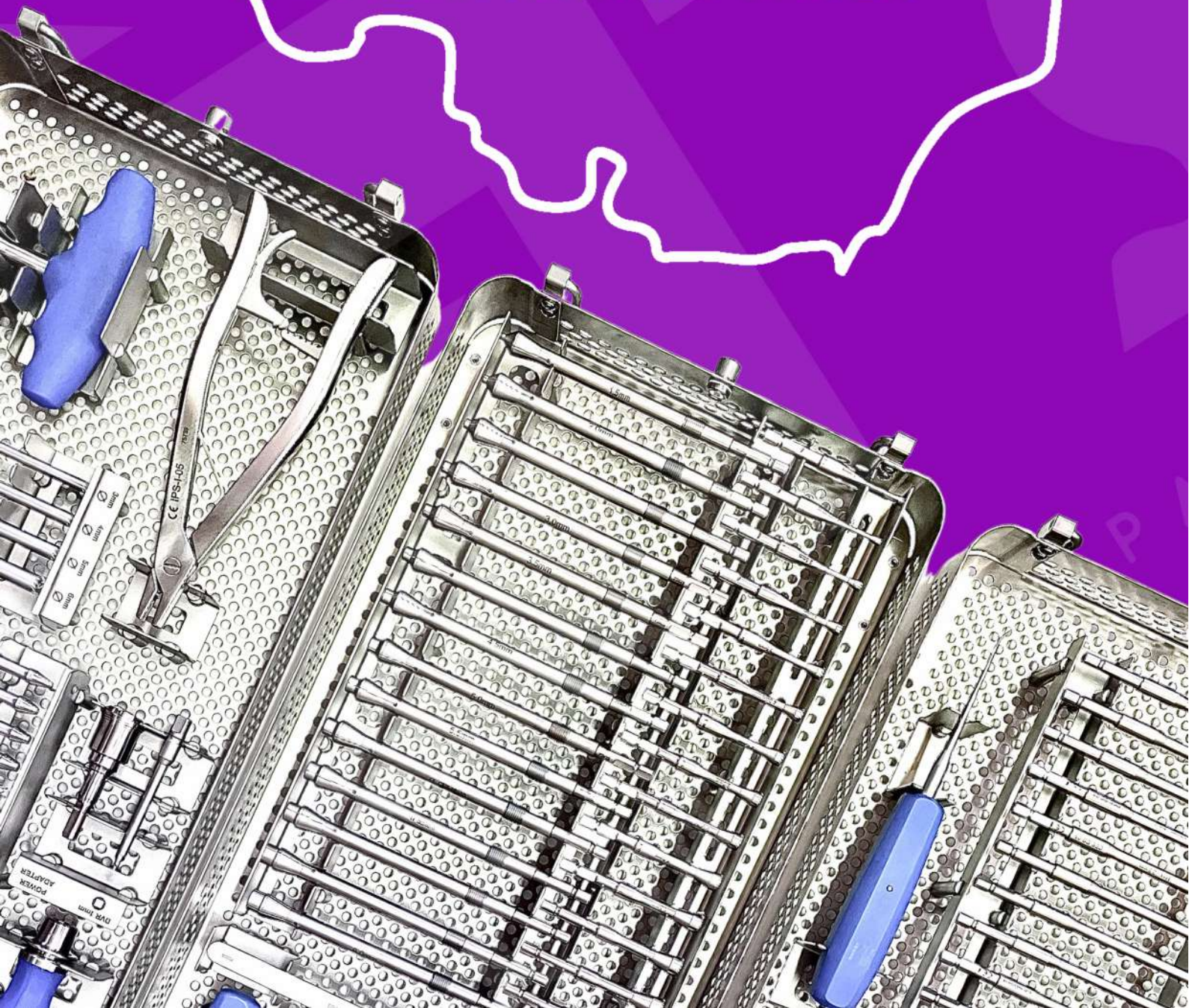
