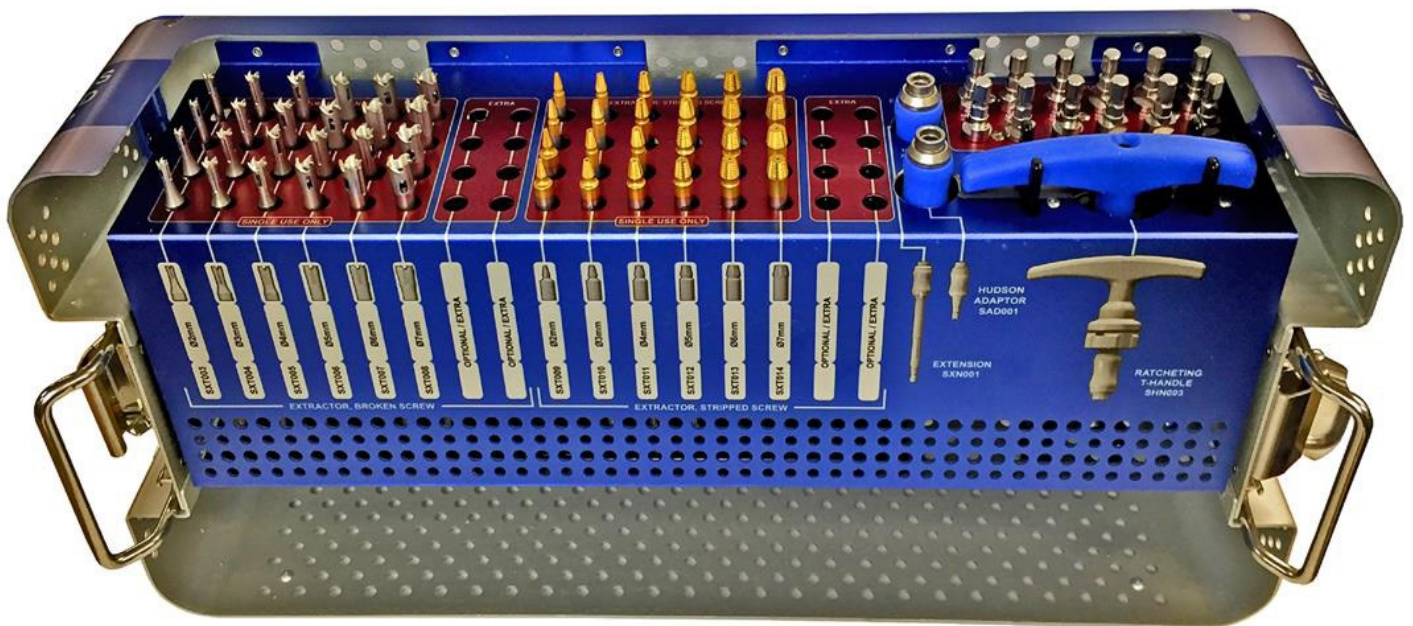


Xtract-All[®] SCREW^{V.2}

Universal Broken & Stripped Screw Extraction System

Surgical Technique Guide



Xtract-All[®] Screw V.2 Case

Introduction

The Xtract-All® Screw V.2 system (S9SCRW) is a cannulated universal extraction system intended to remove virtually all broken, stripped and seized bone screws. The Xtract-All® Screw V.2 system was designed to achieve minimum bone loss when removing damaged screws.

The system consists of:

- A set of 6 **Broken Screw Extractor Tips**: Sizes range from 2 mm to 7 mm in approximately 1½ mm increments, with 4 extractors per each size.
- A set of 6 **Stripped and Seized Screw Extractors Tips**: Sizes range from 2 mm to 7 mm in approximately 1½ mm increments, with 4 extractors per each size.
- A set of 6 **Drill Bits**: Sizes range from 2 mm to 7 mm in 1 mm increments, with 2 Drill Bits per each size.
- A **Hudson Quick Connect** to adapt to standard surgical drills.
- A ratcheting **T-Handle** for use when removing screws manually.
- An **Extractor Extension** when a greater distance from the extractor is needed.

Note: Extractor Tips and Drill Bits in the Xtract-All Screw V.2 system are single use only and must be discarded after use.

Warning and Precautions

Preoperative

The surgeon should be familiar with the general principles and techniques for removal of orthopedic implants.

