

The Coremus™ IM Nail Extractor System

Guidance for use



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Before and after each use ensure that:

- All bolts are examined for damage and freely fit onto the sliding hammer fully (replace if necessary).
- The spanners fit the flat sections on each bolt.
- The spanners fit the flat sections on the sliding hammer.
- The threads at both ends of the sliding hammer shaft are undamaged.

Cleaning: Before and after each use ensure that:

- Disassemble sliding hammer (three parts).
- The threads at both ends of the sliding hammer shaft and the internal thread of the handle are clean and free of bone debris.
- All bolt threads, internal and external are clean and free of bone debris. Agitate with a soft brush if necessary.
- The Coremus Extractor system should be sterilized at a temperature of 134°C-137°C for a minimum of three minutes.

Do not use wire wool or abrasive materials

“Confidence in the removal of an IM Nail”

The Coremus IM Nail Extractor System* is developed and manufactured in the UK by Newsplint and was first in clinical use over 15 years ago.

In the last 15 years this system has been used successfully to remove thousands of intramedullary nails of known and unknown origin in hospitals across the UK.

The Coremus IM Nail Extractor System does not rely on single use or universal extractors that may, or may not, engage or remove a firmly fixed nail. We believe that only dedicated threaded bolts will ensure “Confidence in the Removal of an IM Nail.”

Container One of the Coremus IM Nail Extractor System consists of 34 re-usable dedicated extractor bolts, these extractor bolts will remove over 80 different IM nails of various manufacturers designs, both old and new.

Container Two of the Coremus IM Nail Extractor System consists of a comprehensive range of drivers to remove the screws used with the manufacturers nails. Along with broken screw coring devices, Gamma type locking screw removers, and various other instruments to assist with the safe and successful removal of IM Nails.

Complementing the Coremus IM Nail Extractor system are the Coremus Broken Implant Removal System and the Coremus Damaged Screw Removal System. The Coremus Broken Implant Removal System enables the removal of a broken IM nail or a broken hip or knee implant stem. This kit contains:

- Extractors for broken IM Nails
- Specialised coring devices for retrieving broken nail and stem fragments
- A targeting instrument for broken hip stem extraction

The Coremus Damaged Screw Removal System enables the removal of broken or damaged screws and this can be used in conjunction with the Coremus IM Nail Extractor System where the locking screws may be damaged.

Aware of ongoing developments in the field of fracture fixation, we continually monitor and make available new extraction devices to ensure “Confidence in the Removal of an IM Nail”.

Coremus Extractor System - Container 1 Bolt Set

Container 1:
Extraction Bolt Set
CES-INE-BLT



Container 1:
Tray 1 (CES-T-01)
Consisting of 34 dedicated extraction bolts. For list of tray contents please see page 10.

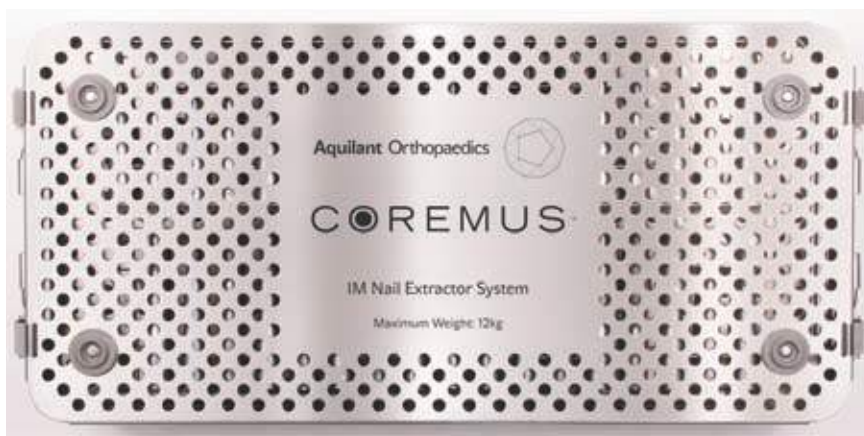


Container 1:
Tray 2 (CES-T-02)
Consisting of sliding hammer and additional instrumentation. For list of tray contents please see page 10.