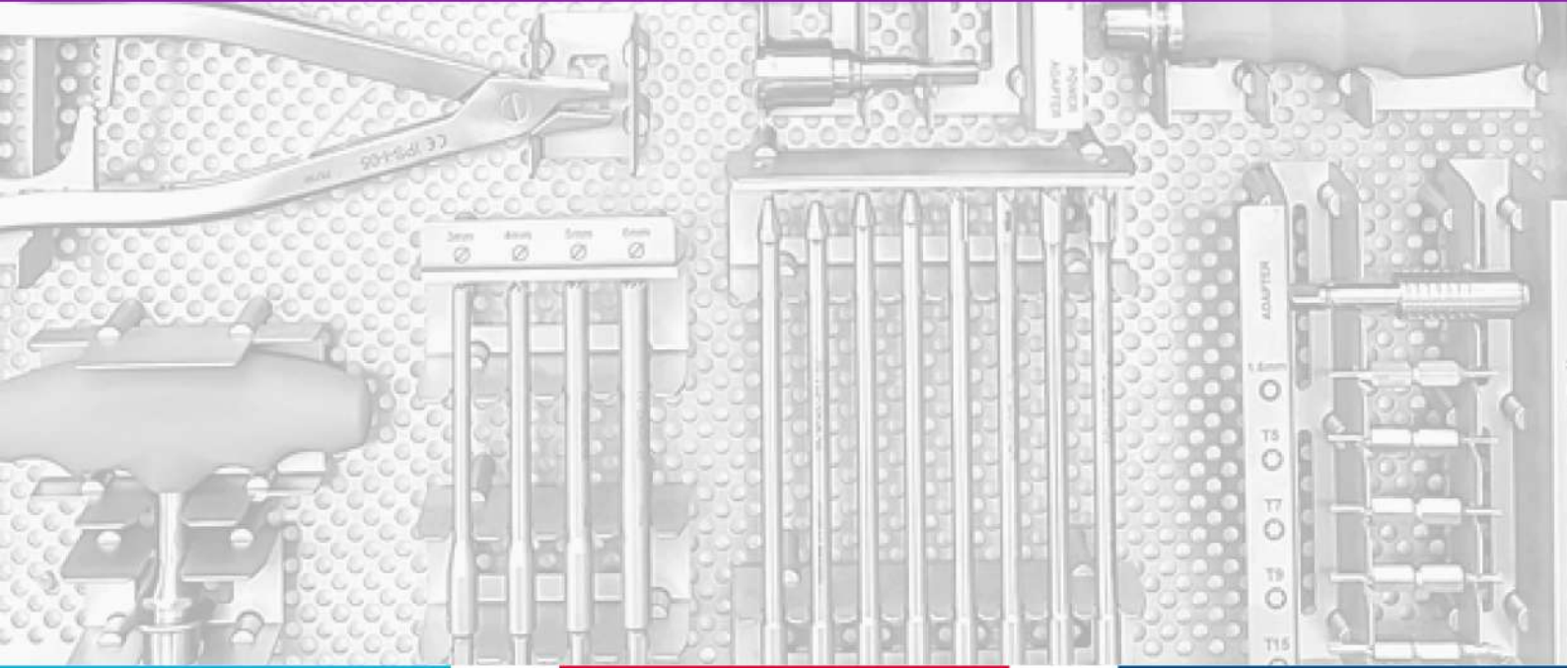




