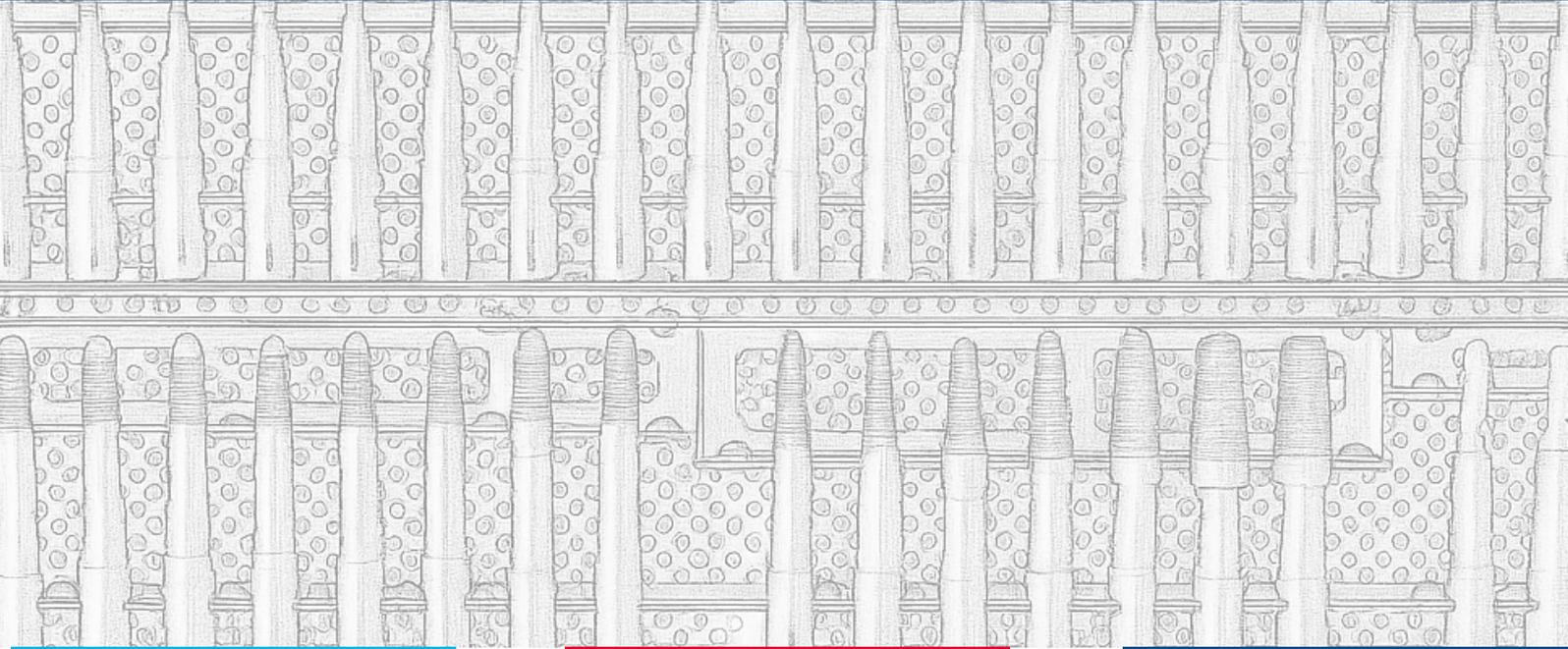


# The Coremus™ IM Nail Extractor System

Guidance for use



# COREMUS IM NAIL EXTRACTOR SYSTEM



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# BEFORE AND AFTER USE

## Instrument Care Checklist

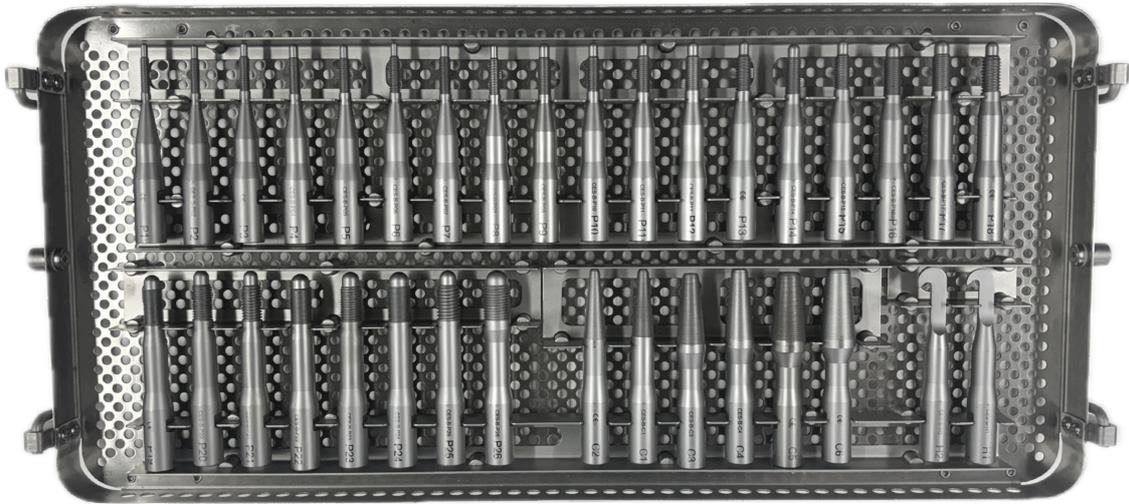
**Before and after each use ensure that:**

