





Company Overview

- JRI Limited, established in 1970 by Mr Ronald Furlong FRCS
- First H-A.C. coated hip replacement in the world
 - Furlong® H-A.C. 9th September 1985
- Dedicated orthopaedic research, development and manufacturing





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Securus System Design Rationale

Revision hip surgery represents a significant challenge to the orthopaedic surgeon and can have a major impact on a hospital's orthopaedic budget.

The Securus femoral revision system has been designed to help meet both the clinical and financial challenges. The range of femoral prostheses and the instrumentation to implant these have been designed to provide a versatile, easy to use and cost effective solution appropriate for the majority of femoral stem revisions.

A survey of surgeon opinion indicated that the requirements of an effective femoral revision hip system are:

- Ability to cope with a mismatch between metaphyseal and diaphyseal bone loss.
- Long stems with an anatomic anteroposterior bow to bypass deficient bone.
- An ability to achieve secure initial mechanical fixation followed as soon as possible by biological fixation.

The Securus system, based on the proven Furlong® H-A.C. stem design, with its full interchangeability between proximal bodies and distal stems, 6 trays of instrumentation, including distal targeting for locking screws, meets these requirements.



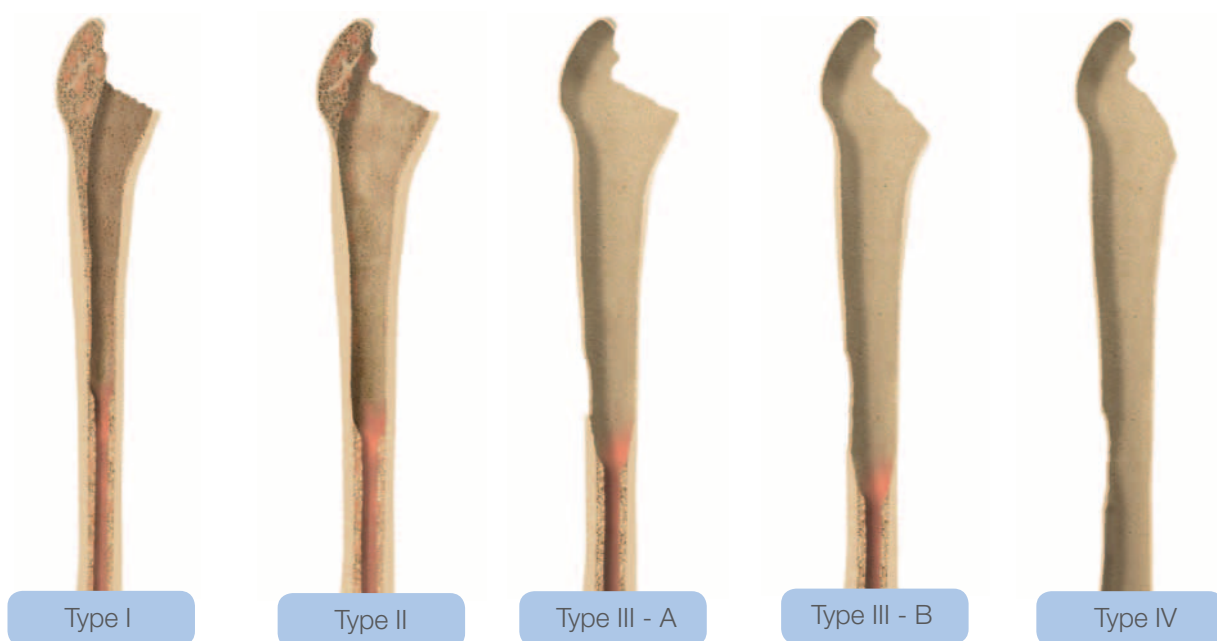


Securus System Design Features

Feature	Benefit
Cost effective	Concise component range keeps inventory to a minimum.
Furlong® pedigree	The Securus design is based on the Furlong® H-A.C. stem design, which has proved so successful in both primary and revision surgery ^{1, 2} .
Concise instrumentation	The system consists of just 6 trays of instrumentation, simplifying the operative procedure and keeping sterilisation and processing costs to a minimum.
Accurate distal locking	STEP technique and stable distal targeting jig, which locks securely onto the distal stem, help ensure reproducible location of distal locking holes.
Full interchangeability of modular components.	Any proximal body can be used with any distal stem providing maximum opportunity to accommodate mismatches between metaphyseal and diaphyseal dimensions.
Anteversion adjustment	Modular components allow for unlimited anteversion adjustment to accommodate patient anatomy. The monobloc components have 10° anteversion built in.
Anatomically bowed distal stems.	All distal stems have an A-P anatomical bow with a 1.2m radius of curvature to follow the anatomical bow of the femur.
Fully hydroxyapatite ceramic coated.	Proximal bodies are Supravit® Zoned coated and distal stems are Supravit® coated providing optimal conditions for bone in-growth and long-term biological fixation of the implant.



