

Comprehensive Reverse Shoulder System

Humeral Tray Taper Extraction- Surgical Technique

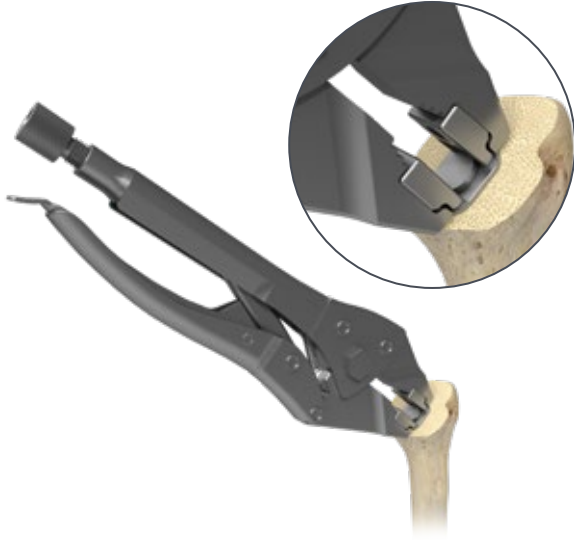


Figure 1



Figure 2

Preoperative Planning

There are two techniques for extracting a humeral tray taper from a Comprehensive stem. Each method is detailed below. If the stem shows signs of significant damage or wear, it may be necessary to remove the entire taper/stem construct.

Note: Inspect the modular extractor and tips of the taper extraction pliers for wear prior to surgery. If the tips of the taper extraction pliers appear worn, sterile replacements are available (part 110028522).

Method 1

Instruments needed

Taper Extraction Pliers (110028440), Slap Hammer (located in Comprehensive Reverse Set (31-473621)) Taper Extraction Pliers Replacement Tips (optional (110028522)), 3.5mm Hex Driver (optional-located in Comprehensive Reverse Set (110010424))

Attach the vice grips to the exposed top of the taper at an angle that allows access for extraction.

It may require a series of adjustments to the handle and/or knob at the end of the pliers to obtain a secure (Figure 1). Once the pliers are securely attached to the taper; thread the slap hammer into the threaded portion of the knob. Check that the pliers remain secure after the slap hammer has been assembled. With the humerus secured, apply a gentle tapping motion to the handle of the slap hammer (Figure 2). Continue with increasing force until the humeral tray taper comes free of the stem.

If repeated attempts at removal of the humeral tray taper are made unsuccessfully then proceed to method 2 or stem extraction.

Note: The 3.5mm hex driver located in the Comprehensive Reverse set is used to replace the tips of the taper extraction pliers.



Figure 3



Figure 4

Method 2

Instruments needed

Modular Extractor (110028439), ¼ inch L Hex Wrench (110028489), Slap Hammer (located in Comprehensive Primary Set (31-473621))

Due to the size of the modular extractor, a larger than typical incision may be required. Prior to the assembly of the modular extractor to the humeral tray taper, use the provided ¼ inch hex wrench to fully tighten the two short bolts located on the top of the modular extractor. Then use the wrench to loosen the two long bolts located on the end of the modular extractor. Attach the modular extractor over the exposed end of the remaining humeral tray taper (Figure 3). Alternate tightening the long bolts with the ¼ inch hex wrench until the modular extractor is securely attached to the taper.

Thread the slap hammer into the top of the modular extractor. Apply a gentle tapping motion to the handle of the slap hammer to continue with increasing force until the humeral tray taper comes free of the stem.

If repeated attempts at removal of the humeral tray taper are made unsuccessfully then proceed to method 1 (if not already attempted) or stem extraction.



Figure 5



Figure 6

Stem Extraction

Instruments needed

Stem Extractor (110028441), ¼ inch L Hex Wrench (110028489), Slap Hammer (located in Comprehensive Primary Set (31-473621))

If neither of the above methods successfully removed the humeral tray taper from the stem then it is necessary to proceed with stem extraction.

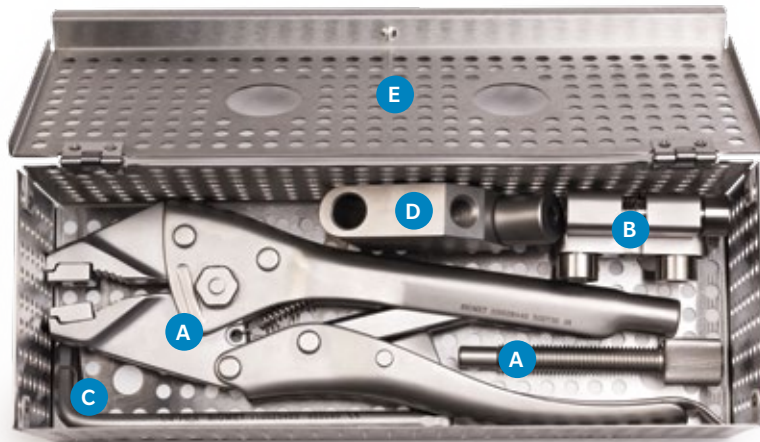
Prior to extraction, it may be helpful to use flexible osteotomes around the proximal portion of the humeral stem to separate the bone from the PPS coating.

Position the larger, non-threaded hole of the stem extractor over the remaining taper. This should place the attachment bolt in line with the shaft of the stem. Note that it may be necessary to trim down the remaining humeral tray taper for the extractor to fit. Using the ¼ inch hex wrench, tighten the attachment bolt. The attachment bolt should depress into the divot on the most superior portion of the humeral stem (Figure 5)


Thread the slap hammer into the angled threaded hole at the top of the stem extractor. Apply increasing force to the slap hammer until the humeral stem is freed (Figure 6).

For re-implantation of the stem, refer to the Comprehensive surgical technique (BMET0403.2).

Instrument Tray



Taper Extraction Instrumentation (Loaner Set 999266)

Product	Description	Label	Quantity	Part Number
	Vice Grip Extractor	A	1	110028440
	Modular Extractor	B	1	110028439
	X inch L Ball Hex Wrench	C	1	110028489
	Stem Extractor	D	1	110028441
	General Instrument Bin X2	E	1	110028922
	Vice Grip Replacement Tips (STERILE)		1	110028522

Note: that these modular bins may be sterilized individually or placed into the area labeled “Modular Bin” in the Comprehensive Revision Tray for sterilization.

Other instrumentation (not included in set):

Product	Description	Part Number
	Slide Hammer (located in Comprehensive Primary Set)	31-473621
	3.5mm Hex Driver (located in Comprehensive Reverse Set)	110010424

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