-  All instruments are examined for damage
-  All working parts function correctly
-  Parts missing or unfit for purpose to be replaced

### **Cleaning:**

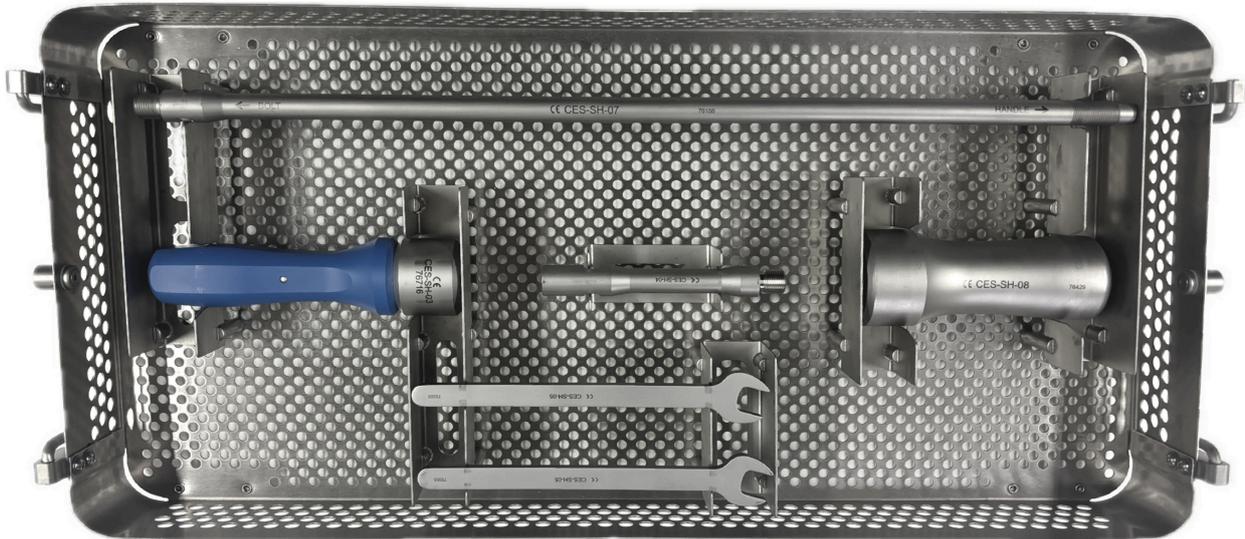
-  Clean all internal and external threaded parts. Agitate with a soft brush if necessary.
-  Check that all parts are free of bone debris.
-  Do not use wool or abrasive materials. Contact Echo Orthopaedics for full reprocessing instructions.

