-Handle until you begin to experience resistance. At this point, tighten the screw ½ to 1 full turn maximum past this point. **Do not over-tighten.** The extractor is now fully engaged (Image 18).



Image 18

STEP 12

Remove T-Handle from Clamping Screw. Screw Extension Adapter (120-08) into Extractor. Slide the Strike Plate Frame (MIWE) and a Hex Nut (MIWN) onto the proximal end. Tighten nut fully with the 11/16" Wrench (MIWW) while applying counter-torque with the 1/2" Wrench (WR140).

STEP 13

Extract implant with repeated strikes of the Mallet (MMM5) on the strike plate (Image 19). If implant resists removal after several strikes, loosen bone around implant prior to continuing.



Image 19

For detailed sterilization instructions, please refer to industry standards ANSI/AAMI ST79:2012 & A1:2012 and ANSI/AAMI ST8:2001.

NOTE: All Shukla Medical surgical instruments require manual cleaning with a neutral pH cleanser. Open and disassemble all instruments, making sure to remove all contamination during cleaning. Instruments must be reassembled prior to sterilization. Machine washing is not recommended. Maintenance and care using an autoclaveable lubricant on movable parts is required to preserve the life of the instrument. For more cleaning, inspection, maintenance, and care tips, contact Shukla Medical directly.

The instrument case must be sterilized following the parameters listed below:

Sterilizer Type: Prevacuum
Preconditioning Pulses: 4
Temperature: 132° C
Full Cycle Time: 4 minutes

Dry Time: 60 minutes
Open Door Time: 15 minutes
Cool-down Time: 30 Minutes outside of chamber on a wire rack

For detailed cleaning and sterilization instructions, please visit www.ShuklaMedical.com/Sterilization

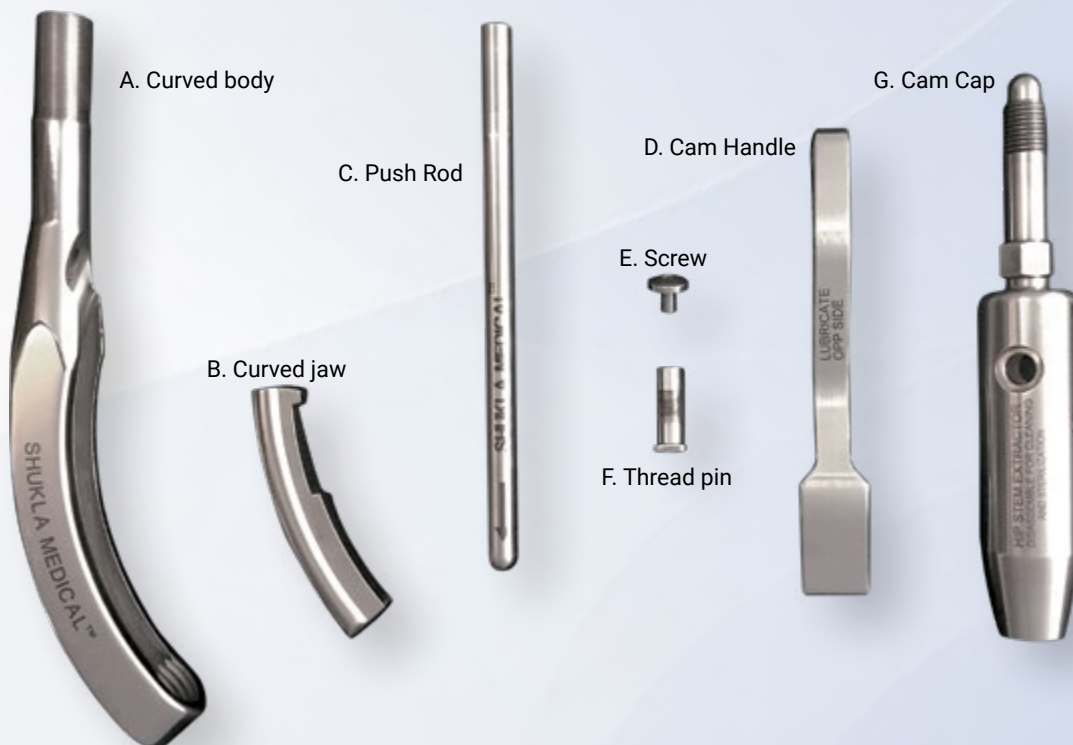
Disassembly Instructions: Hip Stem Extractor