The instruments should be inspected for visible damage prior to use. **DO NOT** use the product if damage is suspected or visible.

Only validated cleaning and sterilization procedures should be used.

Operative

Proper handling and storage of the instrumentation is mandatory. Damage to the instrumentation may produce stress and cause defects, which could become a focal point for failure.

The surgeon should be cautious with patient positioning and/or excessive force exertion while extracting implants using the instrumentation provided in this system.

List of Components

1. Broken Screw Extractor Tips



STX0003C: 2.0mm — 2.5mm



STX0004C: 2.5mm — 3.5mm



STX0005C: 3.5mm — 4.5mm



STX0006C: 4.5mm — 5.5mm



STX0007C: 5.5mm — 6.5mm



STX0008C: 6.0mm — 7.0mm

2. Stripped Screw Extractors Tips



STX0009: 2.0mm — 2.5mm



STX0010C: 2.5mm — 3.5mm



STX0011C: 3.5mm — 4.5mm



STX0012C: 4.5mm — 5.5mm



STX0013C: 5.5mm — 6.5mm



STX0014C: 6.0mm — 7.0mm

3. Drill Bits



SBT001: 2mm



SBT002: 3mm



SBT003: 4mm



SBT004: 5mm



SBT005: 6mm

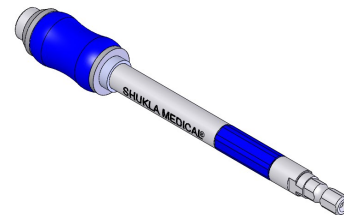


SBT006: 7mm

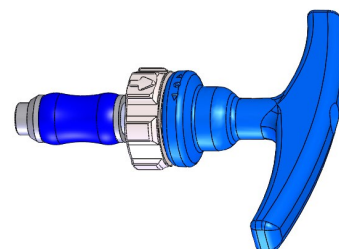
4. Hudson Quick Connect (SAD001)



5. Extension (SXN001)



6. Ratcheting T-Handle (SHN003)



Surgical Technique

Step 1

Once the broken or stripped screw has been exposed, the surgeon should estimate the size of the screw diameter.

Broken Screws

If the screw being removed has its head broken off, select the proper size Broken Extractor Tip (SXT003C to SXT008C) (See Figure 1). If the screw is embedded, estimate the screw diameter based on the X-ray, then select the proper size Broken Extractor Tip (SXT003C to SXT008C) (See Figure 1).



Figure 1

NOTE: The proper size Extractor Tip will be slightly larger than the diameter of the exposed screw shaft and will capture the screw shaft inside the Extractor Tip (See Figure 2).



Figure 2

CAUTION: Care should be taken to ensure the appropriate Extractor Tip is used. If the Extractor Tip is too large, excessive bone removal will occur.

Stripped Screws

If the screw being removed does not have its head broken off, select the proper size Stripped Extractor Tip (SXT009 - SXT014C), to match the size of the female socket within the screw head (see Figure 3).



Figure 3

If the head of the screw is embedded, estimate the socket size based on the X-ray. Several attempts may be necessary with different sizes before the Extractor Tip engages into the screw head. The key to selecting the proper size

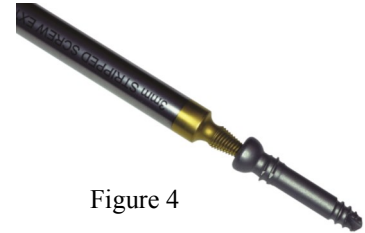


Figure 4

Extractor Tip, is when the threads engage the side walls of the socket, without the Extractor Tip striking the bottom of the socket (See Figure 4).

If the Extractor Tip fits into the female socket, but does not engage the socket, select the next larger extractor size. Continue until engagement is reached.

Note: If the surgeon experiences problems seating the extractor into the female socket, Drill Bits may be used to deepen, clean up, and better define the female socket in the screw head.

If the surgeon continues to experience seating problems with the Stripped Screw Extractor, a Broken Screw Extractor may be used. Select the Broken Screw Extractor Tip that fits over the entire head of the screw (See Figure 5).

On a Locking Plate, the surgeon may choose to first drill the head off the screw. Next, remove the plate and use the Broken Screw Extractor to remove the screw.



Figure 5

Note: Extractor Tips and Drill Bits in the Xtract-All Screw V.2 system are single use only and must be discarded after use.