Loss Type	Details	Revision Hip Types as a Percentage of all Femoral Revisions. ^{4, 5, 6, 7}
Type I	Minimal loss of metaphyseal cancellous bone. Intact diaphysis.	30%
Type II	Extensive loss of metaphyseal cancellous bone. Intact diaphysis. Loss of cancellous bone.	47%
Type III - A	The metaphysis is not supportive. There remains more than 4 cm of bone in the diaphysis to allow for a scratch fit.	11%
Type III - B	The metaphysis is not supportive. There remains less than 4 cm of bone in the diaphysis to allow for a scratch fit.	11%
Type IV	Wide open canal without any appreciable isthmus to support an uncemented stem.	1%



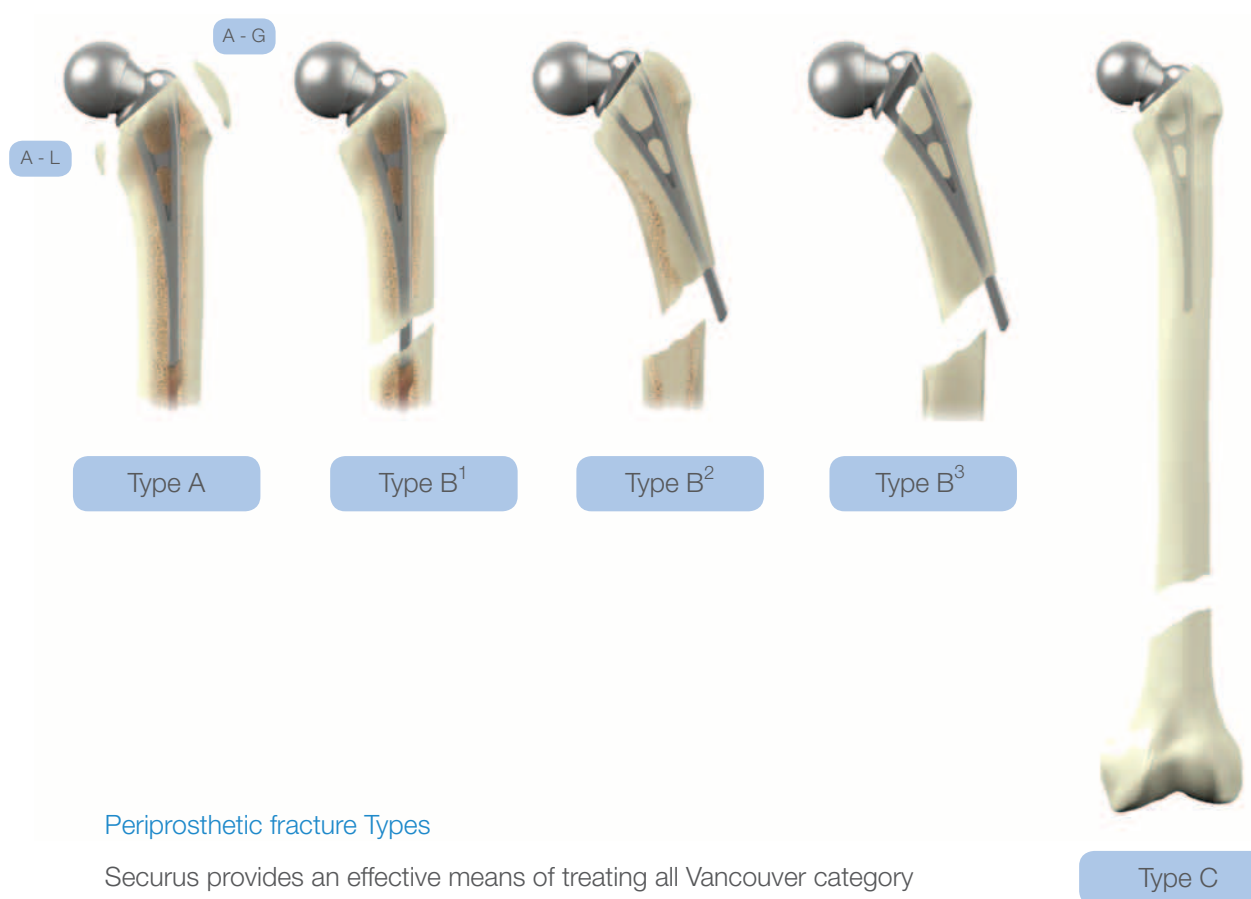
Revision Hip Types

Securus provides an effective means of treating the majority of Paprosky Type I, II and IIIa femurs which account for 88% of femoral revisions.