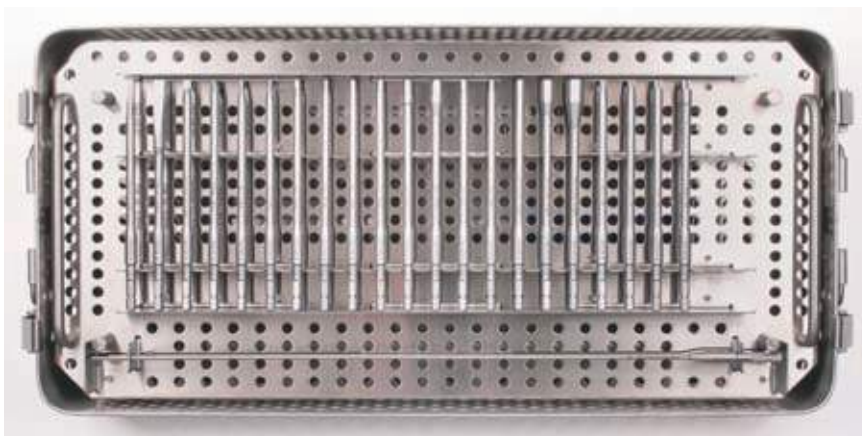


Coremus Extractor System - Container 2 Screwdriver Set

Container 2:
Screwdriver Set
CES-INE-DRV



Container 2:
Tray 1 (CES-T-03)
Consisting of 23 driver shafts. For list of tray contents please see page 11.



Container 2:
Tray 2 (CES-T-04)
Consisting of 3 coring devices for screws, specific screw removers and screwdriver handles. For list of tray contents please see page 11.



IM Nail Removal Guidelines



Identify IM Nail to be removed if known and find bolt number and corresponding screwdrivers from table on pages 8 and 9.

Remove end cap and all transverse locking screws (removing soft tissue with bone pick if required)

For removal of unknown nails: select the nearest bolt size, offer up to exposed implant gently and try to engage the threads. Do not apply force as this will damage the threads and prevent easy extraction.

Proceed through bolts until correct size bolt is found.

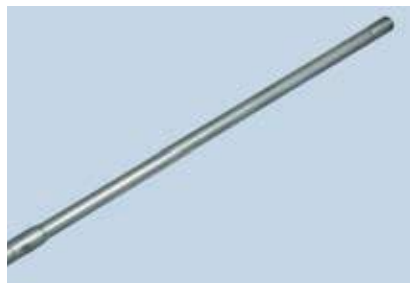


Clear any soft tissue and debris from the internal threads of the IM Nail to be removed.

Offer the correct extraction bolt into the IM Nail and screw in fully.



In the event of restricted access, Extension Bolt (Cat No. CES-SH-04) can be attached to the chosen Extraction Bolt prior to insertion into the IM Nail.



Once the chosen extraction bolt has been screwed fully into the IM Nail attach the sliding hammer shaft ensuring the correct end (labelled bolt) is screwed into the extraction bolt.



Attach the Sliding Hammer to the Sliding Hammer Shaft.



Finally, screw the Sliding Hammer Handle onto the Sliding Hammer Shaft and proceed with the extraction using short, sharp strokes.

CAUTION

- Be careful not to trap your hand between the sliding hammer and the handle
- Always wear eye protection

IM Nail Removal Guidelines For Gamma type Femoral Screws



Expose, identify, and clean the transverse Gamma type femoral screw. Offer and engage the appropriate extractor (CES-SR-01/02/03/04) and secure with the 5mm hex driver (CES-DS-10). Using the offset hex 'T' handle (CES-1-05) unscrew the Gamma type screw.



It is important to release any locking device associated with the Gamma type screw prior to its removal.

