

8 Barsoum-Krebs Flexible Trephines

**NEW
PRODUCT
RELEASE**

The Barsoum-Krebs Trephine offers the Surgeon a revolutionary solution to removing cement from the IM canal during revision surgery. Cement removal is accomplished by using a flexible trephine that is the same diameter as the IM canal in order to remove the cement and capture that cement neatly inside the trephine.

Other applications include coring out IM nails or modular Hip Stems that have extensive cortical bone in growth and cutting broken IM Nail screws, both proximal and distal, from the IM canal.

Available with:

Flat Tip

- Removes Solid Cement from IM Canal

Conical Tip

- Removes Thin Wall Cement from IM Canal

Open Tip

- Frees IM Nails
 - with Cortical Bone In-growth
 - Broken Screws

Guide Wire

- Drills down centre of plug & guides trephine

Attachments include:

- 2 Interface Devices
- 2 Cement Chisels
- 2 Retrograde Cement Chisels
- Mallet
- Guide Handle



Surgical Technique Guide

PMMA Bone Cement and Plug Removal

Step 1 -

Using a cannulated reamer, drive the guide wire (SH746) through the medullary canal at least 2cm into the centre of the cement plug. Ensure not to drill past the ends of the flutes, as this will clog them and the PMMA will melt and re-solidify causing the guide wire to freeze and possibly break.

Note -

Ensure that the guide wire is centred in the canal and cement plug to allow maximum uniform removal of bone cement from the inner walls of the canal. Failure to centre the guide wire may result in the removal of healthy cortical bone along the wall of the medullary canal.



Step 2 -

The medullary canal should be templated prior to surgery (using overlay FG0002) to estimate the appropriate size of trephines, this should be confirmed using fluoroscopy. Once the correct size has been determined, attach the desired size conical tipped trephine (MMI1229-XX) to a reamer using the quick disconnect interface device (MMI1064).

Note -

The Reaming setting must be used when using the conical and flat tipped trephines.

WARNING -

Fast drilling speed could result in melting and subsequent re-solidifying of the bone cement. This could cause the trephines to freeze and break inside the medullary canal. Irrigation of the canal is recommended while reaming. **DO NOT STOP THE REAMER WHILE INSIDE THE CANAL!** This could result in the trephine freezing and breaking.



Step 2 -

Carefully fit the tip of the trephine through the closest size of the guide handle (MMI1233) and over the guide wire. Begin reaming into the proximal end of the femur. Ensure to begin reaming before the trephine enters the canal.



Surgical Technique Guide

PMMA Bone Cement and Plug Removal

Step 4 -

Ream slowly tracking progress under the fluoroscope until the conical trephine reaches the cement plug.

Note -

If the trephine stops progressing, the tip could be clogged. Simply remove the trephine from the canal while continuing to rotate it. Once the tip is out of the canal and access to the tip is possible, remove any cement chips from the cutting surface. Repeat from Step 3.