Vancouver Classification

Catagory	Location	Description
A – G	Trochanteric region	Greater Trochanter
A – L	Trochanteric region	Lesser Trochanter
B1	Around or just distal to the stem	Prosthesis stable
B2	Around or just distal to the stem	Prosthesis unstable
B3	Around or just distal to the stem	Bone stock inadequate
C	Well below the stem	Fracture not affecting prosthesis



Periprosthetic fracture Types

Securus provides an effective means of treating all Vancouver category A and B periprosthetic fractures.



Modular Range

Full interchangeability between modular proximal bodies and distal stems.

Modular Proximal Bodies

133° neck angle

Standard and +5mm offset

Sizes equivalent to 13mm, 14mm, 15mm and 16mm Furlong® H-A.C. stems

2 body types, standard and Extended Lateral Shoulder (ELS)



Standard



ELS

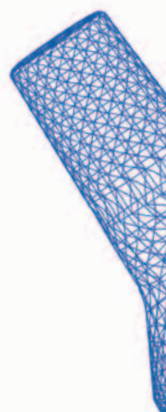
Modular Distal Stems

250mm and 300mm total lengths bowed

250mm length, distal stem diameters: 11mm, 12mm, 13mm, 14mm, 15mm, 16mm, 17mm and 18mm

300mm length, distal stem diameters: 13mm, 14mm, 15mm, 16mm, 17mm and 18mm

2 distal holes for locking screws in the 250mm stem, and 3 distal holes in the 300mm stem





Monobloc Range

Maintaining sufficient strength at the interface between the proximal body and the distal stem places limitations on the size of implants which can be offered in the modular configurations.

To maximise the flexibility of the system Monobloc 250mm A-P bowed stems in the equivalent of Furlong® H-A.C. 11 and 12 have been included in the Securus range. These stems have 10° anteversion built in and so are available in lefts and rights. All stems feature a 133° neck angle and are available in Standard and High (+5mm) Offset.

Monobloc Stems

250mm length

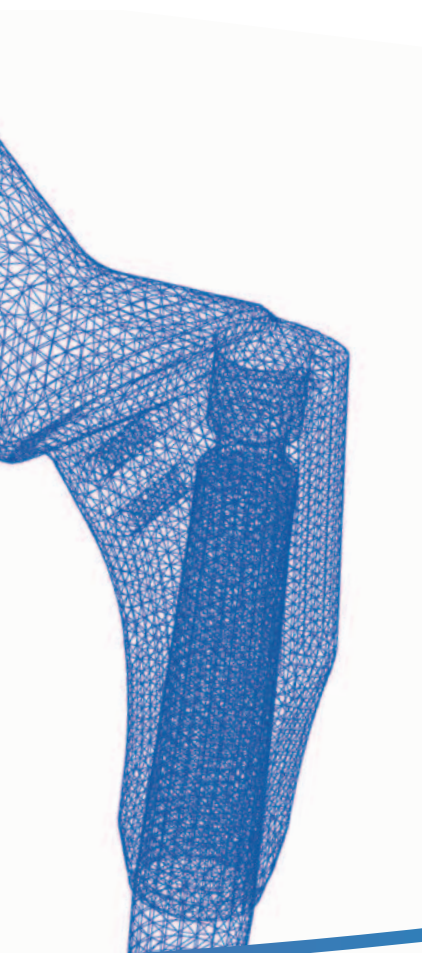
Bowed, 10° left and right anteversion

133° neck angle

Standard and +5mm offset

Sizes equivalent to 11mm and 12mm Furlong® H-A.C. stems

Reduced lateral shoulder



FURLONG
HIP SYSTEM



Not all H-A.C. coatings are the same

The Furlong® Total Hip Replacement was the first in the world to utilise Hydroxyapatite Ceramic (H-A.C.) coating to promote biological fixation. Since its introduction in 1985 JRI has continued to develop and improve its H-A.C. coating and the way in which it is applied.

One of the most important factors is whether the H-A.C. coating is applied in atmospheric (APS) or vacuum conditions (VPS). Supravit® is JRI's VPS H-A.C coating.

Fact:

All JRI implants have been VPS coated since 1993

VPS removes oxygen and gas pockets

VPS produces a dense homogenous coating, avoiding cracks and preventing delamination

Supravit® achieves bond strength in excess of 60MPa

Supravit® coating thickness is 200µm

Supravit® adhesive strength is so great that a fully bonded size 10 Furlong® stem could lift the weight of a double decker bus

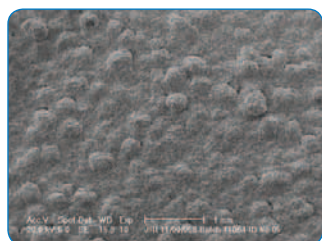


Fig.1 H-A.C. coating application using a plasma torch at 20,000°C.