Coremus IM Nail Extractor System Key

Manufacturer	Nail	Bolt No.	Drivers
Acumed	Polarus Humeral	P8	2.5mm Hex / 3.5mm Hex
Aesculap	Targon Femoral	P21	
Downs	Targon Tibial	P15	
B Braun	Huckstep Femoral and Tibial	P5	3.5mm Hex
AO Original	Universal Tapered	C2 / C4 / C6	
	V Thread Tapered	C1 / C3 / C5	
Austofix	All Models	P5	
Biomet	Ankle Arthodesis, Uniflex Tibial, Humeral and Retrograde Femoral	P12	3.5mm / 5.0mm Hex
	Knee Arthrodesis, Holland Femoral, Uniflex Femoral and Uniflex Recon	P17	5.0mm Hex
	Paediatric Nail	P7	5.0mm Hex
	Peri-Trochanteric Nail	P16	3.5mm Hex / 5.0mm Hex / 6.0mm Square
	VariWall	C1 / C3 / C5	
Citeffe	Femoral, Tibial and Hip	P15	
Corin	Halder Humeral	P5	
Cremascoli	Hexagone Tibial	P14	2.5mm Hex / 3.5mm Hex / 5.0mm Hex
	Femoral	P22	3.5mm Hex / 5.0mm Hex
Depuy/ACE	AIM Humeral and Tibial	P8	2.5mm Hex / 3.5mm Hex / 4.5mm Hex
	AIM Femoral, Supracondylar and A.R.T.Retrograde	P13	3.5mm Hex / 5.0mm Hex
	ATN Trochanteric Nail	CES-SR-04	
	Chandler Tibial	P7	N/A
	Versanail Ankle Fusion Nail	P13	3.5mm Hex
Encore	True/Fix Distal Femoral, Proximal Humeral and True/Fix Ankle Fusion	P8	3.5mm Hex
	Femoral and Tibial	P1	
Fry	Hexagone Tibial	P11	
Orthofix	CentroNail	P5	
	VeroNail	P19	
Richards	Tibial	P11	
	Recon	P23	
	Femoral	P17	
	IM Hip Screw	P26	
Smith and	Russel-Taylor Humeral	P7	3.5mm Hex
Nephew	Russel-Taylor Femoral and Recon	P17	3/16" Hex / 5/32" Hex
	Russel-Taylor Tibial	P12	5/32" Hex
	Russel-Taylor Delta Tibial	P12	3.5mm Hex / 3/16" Hex
	Russel-Taylor Delta Femoral and Recon	P17	3.5mm Hex / 5/32" Hex
	Trigen All	P12	3/16" Hex / 6.0mm Hex Socket
	Ender Nail	H1	N/A
	Intracplant Gliding Nail (For Main Femoral Nail)	P24	
	Intracplant Gliding Nail (For The Gamma Arm)	P9	
	T-2 Humeral	P4	2.5mm Hex
	Tri-Gen Hindfoot	P12	3/16" Hex (equivalent to 4.7mm)