# SET CONTENTS



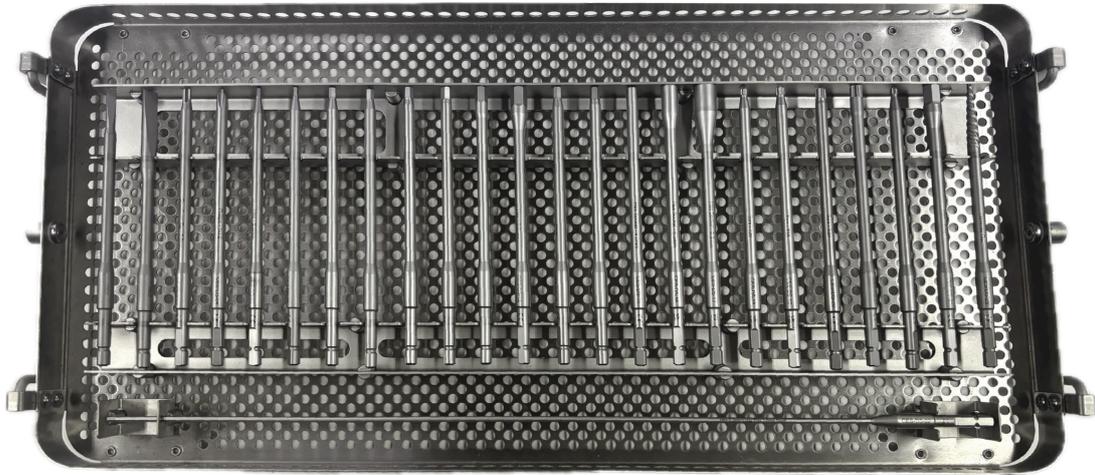
Description	Code	QTY
Bolt P1 - No.10 x 32 UNF	CES-B-P01	1
Bolt P2 - M5 x 0.8	CES-B-P02	1
Bolt P3 - M5.5 x 0.9	CES-B-P03	1
Bolt P4 - M6 x 0.75	CES-B-P04	1
Bolt P5 - M6 x 1.0	CES-B-P05	1
Bolt P6 - M6 x 1.25	CES-B-P06	1
Bolt P7 - 1/4" x 28 UNF	CES-B-P07	1
Bolt P8 - 1/4" x 20 UNC	CES-B-P08	1
Bolt P9 - M7 x 0.75	CES-B-P09	1
Bolt P10 - M7 x 1.0	CES-B-P10	1
Bolt P11 - M7.5 x 1.0	CES-B-P11	1
Bolt P12 - 5/16" x 24 UNF	CES-B-P12	1
Bolt P13 - 5/16" x 18 UNC	CES-B-P13	1
Bolt P14 - M8 x 1.0	CES-B-P14	1
Bolt P15 - M8 x 1.25	CES-B-P15	1
Bolt P16 - M9 x 1.0	CES-B-P16	1
Bolt P17 - 3/8" x 24 UNF	CES-B-P17	1
Bolt P18 - 3/8" x 16 UNC	CES-B-P18	1
Bolt P19 - M10 x 1.0	CES-B-P19	1
Bolt P20 - M10 x 1.25	CES-B-P20	1
Bolt P21 - M10 x 1.5	CES-B-P21	1
Bolt P22 - M11 x 1.0	CES-B-P22	1
Bolt P23 - 7/16" x 20 UNF	CES-B-P23	1
Bolt P24 - M12 x 1.0	CES-B-P24	1
Bolt P25 - M12 x 1.75	CES-B-P25	1
Bolt P26 - 9/16" x 18 UNF	CES-B-P26	1
Bolt C1 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 12 Dia Max	CES-B-C1	1
Bolt C2 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 12 Dia Max	CES-B-C2	1
Bolt C3 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 15 Dia Max	CES-B-C3	1
Bolt C4 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 15 Dia Max	CES-B-C4	1
Bolt C5 - 90 Deg V - 1.0mm Pitch - 10 Deg Inc - 18 Dia Max	CES-B-C5	1
Bolt C6 - 20 Deg U - 1.0mm Pitch - 10 Deg Inc - 18 Dia Max	CES-B-C6	1
Bolt H1 - Kuntschner Hook - Small	CES-B-H1	1
Bolt H2 - Kuntschner Hook - Large	CES-B-H2	1

# SET CONTENTS



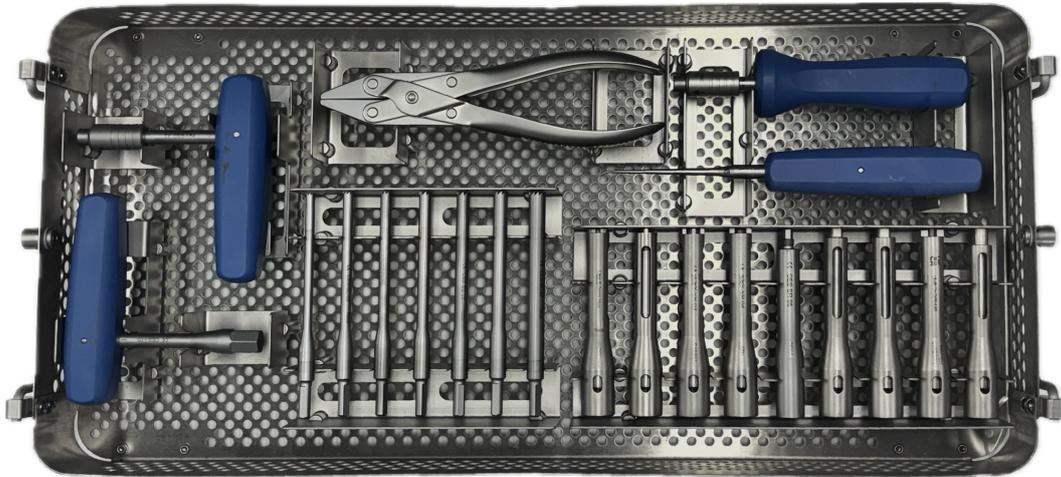
Description	Code	QTY
Sliding Hammer - Shaft	CES-SH-07	1
Sliding Hammer – Weight	CES-SH-08	1
Sliding Hammer - Handle	CES-SH-03	1
Sliding Hammer - Extension	CES-SH-04	1
Sliding Hammer - Spanner	CES-SH-05	2