SHUKLA Universal Hip Stem Extractor Assembly (104-04) must be disassembled completely for cleaning. All contamination must be removed at this stage. The extractor must be reassembled prior to sterilization.

1. Unscrew the cam cap by lifting the cam handle & turning counterclockwise
2. Remove the push rod from inside the assembly
3. Grasp the curved jaw and slide out from the curved body
4. Unthread the cam cap screw from the pin using 3mm hex key (not included)
5. Pull the cam handle free from the instrument

Disassembled extractor should result in a total of seven (7) pieces:

- A. Curved body (104-04-01)
- B. Curved jaw (104-04-02)
- C. Push rod (104-04-15)
- D. Cam handle (104-04-17)
- E. Screw (104-04-12)
- F. Thread pin (104-04-10)
- G. Cam Cap (104-04-07)



Reassembly Instructions: Hip Stem Extractor

Once all contamination has been removed from the disassembled extractor, the instrument must be reassembled for sterilization.



1. Insert cam handle into cam cap, lining up holes.



2. Insert threaded pin into holes.



3. Insert screw into threaded pin; tighten using 3mm hex key (not included).



4. Insert curved jaw into curved body. There is an arrow on the jaw to indicate direction.



5. Insert push rod into the curved body, resting on top of the curved jaw. Use the arrow on the jaw as a directional guide.

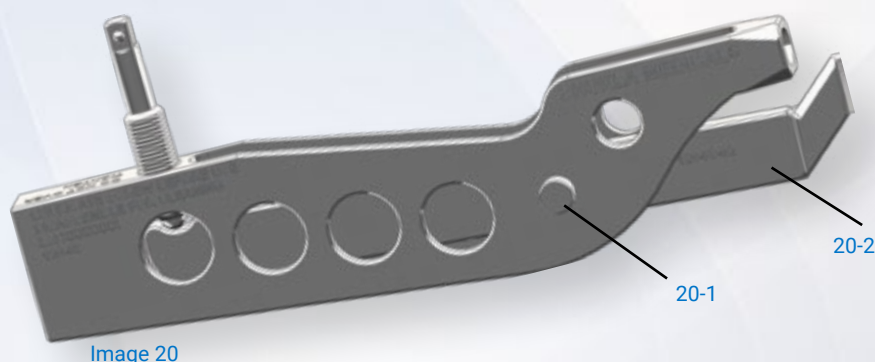


6. Connect the cam cap/handle assembly to the curved body/jaw assembly via the push rod.

Disassembly Instructions: Modular Hip Extractor

The Modular Hip Stem Extractor must be disassembled for cleaning.

1. Use T-handle to loosen extractor jaw and remove Clamping Screw.
2. Unscrew the knurled pivoting screw (Image 20-1) and remove pivoting body and lever (Image 20-2).
3. Unscrew Clamping Pin from Extractor tip.
4. Clean extractor as normal.
5. Reassemble prior to sterilization.



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S9HIP
S9HIP-MOD
104-00
120-00



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CONSULT
INSTRUCTIONS
FOR USE



NON-STERILE
PRODUCT



- Use universal flexible osteotomes (S9BLADE) to remove bone ingrowth from around the implant before proceeding with the extraction to reduce the risk of fractures and to minimize bone loss.
- The Strike Plate Frame can be oriented in two different positions based on either surgeon preference or surgical necessity.
- The Strike Plate Frame can be used in place of a traditional slap-hammer for increased impact strength, vibrational harmonics, and decreased time until extraction.
- If the Hip Stem Extractor's camlock is not properly clamping down onto the hip stem's trunnion, reverse the handle (counter clockwise motion) to loosen it before trying again.
- If the Hip Stem Extractor can rotate around the implant after clamping down onto the trunnion, it needs to be tightened. Rotate handle in a clockwise direction and attempt again.