Coremus IM Nail Extractor System Key

Manufacturer	Nail	Bolt No.	Drivers
Stryker	Humeral	P5	3.5mm 2.5mm Long Thin Shaft
Howmedica	Gamma	P25 / P15	4.0mm Hex / 5.0mm Hex
Osteonics	Gamma 3	P15	5/32" Hex / 8.0mm Hex / Screw Remover (Gamma)
	Gross/Kempf Femoral and Tibial	P21	3.5mm Hex / 5.0mm Hex
	IC Nail Femoral, Tibial and T-2 Tibial, Femoral Antegrade/Retrograde	P14	3.5mm Hex / 6.0mm Hex / 4.0mm Hex Socket
	Seidel Humeral	P3	2.5mm Hex Long Thin Shaft
	Alta Humeral	P8	T20 Torx
	Alta Femoral	P12	T25 Torx
	Solid (Unreamed) Humeral	P3	2.5mm Hex
	T1 Nail	P14	
Synthes	Solid (Unreamed) Tibial	P5	2.5mm Hex
	Solid (Unreamed) Femoral, Recon and Supracondylar	P10 / P15	2.5mm Hex
	Universal Tibial and Femoral	C1 / C2 / C3 C4 / C5 / C6	3.5mm Hex
	Cannulated Femoral, Recon and Supracondylar	P10 / P15	3.5mm Hex
	Flexible Humeral	P2	2.5mm Hex
	Cannulated Tibial	P10 / P15	3.5mm Hex
	Expert Femoral	P15	T25 Torx/T40 Torx
	Distal Femoral	P15	3.5mm Hex / Screw Remover (Spiral Blade)
	Proximal Femoral (PFN)	P15	Screw Remover (PFN)
	M/DN All	P13	3.5mm Hex
Zimmer	ZMS Tibial and Humeral	P8	5.0mm Hex
	ZMS Femoral	P18	5.0mm Hex
	Hansen-Street, Harris, Tibia, Schneider	P8	2.5mm Hex
	Neff Nail	H2	N/A
	Zickel	P12	5/32" Hex / 3/16" Hex
Unknown	Pugh Hip Screw	P5	
	Vectis (Gamma Type)	P17	
	Marchetti Femoral	P21	
	Frankfurt	P25	
	Frankfurt 12mm	P16	
	ISO Kuntschner Slot	H1 / H2	
	Biomanti SRL Clos Nail	P10	
	Ultimax Tibial and Femoral	P8	
	Fixano DSS	P20	
	Brooker-Wills Femoral		4.5mm Hex
	Brooker-Wills Tibial		3.5mm Hex
	Pathfinder		4.5mm Hex
	Precise		4.5mm Hex
	Vecsei Screw with Gross/Kempf Nails		4.0mm Hex Socket / 8.0mm Hex Socket

CES-INE-BLT Coremus Extractor System Container 1

Container 1 Tray 1	
CES-T-01	Coremus Extractor System - Tray For Bolts
CES-B-P01	Coremus Extractor System - Bolt P1 - No.10 x 32 UNF
CES-B-P02	Coremus Extractor System - Bolt P2 - M5 x 0.8
CES-B-P03	Coremus Extractor System - Bolt P3 - M5.5 x 0.9
CES-B-P04	Coremus Extractor System - Bolt P4 - M6 x 0.75
CES-B-P05	Coremus Extractor System - Bolt P5 - M6 x 1.0
CES-B-P06	Coremus Extractor System - Bolt P6 - M6 x 1.25
CES-B-P07	Coremus Extractor System - Bolt P7 - 1/4" x 28 UNF
CES-B-P08	Coremus Extractor System - Bolt P8 - 1/4" x 20 UNC
CES-B-P09	Coremus Extractor System - Bolt P9 - M7 x 0.75
CES-B-P10	Coremus Extractor System - Bolt P10 - M7 x 1.0
CES-B-P11	Coremus Extractor System - Bolt P11 - M7.5 x 1.0
CES-B-P12	Coremus Extractor System - Bolt P12 - 5/16" x 24 UNF
CES-B-P13	Coremus Extractor System - Bolt P13 - 5/16" x 18 UNC
CES-B-P14	Coremus Extractor System - Bolt P14 - M8 x 1.0
CES-B-P15	Coremus Extractor System - Bolt P15 - M8 x 1.25
CES-B-P16	Coremus Extractor System - Bolt P16 - M9 x 1.0
CES-B-P17	Coremus Extractor System - Bolt P17 - 3/8" x 24 UNF
CES-B-P18	Coremus Extractor System - Bolt P18 - 3/8" x 16 UNC
CES-B-P19	Coremus Extractor System - Bolt P19 - M10 x 1.0
CES-B-P20	Coremus Extractor System - Bolt P20 - M10 x 1.25
CES-B-P21	Coremus Extractor System - Bolt P21 - M10 x 1.5
CES-B-P22	Coremus Extractor System - Bolt P22 - M11 x 1.0
CES-B-P23	Coremus Extractor System - Bolt P23 - 7/16" x 20 UNF
CES-B-P24	Coremus Extractor System - Bolt P24 - M12 x 1.0
CES-B-P25	Coremus Extractor System - Bolt P25 - M12 x 1.75
CES-B-P26	Coremus Extractor System - Bolt P26 - 9/16" x 18 UNF
CES-B-C1	Coremus Extractor System - Bolt C1 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 12 Dia Max
CES-B-C2	Coremus Extractor System - Bolt C2 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 12 Dia Max
CES-B-C3	Coremus Extractor System - Bolt C3 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 15 Dia Max
CES-B-C4	Coremus Extractor System - Bolt C4 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 15 Dia Max
CES-B-C5	Coremus Extractor System - Bolt C5 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 18 Dia Max
CES-B-C6	Coremus Extractor System - Bolt C6 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 18 Dia Max
CES-B-H1	Coremus Extractor System - Bolt H1 - Kuntschner Hook - Small
CES-B-H2	Coremus Extractor System - Bolt H2 - Kuntschner Hook - Large
Container 1 Tray 2	
CES-T-02	Coremus Extractor System - Tray For Sliding Hammer
CES-SH-01	Coremus Extractor System - Sliding Hammer - Shaft
CES-SH-02	Coremus Extractor System - Sliding Hammer - Weight
CES-SH-03	Coremus Extractor System - Sliding Hammer - Handle
CES-SH-04	Coremus Extractor System - Sliding Hammer - Extension
CES-SH-05	Coremus Extractor System - Sliding Hammer - Spanner
CES-SH-05	Coremus Extractor System - Sliding Hammer - Spanner