Heritage INSTRUMENTS®  
**IPSWICH**  
SCREW REMOVAL SYSTEM



# Ipswich® Screw Extraction System



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# Before and after use

## Before and after each use ensure that:

- All Tungsten Carbide drill bits, extractor shafts, extractor shaft tubes, relief cutters, screwdriver handles, power adaptor, fluted nut and spanner are examined for damage
- The fluted nut runs freely on all extractor shafts
- The extractor shaft tubes slide freely over all extractor shafts
- The spanner fits onto the fluted nut
- The quick release mechanism on the screwdriver handles engage and lock onto all the extractor shafts and relief cutters
- The quick release mechanism on the power adaptor engages and locks onto all the extractor shafts and relief cutters

### **Cleaning: Before and after each use:**

- Clean all external and external threaded parts agitate with a soft brush if necessary.
- Check that all drill bits are clean and free of bone debris.
- Check that all quick release mechanisms are clean and free from bone debris.
- Check that the internal and external surfaces, including extraction teeth, of the extractor shafts and relief cutters are clean and free of bone debris, agitate with a soft brush if necessary.

### **Do not use wire wool or abrasive materials**

### **Important information before use.**

- Tungsten carbide drill bits are very brittle and easily broken if used incorrectly
- Ensure that the drill bit maintains alignment with the long axis of the screw to be drilled
- The drill must be rotating prior to entering the damaged hex hole in the screw head and continue until the head rings off, failure to do so could result in snagging and breaking the drill bit
- Maintain a cool environment by irrigation
- Make preparation for the protection of surrounding tissue from metal debris
- Ensure that all metal particles are removed after drilling



# Removal of damaged head screws

- 1 Identify the head diameter of the screw to be removed.



- 2 Select the corresponding Screw Extractor Shaft (CES-SE-01/14).



- 3 Slide the Screw Extractor Compression Tube (CES-SE-12) over the Screw Extractor Shaft.



- 4 Followed by the Fluted Nut (CES-SE-13). Ensure that the Fluted Nut is assembled so that the Screw Extractor Compression Tube sits in the recess of the Fluted Nut.



- 5 Attach the above assembly to the Straight or Offset "T" handle (CES-1-03/04).



- 6 Place the Screw Extractor Shaft (CES-SE-01/14) fully over the head of the exposed screw, in line with the direction of the screw.



- 7 Proceed to wind down the Fluted Nut (CES-SE-13) in a clockwise direction until a firm grip is achieved. This procedure should only require hand tightening but a Spanner (CES-SH-05) may also be used. PIC 9385
- 8 Proceed to unscrew the damaged screw in an anti-clockwise direction.

# Removal of screws with damaged head situated in a plate

- 1 Identify the head diameter of the screw to be removed.
- 2 Select the Solid Carbide Drill (CES-D-03/07) that corresponds to the core diameter of the screw shaft to be removed and connect to the Power Adaptor (CES-1-08).



- 3 Using a power drill, drill into the hex head of the screw to be removed until the head rings off.
- 4 Remove the remaining screws in the plate by the above method if necessary.
- 5 Remove the bone plate.



- 6 Once the bone plate is removed the screw thread stubs are exposed.



- 7 Select the corresponding Screw Extractor Shaft (CES-SE-01/14) and slide the Screw Extractor Compression Tube (CES-SE-12) over the Screw Extractor Shaft, followed by the Fluted Nut (CES-SE-13).



Ensure that the Fluted Nut (CES-SE-13) is assembled so that the Screw Extractor Compression Tube sits in the recess of the Fluted Nut.



- 8 Attach the above assembly to the Straight or Offset "T" handle (CES-1-03/04).



- 9 Place the Screw Extractor Shaft (CES-SE-01/14) fully over the threaded screw stub, in line with the direction of the screw, and proceed to wind down the Fluted Nut (CES-SE-13) in a clockwise direction until a firm grip is achieved. This procedure should only require hand tightening but a Spanner (CES-SH-05) may also be used.
- 10 Proceed to unscrew the threaded screw stub in an anti-clockwise direction.

# Removal of screws buried in bone

- 1 Identify the head diameter of the screw to be removed.
- 2 Select the corresponding Relief Cutter (CES-RC-01/14) and attach to the Straight or Offset "T" handle (CES-1-03/04) or alternatively to the Power Adaptor (CES-1-08).



- 3 Place the Relief Cutter (CES-RC-01/14) over the head of the buried screw in line with the direction of the screw, and proceed to core down through the bone over the head. It is important to rotate the Relief Cutter in a clockwise and anti-clockwise direction while applying a little pressure. Ensure that the teeth of the Relief Cutter are cleaned at regular intervals during this procedure or they will not cut and will create heat.

- 4 Once the Relief Cutter fails to cut any deeper it has reached its pre-determined depth.



- 5 Select the corresponding Screw Extractor Shaft (CES-SE-01/14) and slide the Screw Extractor Compression Tube (CES-SE-12) over the Screw Extractor Shaft.



- 6 Followed by the Fluted Nut (CES-SE-13). Ensure that the Fluted Nut is assembled so that the Screw Extractor Compression Tube sits in the recess of the Fluted Nut.



- 7 Attach the above assembly to the Straight or Offset "T" handle (CES-1-03/04).



- 8 Place the Screw Extractor Shaft (CES-SE-01/14) fully into the space created by the Relief Cutter around the screw head in line with the direction of the screw. PIC 9384
- 9 Proceed to wind down the Fluted Nut (CES-SE-13) in a clockwise direction until a firm grip is achieved. This procedure should only require hand tightening but a Spanner (CES-SH-05) may also be used.
- 10 Proceed to unscrew the damaged screw in an anti-clockwise direction.