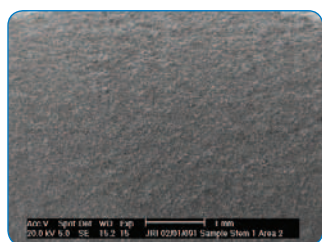


Supravit® Zoned H-A.C. Coating

Modular proximal femoral bodies and the metaphyseal section of the monobloc stems feature Supravit® Zoned coating.



Surface image of Supravit® Zoned H-A.C. coating

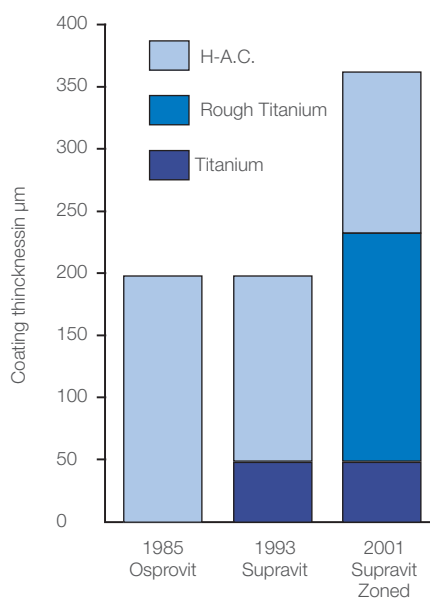


Surface image of Supravit® H-A.C. coating



SUPRAVIT®
ZONED

Push-out tests have shown an increased shear strength at the H-A.C. to bone interface as a function of surface roughness. There is also an increased surface area of H-A.C. for bone in-growth to promote biological fixation proximally – a great advantage in revision surgery.





Accurate Distal Locking

The distal targeting jig references directly from the distal stem, this allows for precise setting of the jig,

Targeting jig constructed in titanium for light weight, high strength and stability.

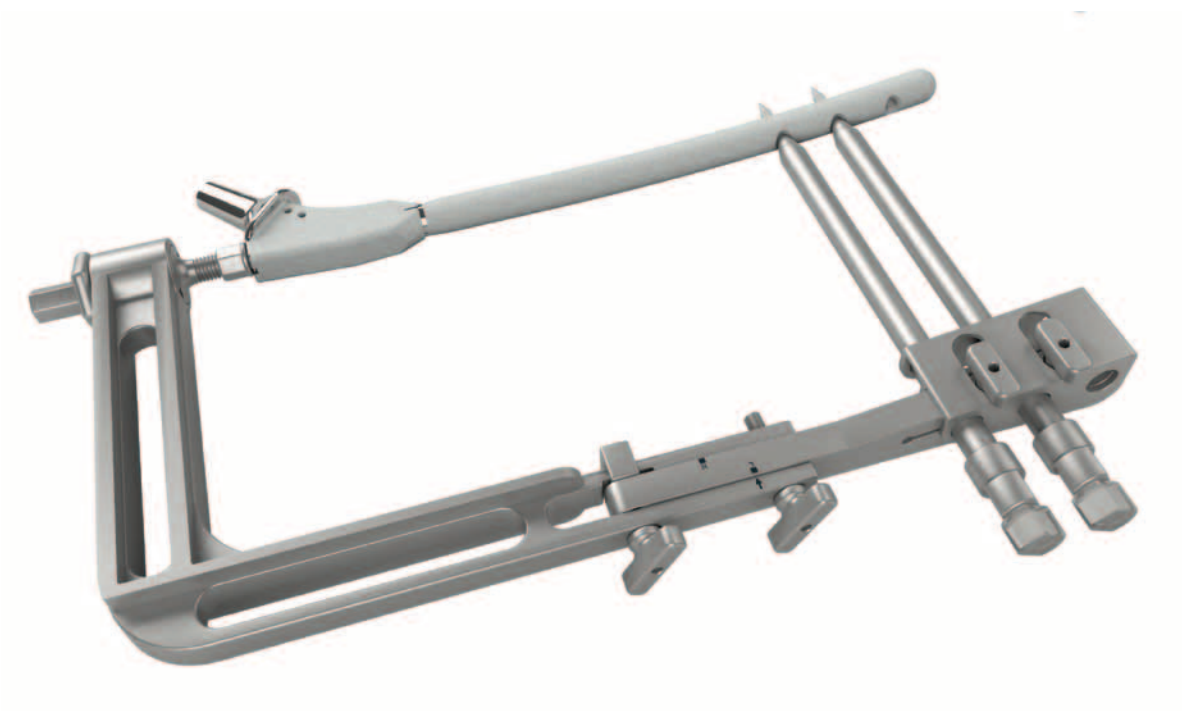
Logical sequence of steps for jig set up and use.

Stable locking of adjustable components to maintain pre-referenced settings

Reproducible accuracy of distal targeting reduces reliance on intra-operative imaging.