# SET CONTENTS



Description	Code	QTY
Driver Shaft with Coremus QC Fitting - Flat Tip - 5.0mm	CES-DS-01	1
Driver Shaft with Coremus QC Fitting - Flat Tip - 8.0mm	CES-DS-02	1
Driver Shaft with Coremus QC Fitting - Cruciform Tip - 5.0mm	CES-DS-03	1
Driver Shaft with Coremus QC Fitting - Philips - No.2	CES-DS-04	1
Driver Shaft with Coremus QC Fitting - Hex - 2.5mm	CES-DS-05	1
Driver Shaft with Coremus QC Fitting - Hex - 3.0mm	CES-DS-06	1
Driver Shaft with Coremus QC Fitting - Hex - 3.5mm	CES-DS-07	1
Driver Shaft with Coremus QC Fitting - Hex - 4.0mm	CES-DS-08	1
Driver Shaft with Coremus QC Fitting - Hex - 4.5mm	CES-DS-09	1
Driver Shaft with Coremus QC Fitting - Hex - 5.0mm	CES-DS-10	1
Driver Shaft with Coremus QC Fitting - Hex - 6.0mm	CES-DS-11	1
Driver Shaft with Coremus QC Fitting - Hex - 8.0mm	CES-DS-12	1
Driver Shaft with Coremus QC Fitting - Hex - 5/32"	CES-DS-13	1
Driver Shaft with Coremus QC Fitting - Hex - 3/16"	CES-DS-14	1
Driver Shaft with Coremus QC Fitting - Hex Socket - 4.0mm	CES-DS-15	1
Driver Shaft with Coremus QC Fitting - Hex Socket - 6.0mm	CES-DS-16	1
Driver Shaft with Coremus QC Fitting - Hex Socket - 8.0mm	CES-DS-17	1
Driver Shaft with Coremus QC Fitting - torx - T20	CES-DS-18	1
Driver Shaft with Coremus QC Fitting - torx - T25	CES-DS-19	1
Driver Shaft with Coremus QC Fitting - torx - T30	CES-DS-20	1
Driver Shaft with Coremus QC Fitting - torx - T40	CES-DS-21	1
Driver Shaft with Coremus QC Fitting - Hex - 2.5mm Long Thin 3.0mm Shaft	CES-DS-22	1
Driver Shaft with Coremus QC Fitting - Torx- T15	CES-DS-23	1
Driver Shaft with Coremus QC Fitting - Hex - 5/16"	CES-DS-24	1
Reverse Out Driver for Cannulated Screws - Coremus QC fitting	CES-DS-25	1

# SET CONTENTS



Description	Code	QTY
Tray for Driver Handles	CES-T-04	1
Screw Remover - For Synthes PFN Femoral Neck Screw	CES-SR-01	1
Screw Remover - For Synthes UFN & CTN Spiral Blade	CES-SR-02	1
Screw Remover - For Stryker / Howmedica Gamma & Gamma3 Lag Screw	CES-SR-03	1
Screw Remover- For DePuy ATN Lag Screw	CES-SR-04	1
Synthes PFNA Blade Extractor	CES-SR-05	1
Screw Remover for Biomet PTN Lag	CES-SR-06	1
Screw remover for Biomet AFFIXUS Lag Screw	CES-SR-07	1
Screw remover for Smith & Nephew Meta Tan Lag Screw	CES-SR-08	1
Screw remover for Synthes TNFA Lag Screw	CES-SR-09	1
Coring Device - For 3.0mm Screws	CES-SC-01	1
Coring Device - For 3.5mm Screws	CES-SC-02	1
Coring Device - For 4.0mm Screws	CES-SC-03	1
Coring Device - For 4.5mm Screws	CES-SC-04	1
Coring Device - For 5.0mm Screws	CES-SC-05	1
Coring Device - For 5.5mm Screws	CES-SC-06	1
Coring Device - For 6.0mm Screws	CES-SC-07	1
Bone Pick	CES-I-01	1
Parallel Action Pliers	CES-I-02	1
Screwdriver Handle - Straight	CES-I-03	1
Screwdriver Handle - Offset T	CES-I-04	1
Hex Driver for Screw Removers - Offset T Handle	CES-I-05	1