CES-INE-DRV Coremus Extractor System Container 2

Container 2 Tray 1	
CES-T-03	Coremus Extractor System - Tray For Driver Shafts
CES-DS-01	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Flat Tip - 5.0mm
CES-DS-02	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Flat Tip - 8.0mm
CES-DS-03	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Cruciform Tip - 5.0mm
CES-DS-04	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Philips - No.2
CES-DS-05	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 2.5mm
CES-DS-06	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 3.0mm
CES-DS-07	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 3.5mm
CES-DS-08	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 4.0mm
CES-DS-09	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 4.5mm
CES-DS-10	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 5.0mm
CES-DS-11	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 6.0mm
CES-DS-12	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 8.0mm
CES-DS-13	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 5/32"
CES-DS-14	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 3/16"
CES-DS-15	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex Socket - 4.0mm
CES-DS-16	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex Socket - 6.0mm
CES-DS-17	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex Socket - 8.0mm
CES-DS-18	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Torx - T20
CES-DS-19	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Torx - T25
CES-DS-20	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Torx - T30
CES-DS-21	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Torx - T40
CES-DS-22	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Hex - 2.5mm Long Thin 3.0mm Shaft
CES-DS-23	Coremus Extractor System - Driver Shaft With Coremus QC Fitting - Torx - T15
Container 2 Tray 2	
CES-T-04	Coremus Extractor System - Tray For Driver Handles
CES-CD-01	Coremus Extractor System - Coring Device - For 3.2mm Screws
CES-CD-02	Coremus Extractor System - Coring Device - For 4.5mm Screws
CES-CD-03	Coremus Extractor System - Coring Device - For 6.5mm Screws
CES-SR-01	Coremus Extractor System - Screw Remover - For Synthes PFN Femoral Neck Screw
CES-SR-02	Coremus Extractor System - Screw Remover - For Synthes UFN & CTN Spiral Blade
CES-SR-03	Coremus Extractor System - Screw Remover - For Stryker / Howmedica Gamma & Gamma3 Lag Screw
CES-SR-04	Coremus Extractor System - Screw Remover - For DePuy ATN Lag Screw
CES-SR-05	Coremus Extractor System - Screw Remover - For Synthes PFNA Blade
CES-SR-06	Coremus Extractor System - Screw Remover - For Biomet PTN Lag Screw
CES-I-01	Coremus Extractor System - Bone Pick
CES-I-02	Coremus Extractor System - Parallel Action Pliers
CES-I-03	Coremus Extractor System - Screwdriver Handle - Straight
CES-I-04	Coremus Extractor System - Screwdriver Handle - Offset T
CES-I-05	Coremus Extractor System - Hex Driver For Screw Removers - Offset T Handle

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