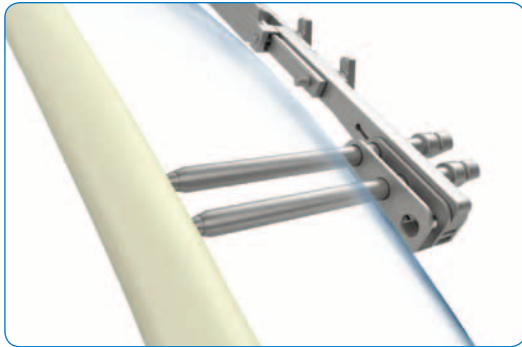
Two screw holes in the 250mm stems and three screw holes in the 300mm stems accept 4.5mm diameter locking screws

Anteversion of the proximal modular body can be adjusted after distal locking has been completed.

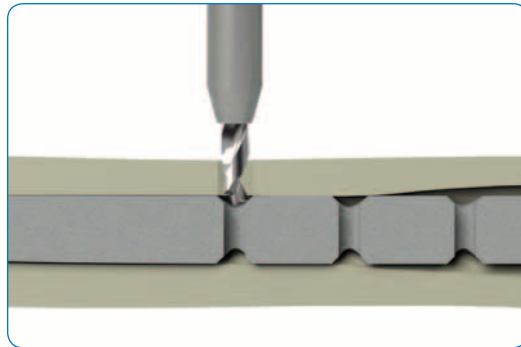




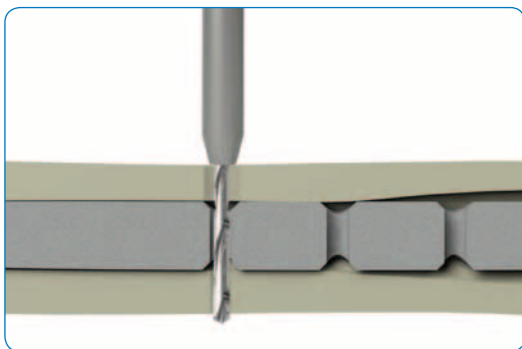
STEP technique



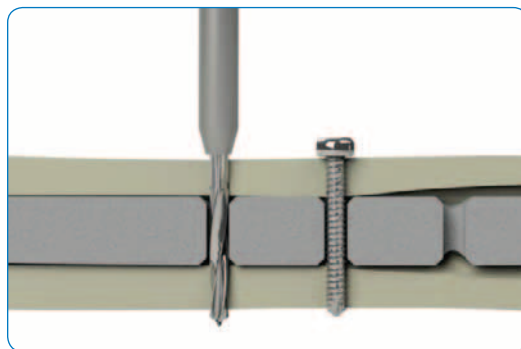
STEP 1 – insert definitive implant and attach pre-assembled jig



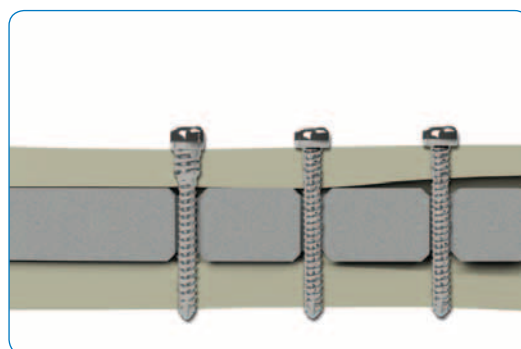
STEP 2 – introduce the 6mm STEP drill through the tissue protector corresponding to the most proximal of the locking holes and drill through the lateral cortex only.



STEP 3 – using the 3.8mm drill bit penetrate through the medial cortex and leave the drill in situ, thereby anchoring the jig in position.



STEP 4 – using the standard targeting technique drill the subsequent distal holes and secure with locking screws.



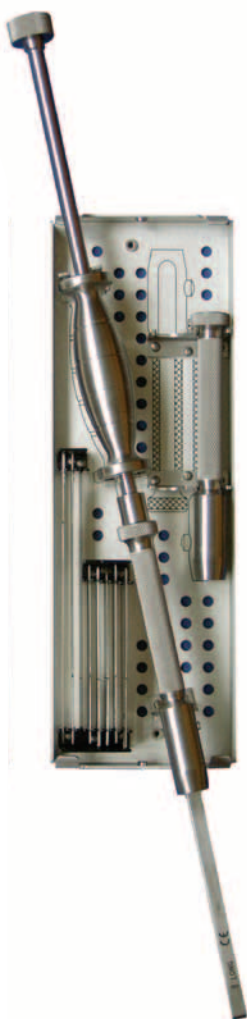
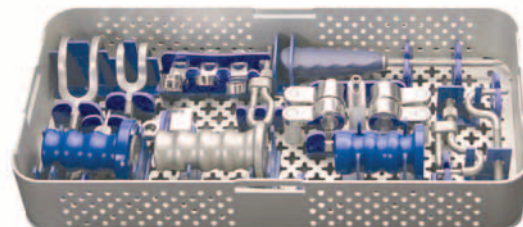
STEP 5 – remove the drill from the proximal hole and secure with a locking STEP screw.