Components List

Component List - HIP		
Std Qty	Part Number	Description
1	104-01	Case, Hip System
1	104-04	Extractor Assy, Stem, Cam lock
1	104-05	Extractor Assy, Femoral Head
1	104-06	Extractor, Stem, Hook
1	104-07	Extractor, Stem, Monoblock Assy
1	104-08	Tray, Hip System
2	104-11	Tip, Male, 12-24 UNC-2A, <i>Single Use</i>
2	104-12	Tip, Male, 12-28 UNF-2A, <i>Single Use</i>
2	104-13	Tip, Male, 1/4-20 UNC-2A, <i>Single Use</i>
2	104-14	Tip, Male, 1/4- 28 UNF-2A, <i>Single Use</i>
2	104-15	Tip, Male, 5/16- 18 UNC-2A, <i>Single Use</i>
2	104-16	Tip, Male, 5/16-24 UNF-2A, <i>Single Use</i>
2	104-17	Tip, Male, 3/8-16 UNC-2A, <i>Single Use</i>
2	104-18	Tip, Male, 3/8-24 UNF-2A, <i>Single Use</i>
2	104-19	Tip, Male, 7/16-14 UNC-2A, <i>Single Use</i>
2	104-20	Tip, Male, 7/16-20 UNF-2A, <i>Single Use</i>
2	104-21	Tip, Male, M5 X 0.8-6g, <i>Single Use</i>

Component List - HIP		
Std Qty	Part Number	Description
2	104-22	Tip, Male, M5.5 X 0.9-6g, <i>Single Use</i>
2	104-23	Tip, Male, M6 X 0.75-6g, <i>Single Use</i>
2	104-24	Tip, Male, M6 X 1.0-6g, <i>Single Use</i>
2	104-25	Tip, Male, M7 X 1.0-6g, <i>Single Use</i>
2	104-26	Tip, Male, M8 X 1.0-6g, <i>Single Use</i>
2	104-27	Tip, Male, M8 X 1.25-6g, <i>Single Use</i>
2	104-28	Tip, Male, M10 X 1.0-6g, <i>Single Use</i>
2	104-29	Tip, Male, M10 X 1.25-6g, <i>Single Use</i>
2	104-30	Tip, Male, M10 X 1.50-6g, <i>Single Use</i>
1	MIWE	Strike Plate Frame Assy, with Handle
3	MIWN	Nut, Hex, 7/16-20 UNF-2B
1	MIWW	Wrench, Double Open End, 1/2" & 11/16"
1	MMI1222	THandle, Assy, Quick Connect, Hudson
1	MMM5	Mallet Assy
1	SCS011	Lid, Hip, Knee, Broken & Stripped, Blade Systems
2	SH700	Connector Shaft for Strike Plate
1	WR140	Wrench, Double Open End, 5/16" & 1/2"

Component List - HIP-MOD		
Part #	Description	Std Qty
120-01	Case, Modular Hip System	1
120-02	Lid, Modular Hip System	1
120-03	Extractor Assy, Modular Stem	1
120-04	Tip, Modular Stem, Stryker	2
120-05	Tip, Modular Stem, Smith & Nephew	2
120-06	Tip, Modular Stem, Wright Medical	2
120-07	Tip, Modular Stem, Zimmer	2
120-08	Connector Shaft, Strike Plate to Extractor, 7/16-20 UNF 2A both ends	1
HD218	THandle Assy, Square, 1/4"	1
MBT130	Tip Assy, Hex, Male, 3 mm	1

For use in conjunction with the SHUKLA Hip (S9HIP)



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.**

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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.