# Removal of headless screws buried in bone

- 1 Identify the diameter of threaded screw stub to be removed.



- 2 Select the corresponding Relief Cutter (CES-RC-01/14) and attach to the Straight or Offset "T" handle (CES-1-03/04 or alternatively to the Power Adaptor (CES-1-08).



- 3 Place the Relief Cutter (CES-RC-01/14) over the threaded screw stub in line with the direction of the screw, and proceed to core down through the bone over threaded screw stub. It is important to rotate the Relief Cutter in a clockwise and anti-clockwise direction while applying a little pressure. Ensure that the teeth of the Relief Cutter are cleaned at regular intervals during this procedure or they will not cut and will create heat.

- 4 Once the Relief Cutter fails to cut any deeper it has reached its pre-determined depth.



- 5 Select the corresponding Screw Extractor Shaft (CES-SE-01/14) and slide the Screw Extractor Compression Tube (CES-SE-12) over the Screw Extractor Shaft, followed by the Fluted Nut (CES-SE-13).



Ensure that the Fluted Nut is assembled so that the Screw Extractor Compression Tube sits in the recess of the Fluted Nut.

- 6 Attach the above assembly to the Straight or Offset "T" handle (CES-1-03/04).



- 7 Place the Screw Extractor Shaft (CES-SE-01/14) fully into the space created by the Relief Cutter around the threaded screw stub in line with the direction of the screw.
- 8 Proceed to wind down the Fluted Nut (CES-SE-13) in a clockwise direction until a firm grip is achieved. This procedure should only require hand tightening but a Spanner (CES-SH-05) may also be used.
- 9 Proceed to unscrew the damaged screw in an anti-clockwise direction.

# Extraction reamers Easy outs, Trephines



Locate the stationary extraction reamer and turn in the direction of the screw axis to ream over the screw shaft remaining in the bone.

Apply slight pressure initially, turning to the left, counterclockwise.

As soon as the reamer grips the screw shaft, continue reaming with increased pressure until the conical left-handed thread is securely seated on the screw shaft.

When unscrewing the reamer do not relieve the pressure, but maintain the constant axial pressure and direction of rotation



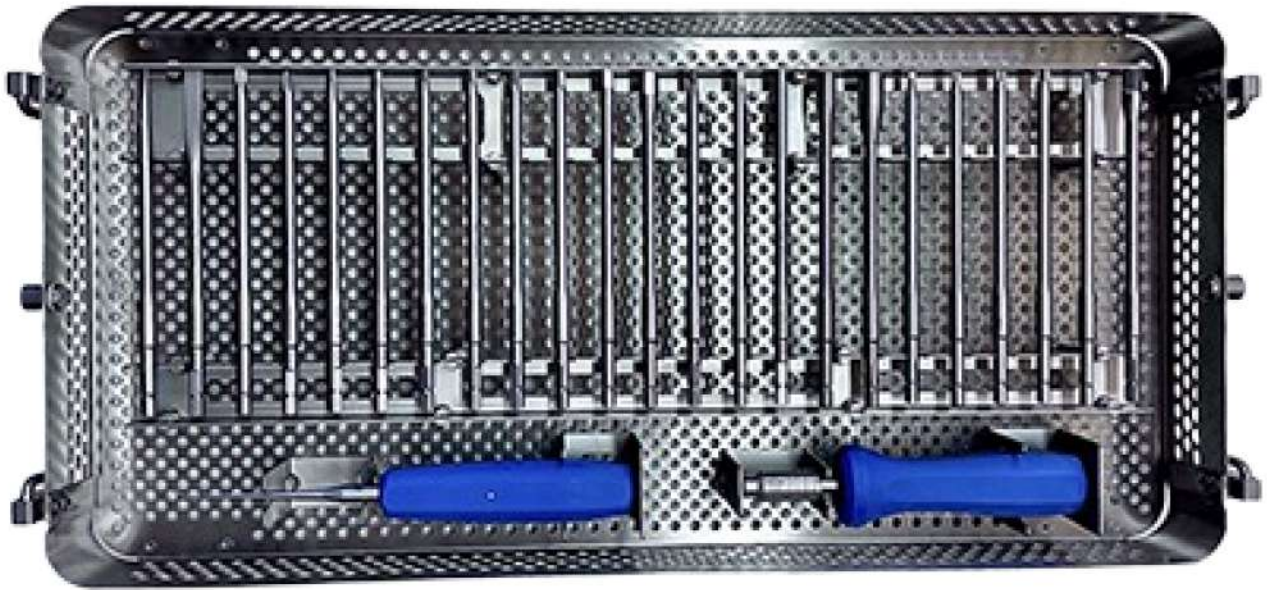
Start turning the extraction screw to the left, counterclockwise, in the same axis as the screw to be removed.