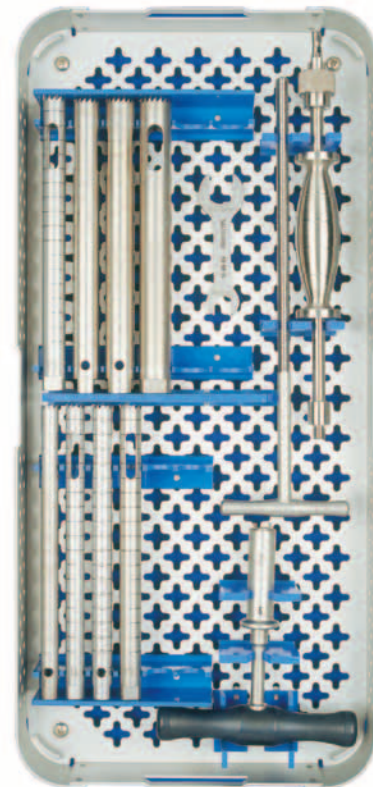
Additional Revision Instrumentation

JRI's Universal Stem Extractor set will aid in the removal of virtually all designs of femoral stem. A range of hooks available for monobloc stems and a variety of spigot adaptors for modular designs make this set ideal for all revisions. The extra-long robust slap-hammer exerts an extraction force in line with the central stem axis.



JRI's Flexible Osteotome Set is self contained and offers the ability to select the correct blade needed intra-operatively without the need to open sterile packed blades and pass them into the sterile field. Blades are available in two lengths and various widths.

JRI's Trephines are used to bore out the femoral canal or to bore over the top of a broken implant. Available to use on either power or by hand, these sharp trephines make removing broken distal stems more predictable and may remove the need for an extended trochanteric osteotomy (ETO).

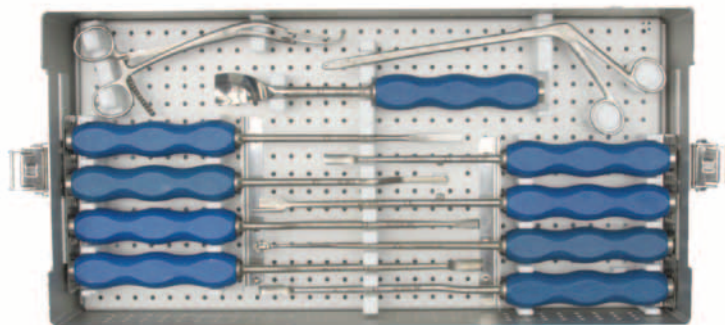


JRI's Femoral Head Separator enables the safe and simple removal of the femoral head without damaging the spigot.



JRI's Cement Removal Instrumentation

offers a complete set of cement chisels, drills, forceps and curettes to help facilitate safe and speedy removal of the cement mantle.





Acetabular Cup Removal Tool

Minimises acetabular bone loss during revision of a well-fixed, uncemented hemispherical cup.
Controlled dissection at the bone-cup interface assists in safe predictable cup removal.

Interchangeable Ball Heads, of various diameters screw onto the end of the substantial Handle which helps stabilise and guide the Blades.

Sharp edged Blades in two lengths facilitate progressive removal of the cup.

The Blades closely match the outer diameter of the acetabular cup helping to preserve as much bone stock as possible.





Revision Acetabular Cups & Ceramic Heads

The Furlong® H-A.C. CSF Plus Acetabular Cup System with Multi-hole option.

The Multi-hole cup, based on the CSF Plus cup increases the options for positioning of cancellous screws for adjunctive fixation in primary or revision surgery. Each cup in the Multi-hole range will accept either a 36mm or 40mm Biolox® delta ceramic liner for enhanced wear performance and joint stability.



Large Bearing Cemented Acetabular Cup

With the increased popularity of large femoral head sizes for improved range of motion and joint stability, JRI is pleased to offer a 36mm inside diameter (I/D) cemented acetabular cup. These cups accommodate 36mm Cobalt Chrome, Ceramic or Revision Ceramic femoral heads. These 36mm I/D cups are made of CLP75®, our Highly Cross-linked Polyethylene to minimise wear rates.



BIOLOX® Delta Ceramic Revision Femoral Heads

The system for revision and primary surgery is intended to be used either for cup revision or ball head exchange, the latter when a ceramic head is to be inserted on an already implanted prosthesis stem. The titanium sleeves are manufactured using a clinically proven alloy of titanium – TiAl6V4. They are available for neck sizes S, M, L and XL. Their skirt-free design allows for maximisation of range of motion without impingement.