# REMOVING UNIDENTIFIED NAILS

## THE 3 / 4 STEP PROCESS TO REMOVE AN IM NAIL

*If nails can be Identified refer to the IM nail reference guide on pages 11 - 14 to select the specific drivers and bolts required.*

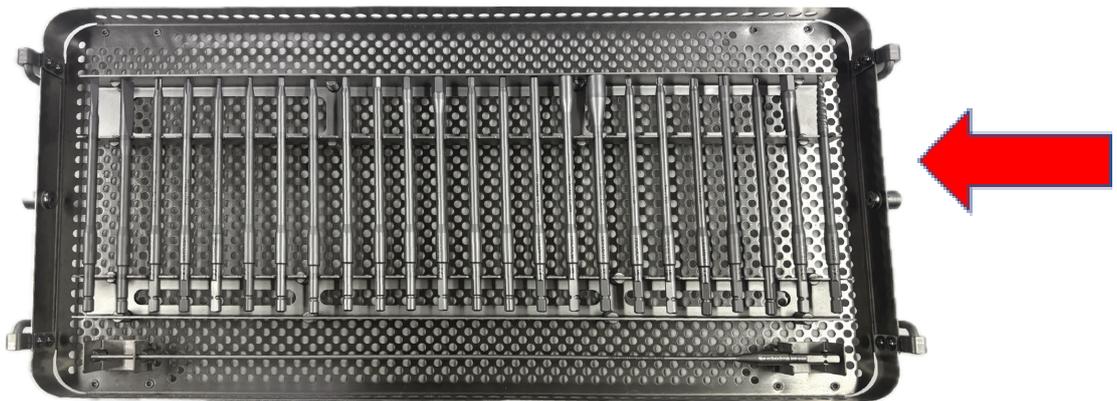
If unidentified follow the steps outlined below

### STEP 1 - End Cap Removal

Start with 3.5mm Hex or T40 (Stardrive)

If the driver does not fit move in increments above and below eg. 3.5mm HEX is too large try 3.0mm Hex or 4.0mm Hex if too small.

These can be found on this tray



Take the Hex/Torx Driver and put them on the blue handle from this tray



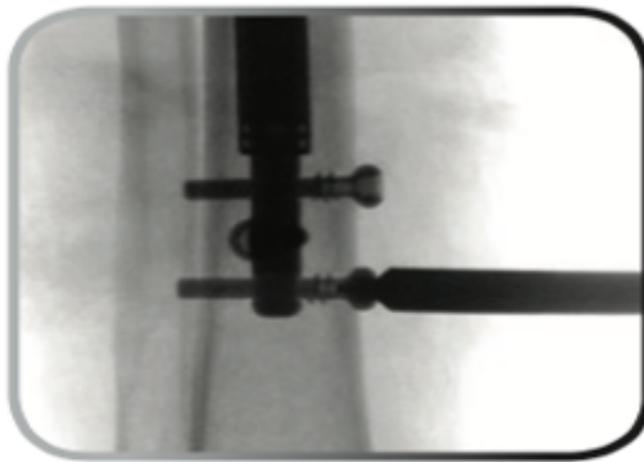
# REMOVING UNIDENTIFIED NAILS

## STEP 2 - Screw Removal

Once the end cap has been removed, repeat the same process for the distal and proximal screws.

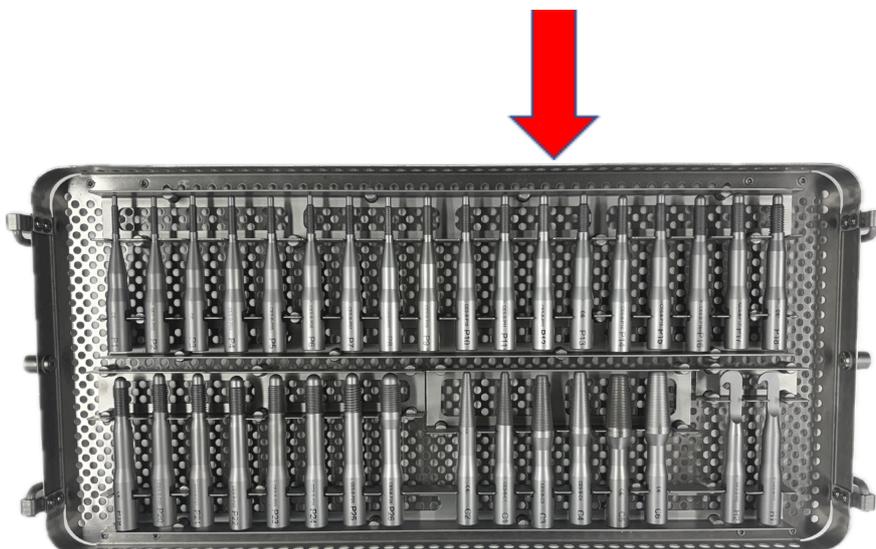
Start with Hex 3.5mm or T25 and remove the screws that are holding the nail.