Continue turning, applying constant pressure, until the conical left-handed thread is securely seated in the damaged recess and until sufficient torque is applied to unscrew the screw.

Then unscrew the screw, turning to the left.

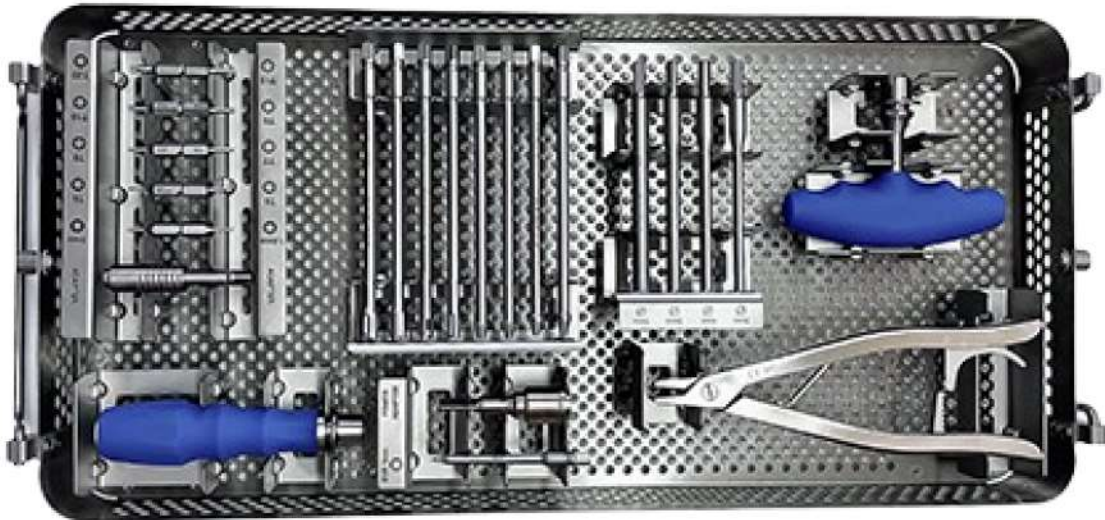


# Set contents



<b>Ipswich Screw Large Diameter Tray - CES-DRV-SYS2</b>		
<b>Description</b>	<b>Code</b>	<b>Qty</b>
Bone Pick	CES-I-01	1
Screwdriver Handle Straight	CES-I-03	1
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 - Torx- T15	CES-DS-23	1

# Set contents



<b>Ipswich Small Driver Tray - IPS-ADD-SYS</b>		
<b>Description</b>	<b>Code</b>	<b>QTY</b>
Screw Holding Forcep	IPS-I-05	1
Corer 3 mm	CES-SC-01	1
Corer 4 mm	CES-SC-03	1
Corer 5mm	CES-SC-05	1
Corer 6 mm	CES-SC-07	1
Driver Handle Small Straight	IPS-I-03	1
Driver Handle T	IPS-I-02	1
Adapter for Blue Driver Handle	ESR-IN7	1
Double Driver Bit 1.5 & 2mm HEX	ESR-HXHX1520	1
Double Driver Bit T05 & T06 TORX	ESR-TXTX0506	1
Double Driver Bit T07 & T08 TORX	ESR-TXTX0708	1
Double Driver Bit T09 & T10 TORX	ESR-TXTX0910	1
Double Driver Bit T15 & T20 TORQ	ESR-TXTX1520	1
Reverse Out Over Corer S3 (3.5 - 4.0 mm)	U-ESR-AS3	1
Reverse Out Over Corer S4 (4.5 - 5.5 mm)	U-ESR-AS4	1
Reverse Out Over Corer S5 (5.5 - 6.5 mm)	U-ESR-AS5	1
Reverse Out Over Corer S6 (6.0 - 7.5 mm)	U-ESR-AS6	1
Cone Out Device S3 (3.5 - 4.5 mm)	U-ESR-KS3	1
Cone Out Device S4 (4.5 - 5.5 mm)	U-ESR-KS4	1
Cone Out Device S5 (5.5 - 6.5 mm)	U-ESR-KS5	1
Cone Out Device S6 (6.0 - 7.5 mm)	U-ESR-KS6	1
1/4inch power adapter	ESR-IN6	1