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HIP SYSTEM



Securus Implant Chart

Modular Revision Proximal Bodies

Modular Revision Proximal Bodies	
Securus Modular H-A.C. Proximal Body, Standard Offset (41mm)	Implant
A	113.15.13
B	113.16.14
C	113.17.15
D	113.18.16
Securus Modular H-A.C. Proximal Body, High Offset (46mm)	Implant
A	114.15.13
B	114.16.14
C	114.17.15
D	114.18.16

Modular Revision Stems

Modular Revision Stems	
Securus Modular H-A.C. Curved Femoral Stem 250mm	Implant
11	116.11.25
12	116.12.25
13	116.13.25
14	116.14.25
15	116.15.25
16	116.16.25
17	116.17.25
18	116.18.25
Securus Modular H-A.C. Curved Femoral Stem 300mm	
13	116.13.30
14	116.14.30
15	116.15.30
16	116.16.30
17	116.17.30
18	116.18.30
Modular Locking Bolt	Implant
(one size)	110.00.00
Modular Body Cap	Implant
(one size)	110.00.01



Securus Implant Chart

Modular Revision Extended Lateral Shoulder (ELS) Proximal Bodies

Securus Modular H-A.C. ELS Proximal Body, Standard Offset (41mm)	Implant
A	118.15.13
B	118.16.14
C	118.17.15
D	118.18.16
Securus Modular H-A.C. ELS Proximal Body, High Offset (46mm)	Implant
A	119.15.13
B	119.16.14
C	119.17.15
D	119.18.16

Monobloc Revision Stems

Securus Monobloc H-A.C. Curved Femoral Stem, 10° Anteversion, Standard Offset (41mm) 250mm	Implant
11 Left Leg	117.11.25
12 Left Leg	117.12.25
11 Right Leg	127.11.25
12 Right Leg	127.12.25
Securus Monobloc H-A.C. Curved Femoral Stem, 10° Anteversion, High Offset (46mm) 250mm	Implant
11 Left Leg	117.11.26
12 Left Leg	117.12.26
11 Right Leg	127.11.26
12 Right Leg	127.12.26
Monobloc Body Cap	Implant
(one size)	110.00.02



Securus Implant Chart

Distal Locking Screws

30mm Length	110.00.30
35mm Length	110.00.35
40mm Length	110.00.40
45mm Length	110.00.45
50mm Length	110.00.50
55mm Length	110.00.55
60mm Length	110.00.60
65mm Length	110.00.65
70mm Length	110.00.70

Distal Locking STEP Screws

30mm Length	110.01.30
35mm Length	110.01.35
40mm Length	110.01.40
45mm Length	110.01.45
50mm Length	110.01.50
55mm Length	110.01.55

Disposable Items

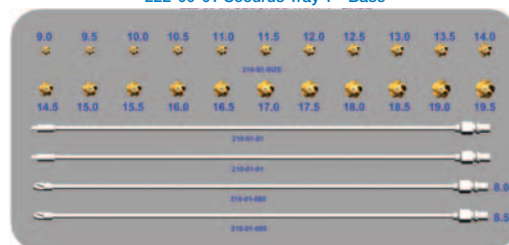
3.8mm Calibrated Drill Bit	210.50.17
900mm Olive Tipped Guide Wire	210.01.02



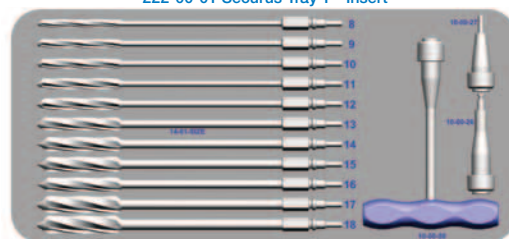
Securus Revision Tray 1 – 222.00.01

Base Tray		Insert Tray	
8 (Monobloc)	210.01.080	T-Handle	10.00.50
8.5 (Monobloc)	210.01.085	Jacobs Adaptor	10.00.64
Reamer Head 9mm	210.02.090	Hudson Adaptor	10.00.63
Reamer Head 9.5mm	210.02.095	Straight Reamer 8mm	14.61.08
Reamer Head 10mm	210.02.100	Straight Reamer 9mm	14.61.09
Reamer Head 10.5mm	210.02.105	Straight Reamer 10mm	14.61.10
Reamer Head 11mm	210.02.110	Straight Reamer 11mm	14.61.11
Reamer Head 11.5mm	210.02.115	Straight Reamer 12mm	14.61.12
Reamer Head 12mm	210.02.120	Straight Reamer 13mm	14.61.13
Reamer Head 12.5mm	210.02.125	Straight Reamer 14mm	14.61.14
Reamer Head 13mm	210.02.130	Straight Reamer 15mm	14.61.15
Reamer Head 13.5mm	210.02.135	Straight Reamer 16mm	14.61.16
Reamer Head 14mm	210.02.140	Straight Reamer 17mm	14.61.17
Reamer Head 14.5mm	210.02.145	Straight Reamer 18mm	14.61.18
Reamer Head 15mm	210.02.150		
Reamer Head 15.5mm	210.02.155		
Reamer Head 16mm	210.02.160		
Reamer Head 16.5mm	210.02.165		
Reamer Head 17mm	210.02.170		
Reamer Head 17.5mm	210.02.175		
Reamer Head 18mm	210.02.180		
Reamer Head 18.5mm	210.02.185		
Reamer Head 19mm	210.02.190		
Reamer Head 19.5mm	210.02.195		
Flexible Driver Shaft	210.01.01		