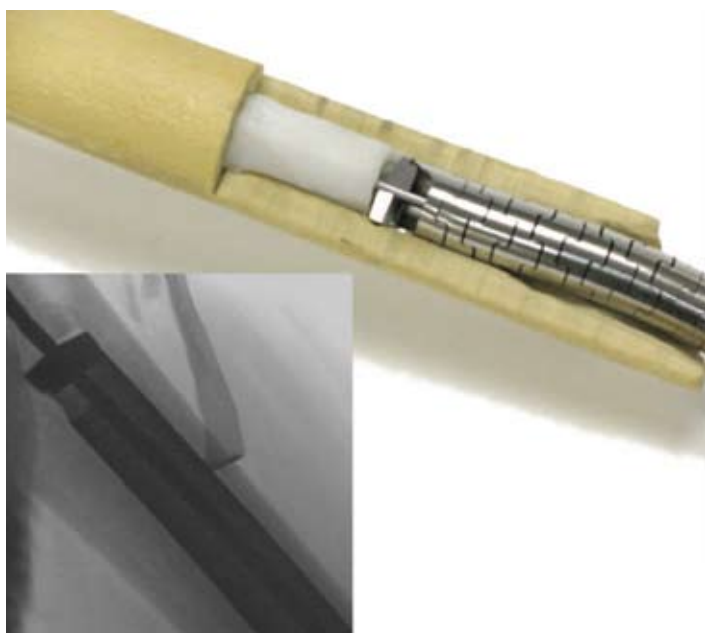


Step 5 -

Remove the conical tipped trephine (MMI1229-XX) and replace with the same sized or smaller (If desired) flat tipped trephine (MMI1228-XX). DO NOT remove the guide wire from the cement plug, but if the guide wire is or should become eccentric then reposition under fluoroscopy. Repeat Step 3 with the flat tipped trephine. Ream through and remove the cement plug at the bottom of the medullary canal. Ensure the guide wire remains centred in the cement plug and reposition if necessary, maintaining at least 2cm of depth in the cement plug.

WARNING -

AT ANY POINT, DO NOT REAM PAST THE END OF THE GUIDE WIRE.



Step 6 -

Any remaining cement may be removed using the provided straight (CH102 & CH103) and retrograde chisels (MMI1231 & MMI1232).



Surgical Technique Guide

Intramedullary Nail Removal

Step 1 -

For IM nails with an end cap, begin by removing the end cap using instrumentation and direction from the Winqvist III IM Nail removal system and surgical technique guide.



Step 2 -

After the end cap has been removed, thread the appropriate extractor tip into the IM nail using the Winqvist III Nail removal technique utilizing the extractor body and T-handle.

Note -

It is important to utilize this technique to “pre-thread” the nylon insert in the Winqvist III tip to allow the trephine nylon guide to thread on later. If this is not done, the nylon guide threads are likely to become stripped. This may result in the nylon guide becoming loose or falling off, which may in turn cause the trephine to not work properly.



Step 3 -

The medullary canal and prosthesis should be templated prior to surgery (using overlay FG0001) to estimate the appropriate size trephine (MMI1230-XX). This should be confirmed using fluoroscopy. Based on IM nail outside diameter that is proximal to surgical incision, select the corresponding open tip trephine and attach it to a power drill using the quick disconnect interface device (MMI1064).



Surgical Technique Guide

Intramedullary Nail Removal

Step 4 -

Once the extractor tip is in place, firmly thread the provided nylon trephine guide onto the top of the extractor tip. Do not over tighten as nylon threads may strip.



Step 5 -

Place the trephine through the closest size of guide handle (MMI1233) and over the entire nylon guide. Apply power to the drill and proceed to advance over the IM nail.

WARNING -

For every inch of downward motion, you must back all the way out to the nylon guide to clear bone particulate from the cutting site before proceeding further.

Note -

It is OK to use drill setting for this procedure as bone is being cut.

Screw Cutting Scenario -

For broken IM nail screws proceed as mentioned above until the screw is reached. Apply power to the drill and maintain constant pressure to cut through the screw. Continue applying power to the drill and proceed to ream over the IM nail. Irrigate the canal and suction to prevent contamination of surrounding tissue.

WARNING -

Be sure to have the trephine spinning before and upon reaching the screw. If the trephine is not spinning and the trephine meets the screw, the teeth could become caught on the screw and bind up the trephine, causing it to break.



Surgical Technique Guide

Modular Stem & Stepped IM Nail Removal

For implants in which the nylon guide cannot be attached, follow this procedure

Step 1 -

In these situations, remove the first part of the modular stem with manufacturers equipment and select the appropriate open tip trephine (MMI1230-XX) depending on the entry point outer diameter of the implant.

Note -

The medullary canal and prosthesis should be templated prior to surgery (using overlay FG0001) to estimate the appropriate size trephine. This should be confirmed using fluoroscopy.



Step 2 -

Create an entry counterbore around the entry point of the implant using the provided chisels or other suitable instrument. This will allow the open tip trephine to fully engage onto the implant without “wandering.”



Step 3 -

Based on prosthesis' outside diameter that is proximal to surgical incision, select the corresponding open tip trephine (MMI1230-XX) and attach it to a power drill using the quick disconnect interface device (MMI1064).