*\*It may be worth leaving 1 screw in place until after attaching the removal bolt to the nail (step 3) to ensure the nail does not rotate when trying to thread the removal bolt\**



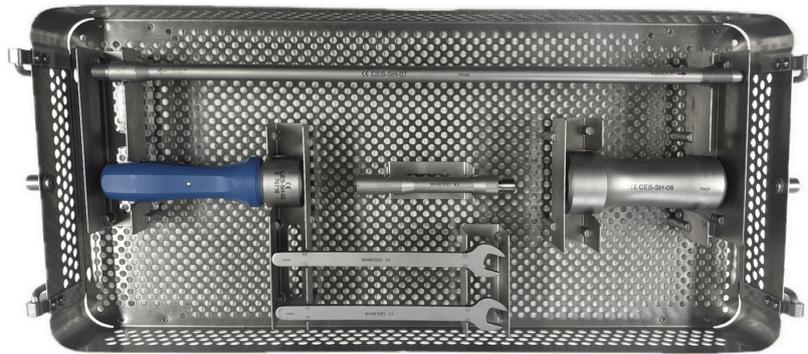
## STEP 3 - Nail Removal

Pick out the P15 bolt from this tray. Again if P15 is too large move down to P14 or too small then move up to P16 and onwards (long threads and will come to a stop if engaged correctly).



# REMOVING UNIDENTIFIED NAILS

Screw the selected bolt into the end of the nail and then screw fit the sliding weight and rod to the other end of the bolt. The slap hammer/sliding rod parts are from this tray. A spanner can help to tighten.



All parts are laser marked for easy identification

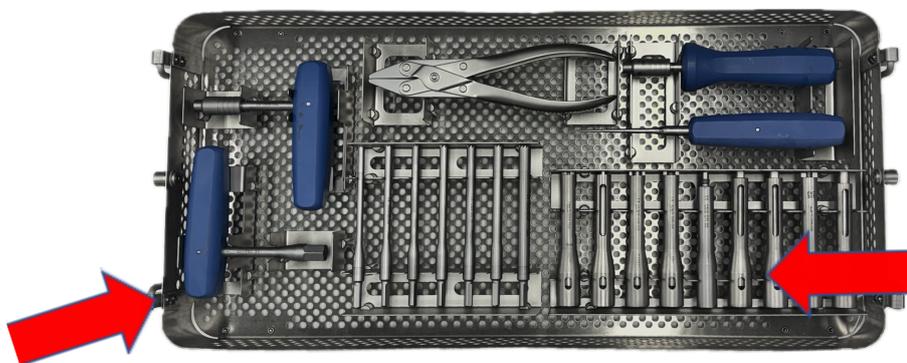
## REMOVING PROXIMAL RECON LAG SCREWS (GAMMA TYPE SCREWS)

Remove the end cap and set screw and then move onto removing the lag screw -

Use an appropriate dedicated lag screw remover and attach this to the lag screw.

Connect the remover with the integrated internal thread and tighten with a 5mm Hex.

Then use the T handle to turn anti clockwise and remove the lag screw.



If there is no compatible dedicated lag screw remover then use the cannulated easy out CES-DS-25