# Set contents



Ipswich Damaged Screw Tray - CES-DSR-SYS2		
Description	Code	Qty
Relief Cutter with Coremus QC Fitting 1.5mm	CES-RC-01	1
Relief Cutter with Coremus QC Fitting 2.0mm	CES-RC-02	1
Relief Cutter with Coremus QC Fitting 2.5mm	CES-RC-03	1
Relief Cutter with Coremus QC Fitting 3.0mm	CES-RC-04	1
Relief Cutter with Coremus QC Fitting 3.5mm	CES-RC-05	1
Relief Cutter with Coremus QC Fitting 4.0mm	CES-RC-06	1
Relief Cutter with Coremus QC Fitting 4.5mm	CES-RC-07	1
Relief Cutter with Coremus QC Fitting 5.0mm	CES-RC-08	1
Relief Cutter with Coremus QC Fitting 5.5mm	CES-RC-09	1
Relief Cutter with Coremus QC Fitting 6.0mm	CES-RC-10	1
Relief Cutter with Coremus QC Fitting 6.5mm	CES-RC-11	1
Relief Cutter with Coremus QC Fitting 7.0mm	CES-RC-12	1
Relief Cutter with Coremus QC Fitting 7.5mm	CES-RC-13	1
Relief Cutter with Coremus QC Fitting 8.0mm	CES-RC-14	1
Screw Extractor Shaft with Coremus QC Fitting 1.5mm	CES-SE-01	1
Screw Extractor Shaft with Coremus QC Fitting 2.0mm	CES-SE-02	1
Screw Extractor Shaft with Coremus QC Fitting 2.5mm	CES-SE-03	1
Screw Extractor Shaft with Coremus QC Fitting 3.0mm	CES-SE-04	1
Screw Extractor Shaft with Coremus QC Fitting 3.5mm	CES-SE-05	1
Screw Extractor Shaft with Coremus QC Fitting 4.0mm	CES-SE-06	1
Screw Extractor Shaft with Coremus QC Fitting 4.5mm	CES-SE-07	1
Screw Extractor Shaft with Coremus QC Fitting 5.0mm	CES-SE-08	1
Screw Extractor Shaft with Coremus QC Fitting 5.5mm	CES-SE-09	1
Screw Extractor Shaft with Coremus QC Fitting 6.0mm	CES-SE-10	1
Screw Extractor Shaft with Coremus QC Fitting 6.5mm	CES-SE-11	1
Screw Extractor Shaft with Coremus QC Fitting 7.0mm	CES-SE-12	1
Screw Extractor Shaft with Coremus QC Fitting 7.5mm	CES-SE-13	1
Screw Extractor Shaft with Coremus QC Fitting 8.0mm	CES-SE-14	1
Screw Extractor - Tube	CES-SE-15	2
Screw Extractor – Fluted Nut	CES –SE-16	1
Drill – Solid Carbide – 2.5mm x 75mm	CES-D-03	1
Drill – Solid Carbide – 3.0mm x 75mm	CES-D-04	1
Drill – Solid Carbide – 3.5mm x 75mm	CES-D-05	1
Drill – Solid Carbide – 4.0mm x 75mm	CES-D-06	1
Drill – Solid Carbide – 4.5mm x 75mm	CES-D-07	1
Screwdriver Handle – Straight	CES-I-03	1
Screwdriver Handle – Offset T	CES-I-04	1
Power Adaptor – Coremus QC Fitting to Jacobs	CES-I-08	1
Spanner for Fluted Nut	CES-SH-05	1

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Please note these "Guidelines for Use" refer to general situations and therefore individual surgeon judgement is required.

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93/42/EEC