Surgical Technique (Continued)

Step 2

Attach the Extractor to the T-Handle (SHN003) (See Figure 6).



If the surgeon wishes to remove the screw under power, the Hudson Quick Connect (SAD001) should be used to attach the extractor to the drill. If additional space is needed between the T-Handle or surgical drill, attach the extension to the extractor and T-Handle.

Step 3

Broken Screws

Set the Broken Screw Extractor over the shaft of the broken screw and remove it by turning the T-Handle in a **counterclockwise direction or running the surgical drill in reverse** (See Figures 7 & 8).

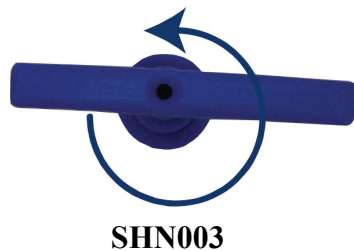


Figure 8

Stripped Screws

Place the tip of the Stripped Screw Extractor in the well of the stripped screw head and remove it by turning the T-Handle in a **counterclockwise**

direction or running the surgical drill in reverse (See Figures 9 & 10).

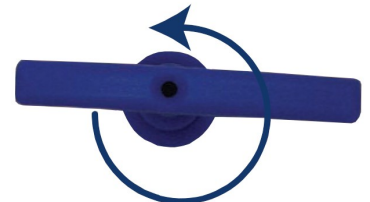


Figure 10

The direction of the ratcheting T-Handle is controlled by turning the metal collar on the handle (See Figure 11).



Figure 11

Step 4

After the screw has been removed, dispose of the extractor tip.

Note: If a screw is broken mid-shaft and both ends of the screw are accessible, each portion can be removed separately. Remove the screw by attaching an Extractor to an end of the screw fragment then removing both ends by either turning the handle in a **counterclockwise direction or running the surgical drill in reverse.**

Surgical Technique (Continued)

No	Part Number	Description	Qty
1	SCS003	Case	1
2	SCD001	Hudson-Hex Quick Disconnect, 1/4" Shaft	1
3	SHN003	Ratcheting T-Handle, Hudson Quick Connect	1
4	SXN001	Extension, 1/4" Hex Adapter	1
*5	SXT003C	Extractor Tip for 2.0-2.5 mm Broken Screw	4
*6	SXT004C	Extractor Tip for 2.5-3.5 mm Broken Screw	4
*7	SXT005C	Extractor Tip for 3.5-4.5 mm Broken Screw	4
*8	SXT006C	Extractor Tip for 4.5-5.5mm Broken Screw	4
*9	SXT007C	Extractor Tip for 5.5-6.5mm Broken Screw	4
*10	SXT008C	Extractor Tip for 6.0-7.0mm Broken Screw	4
*11	SXT009	Extractor Tip for 2.0-2.5mm Stripped Screw Head	4
*12	SXT010C	Extractor Tip for 2.5-3.5mm Stripped Screw Head	4
*13	SXT011C	Extractor Tip for 3.5-4.5 mm Stripped Screw Head	4
*14	SXT012C	Extractor Tip for 4.5-5.5 mm Stripped Screw Head	4
*15	SXT013C	Extractor Tip for 5.5-6.5 mm Stripped Screw Head	4
*16	SXT014C	Extractor Tip for 6.0-7.0 mm Stripped Screw Head	4

No	Part Number	Description	Qty
*17	SBT001	Drill Bit, Ø2mm	2
*18	SBT002	Drill Bit, Ø3mm	2
*19	SBT003	Drill Bit, Ø4mm	2
*20	SBT004	Drill Bit, Ø5mm	2
*21	SBT005	Drill Bit, Ø6mm	2
*22	SBT006	Drill Bit, Ø7mm	2

Cleaning and Sterilization

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 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.

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Notes

Xtract-All[®] SCREW^{V.2}

Universal Broken & Stripped Screw Extraction System

A cannulated universal screw system intended to remove virtually all broken, stripped & seized bone screws...

...Because Every Minute Counts



- **Cutting-Edge Instrumentation Designed For**
 - ⊕ Efficient screw removal
 - ⊕ Minimal bone loss
- **Diverse Range of Broken & Stripped Extractors**
 - ⊕ Extended length offers visibility & functionality
 - ⊕ Cannulated tips for buried & challenging screws