# IM Nail Reference Guide - Bolts and Drivers

MANUFACTURER	NAIL	BOLT No.	DRIVERS	Additional info
ACUMED	POLARIS HUMERAL	P8	2.5/3.5MM HEX	
AESULAP	TARGON FEMORAL	P21		
DOWNNS	TARGON TIBIAL	P15		
B BRAUN	HUCKSTEP FEM & TIB	P5	3.5MM HEX	
AO ORIGINAL	UNIVERSAL TAPERED	C2 / C4 / C6		
	V THREAD TAPERED	C1 / C3 / C5		
AUSTOFIX	ALL NAILS	P5		
BIOMET (ZIMMERBIOMET)	ANKLE ARTRODESIS, UNIFLEX TIBIAL, HUMERAL AND RETROGRADE FEMORAL PHOENIX ANKLE	P12	3.5.5.0MM HEX T25 (PHOENIX SET SCREW)	
	KNEE ARTHRODESIS, HOLLAND, FEMORAL, UNIFLEX FEMORAL, UNIFLEX RECON	P17	5.0MM HEX	
	PEDIATRIC NAIL	P7	5.0MM HEX	
	PERI TROCHANTERIC NAIL	P16	3.5/5.0MM HEX 6MM SQUARE	
	ST PRO	P12	3.5 HEX	
CITEFFE	FEMORAL & TIBIAL	P15		
CORIN	HALDER HUMERAL	P5		
CREMASCOLI	HEXAGONE TIBIAL	P14	2.5/3.5/5.0MM HEX	
	FEMORAL & TIBIAL	P22	3.5/5.0MM HEX	
DEPUY ACE (ZIMMERBIOMET)	AIM HUMERAL / TIBIAL	P8	2.5MM/ 3.5MM 5.0MM HEX	
	AIM FEMORAL, SUPRACONDYLAR AND A.R.T FEMORAL	P13		
	ATN TROCHANTERIC	CES - SR - 04		
	CHANDLER TIBIAL	P7	N/A	
	VERSANAIL ANKLE FUSION - TTC	P13	3.5MM HEX	
	VERSANAIL TIBIAL & FEMORAL	P13	3.5MM/ 4.5MM/ 5.0MM HEX	
	AFFIXUS	P19	5.0MM HEX / 3.5MM HEX / LAG BOLT EXTRACTOR	REMOVE SET SCREW
ENCORE	TRUE FIX DISTAL FEMORAL, PROXIMAL HUMERAL AND ANKLE FUSION	P8	3.5MM HEX	
	FEMORAL AND TIBIAL	P1		
MEDIN	SA Femoral Nail	P11	4.5MM HEX	Flat Blade Driver for LAG
FRY	HEXAGONE TIBIAL	P11		
ORTHOFIX	CENTRONAIL	P5		
	VERONAIL	P9		
	IM HIP SCREW	P26		

# IM Nail Reference Guide - Bolts and Drivers

MANUFACTURER	NAIL	BOLT No.	DRIVERS	Additional info
RICHARDS	TIBIAL	P11		
	RECON	P23		
	FEMORAL	P17		
SMITH AND NEPHEW	RUSSEL-TAYLOR HUMERAL	P7	3.5MM HEX	
	RUSSEL-TAYLOR FEMORAL AND RECON	P17	3/16"HEX / 5/32" HEX	
	RUSSEL TAYLOR TIBIAL	P12		
	RUSSEL TAYLOR DELTA TIBIAL	P12		
	RUSSEL TAYLOR DELTA FEMORAL AND RECON	P17	3.5MM HEX / 5/32"HEX	
	TRIGEN (ALL)	P12	3/16" HEX / 6.0MM HEX	
	ENDER NAIL	H1	N/A	
	INTRAPLANT GLIDING NAIL (FOR MAIN FEMORAL NAIL)	P24		
	INTRAPLANT GLIDING NAIL (FOR THE GAMMA ARM)	P9		
	TRI GEN HINDFOOT	P12	3/16" HEX (4.7MM EQUIVALENT)	
	TRIGEN INTERTAN (META TAN)	P12	3/16" HEX	CES-SR-08 Lag bolt extractor
STRYKER	T2 HUMERAL	P4	2.5MM HEX	
(PREVIOUSLY	GAMMA (ORIGINAL)	P25 / P15	4.0MM HEX / 5.0MM HEX	
OSTEONICS)	GAMMA 3	P15	5/32" HEX / 8.0MM HEX / GAMMA SCREW REMOVER	REMOVE SET SCREW
	GAMMA 4	P22	5/32" HEX / 8.0MM HEX / EASY OUT FOR LAG SCREW	REMOVE SET SCREW
	HUMERAL	P5	3.5MM/2.5MM LONG THIN SHAFT	
	GROSS/KEMPF FEMORAL & TIBIAL	P21	3.5MM / 5.0MM HEX	
	IC NAIL FEMORAL, TIBIAL, AND T-2 TIBIAL, FEMORAL ANTEGRADE/RETROGRADE	P14	3.5MM HEX / 6.0MM HEX / 4.0MM HEX	
	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	
	TI NAIL	P14		