Surgical Technique Guide

Module Stem & Stepped IM Nail Removal

Step 4 -

Ensure that at least the entire length of the cutting tip is placed over the implant before applying power to the drill.



Step 5 -

Once aforementioned conditions are met, apply power to drill and proceed to ream over the implant as outlined in the IM Nail removal system section of this surgical technique guide.

Note -

If an IM nail is stepped (contains an abrupt change in diameter), two sizes of trephines can be used, one for larger end (proceed as usual with nylon guide) and one for opposite end (proceed as mentioned to counterbore).



8. BARSOUM-KREBS FLEXIBLE TREPHINES CASE CONTENT

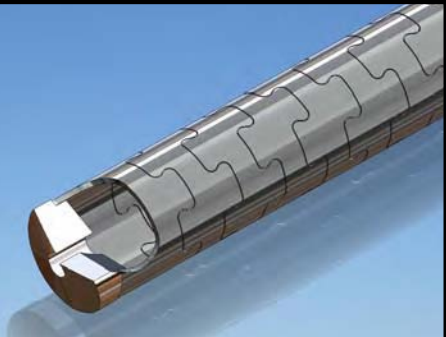
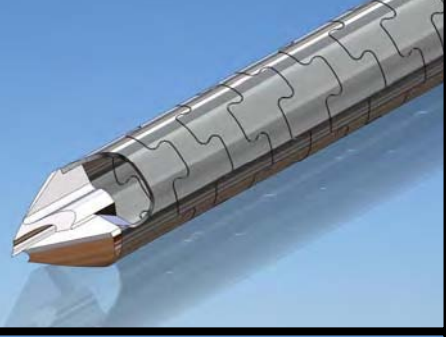

Surgical Technique Guide



MKS 1030 Flexible Trephine Accessory Kit

Part Number	Description	Qty	Part Number	Description	Qty
CH102	10mm Cement Chisel	1	LMG034	Mallet	1
CH103	17mm Cement Chisel	1	MMI1233	Guide Handle	1
MMI1231	10mm Retrograde Cement Chisel	1	MMI1064	Interface Device	2
MMI1232	15mm Retrograde Cement Chisel	1			

Flexible Trephines (Single Use Only - Sterile Packaged)

Catalogue No.	Description	Qty		
MMI1228-10	10mm Flat Tip Trephine (Cement)	1		
MMI1228-11	11mm Flat Tip Trephine (Cement)	1		
MM1228-12	12mm Flat Tip Trephine (Cement)	1		
MM1228-13	13mm Flat Tip Trephine (Cement)	1		
MM1228-14	14mm Flat Tip Trephine (Cement)	1		
MM1228-15	15mm Flat Tip Trephine (Cement)	1		
MM1228-16	16mm Flat Tip Trephine (Cement)	1		
MM1228-17	17mm Flat Tip Trephine (Cement)	1		
MM1228-18	18mm Flat Tip Trephine (Cement)	1		
MM1229-10	10mm Conical Tip Trephine (Cement)	1		
MM1229-11	11mm Conical Tip Trephine (Cement)	1		
MM1229-12	12mm Conical Tip Trephine (Cement)	1		
MM1229-13	13mm Conical Tip Trephine (Cement)	1		
MM1229-14	14mm Conical Tip Trephine (Cement)	1		
MM1229-15	15mm Conical Tip Trephine (Cement)	1		
MM1229-16	16mm Conical Tip Trephine (Cement)	1		
MM1229-17	17mm Conical Tip Trephine (Cement)	1		
MM1229-18	18mm Conical Tip Trephine (Cement)	1		
MMI1230-07	7mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-08	8mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-09	9mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-10	10mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-11	11mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-12	12mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-13	13mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-14	14mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-15	15mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-16	16mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-17	17mm Open Tip Trephine (IM Nail) w/Guide	1		
MMI1230-18	18mm Open Tip Trephine (IM Nail) w/Guide	1		
SH746	3.2mm (1/8") Guide Wire	1		