# IM Nail Reference Guide - Bolts and Drivers

MANUFACTURER	NAIL	BOLT No.	DRIVERS	Additional info
SYNTHESES	SOLID (UNREAMED) TIBIAL	P5	2.5MM HEX	
(DEPUYSYNTHESES)	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/T40 TORX	
	EXPERT TIBIAL	P15	T25/T40 TORX	
	DISTAL FEMORAL	P15	3.5MM HEX / SCREW REMOVAL SPIRAL BLADE	
	PFN/A (PROXIMAL FEMORAL NAIL)	P15	SCREW REMOVER (PFNA)	T25/Hex 3.5/ T40
	M/DN/ALL	P13	3.5MM HEX	
	TFNA	P22	T25/T40 TORX	P3 for Helical Blade CES-SR-09 for Lag Screw
	Titanium Tibial Nail (UTC)	P8	3.5MM HEX	ID with 2 small prox holes
	UTC Tibial	P4	triangular shape	
	SPIRAL BLADE	SPIRAL BLADE OR P10		P10 ON SLAP ATTACHMENT
ZIMMER	ZMS TIBIAL & HUMERAL	P8	5.0MM HEX	
(NOW ZIMMER BIOMET)	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	
	Natural Tibia & Retrograde	P12 - P13	3.5mm HEX -Screws	5.0MM HEX - END CAP
	Natural Nail - (RECON Femoral)	P15	3.5mm HEX -Screws - LAG Screw (in development - Use easy out if ZB kit not available)	REMOVE SET SCREW (3.5mm HEX) COMPLETELY BEFORE P15 BOLT
Orthopediatrics	Pedinail	P8	3.5mm HEX -Screws	
	PNP Femur - Child	P7	3.5mm HEX -Screws	
	PNP - Nail - Adolescent	P12	3.5mm HEX -Screws	
ORTHOSOLUTIONS	OXBRIDGE HINDFOOT	P5	HEX	
Integra (now S+N)	Panta	P2 (Gen 1) & P15 (Gen 2)		

# IM Nail Reference Guide - Bolts and Drivers

MANUFACTURER	NAIL	BOLT No.	DRIVERS	Additional info
NUVASIVE	PRECISE	P9	3.5MM HEX	Smooth Screws
HERACLES	HERACLES PFN	P22	T40 END CAP / T25 DISTAL	T40 SET SCREW
UNKNOWN	PUGH HIP SCREW	P5		
	MARCHETTI FEMORAL	P21		
	FRANKFURT	P25		
	FRANKFURT 12MM	P16		
	ISO KUNTSCNER SLOT	H1/H2		
	BIOMANTI SRL CLOS NAIL	P10		
	ULTIMAX TIBIAL & FEMORAL	P8		
	FIXANO DSS	P20		
	BROKER-WILLIS FEMORAL		4.5MM HEX	
	BROKER-WILLIS TIBIAL		3.5MM HEX	
	PATHFINDER		4.5MM HEX	
	VECSEI SCREW WITH GROSS/KEMPF NAILS		4.0MM / 8.0MM HEX	
	TRAUMED Germany (Humeral)	P3		
	Bioimpianti (Tibia)	P18	3.5MM HEX	
	Guichet Nail	P5	3.5MM HEX	
SIGN Fracture Care	SIGN IM (Gambia)	P8	3.5MM HEX	
<b>LAG SCREW REMOVERS</b>	Screw Remover - For Synthes UFN & CTN Spiral Blade	CES-SR-02		
	Screw Remover - For Stryker / Howmedica Gamma & Gamma3 Lag Screw	CES-SR-03		
	Screw Remover- For DePuy ATN Lag Screw	CES-SR-04		
	Synthes PFNA Blade Extractor	CES-SR-05		
	Screw Remover for Biomet PTN Lag	CES-SR-06		
	Screw remover for Biomet AFFIXUS lag screw	CES-SR-07		
	Screw remover for S & N INTERTAN lag screw	CES-SR-08		
	Screw remover for TFNA Lag Screw	CES-SR-09		
	TFNA - HELICAL Blade P3 with Slap Hammer	CES-B-P3		
	Unidentified lag screws	EASY OUT CANNULATED SCREW DRIVER - CES-DS-25		
<b>OTHER ITEMS</b>	Corail Stem	P5 bolt		
	Ring Cup	P15 bolt		

Notes...

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Please note these "Guidelines for Use"

refer to general situations and therefore individual  
surgeon clinical judgement is required.



The medical products to which Echo Orthopaedics  
Limited assign the UK CA mark meet the provisions of  
the Medical Devices Regulations 2002 (SI 618) as  
subsequently amended by the EU Exit Regulations of  
2019 (SI 791) and 2002 (SI 1478).

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