222-00-01 Securus Tray 1 - Base



222-00-01 Securus Tray 1 - Insert



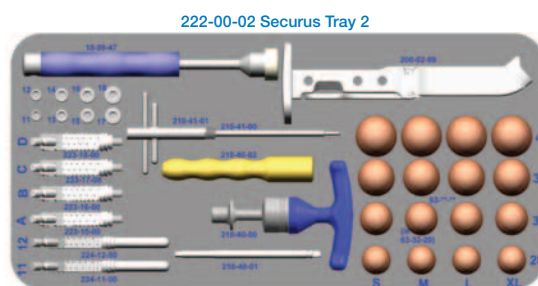


Securus Revision Tray 2 – 222.00.02

Torque Limiting Driver Handle	210.40.00
Torque Counterforce Handle	210.40.02
5mm Hex Driver Bit	210.40.01
Implant Distractor A	210.41.00
Implant Distractor B	210.41.01
Monobloc Rasp 11mm	224.11.50
Monobloc Rasp 12mm	224.12.50
Modular Rasp A	223.15.00
Modular Rasp B	223.16.00
Modular Rasp C	223.17.00
Modular Rasp D	223.18.00
Straight Rasp Handle	200.02.99
Head Impactor	10.99.47

Modular rasp Distal Tip	
11mm	226.11.50
12mm	226.12.50
13mm	226.13.50
14mm	226.14.50
15mm	226.15.50
16mm	226.16.50
17mm	226.17.50
18mm	226.18.50

Trial Femoral head	
28mm Short Neck	63.28.10
28mm Medium Neck	63.28.20
28mm Long Neck	63.28.30
28mm Extra Long Neck	63.28.40
32mm Short Neck	63.32.10
32mm Medium Neck	63.32.20
32mm Long Neck	63.32.30
32mm Extra Long Neck	63.32.40
36mm Short Neck	63.36.10
36mm Medium Neck	63.36.20
36mm Long Neck	63.36.30
36mm Extra Long Neck	63.36.40
40mm Short Neck	63.40.10
40mm Medium Neck	63.40.20
40mm Long Neck	63.40.30
40mm Extra Long Neck	63.40.40





Securus Revision Tray 3 – 222.00.03

Securus Modular Trial Proximal Body Standard Offset (41mm)

Size A	213.15.13
Size B	213.16.14
Size C	213.17.15
Size D	213.18.16

Securus Modular Trial Proximal Body High Offset (46mm)

Size A	214.15.13
Size B	214.16.14
Size C	214.17.15
Size D	214.18.16

Securus Modular Trial Curved Femoral Stem 250mm

11	216.11.25
12	216.12.25
13	216.13.25
14	216.14.25
15	216.15.25
16	216.16.25
17	216.17.25
18	216.18.25

Securus Modular Trial Curved Femoral Stem 300mm

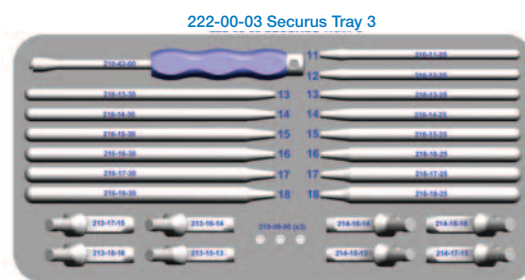
13	216.13.30
14	216.14.30
15	216.15.30
16	216.16.30
17	216.17.30
18	216.18.30

Modular Trial Stem Impactor Handle

210.42.00

Trial Stem Securing Bolt

210.00.00





Securus Revision Tray 4 – 222.00.04

Securus Monobloc Trial Stems Standard Offset (41mm)

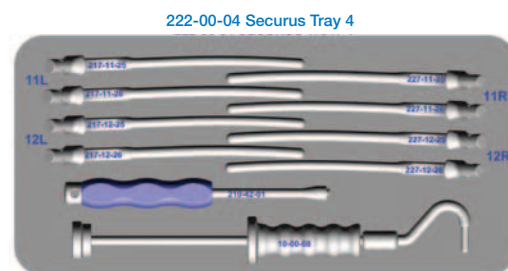
11mm Left Hand	217.11.25
12mm Left Hand	217.12.25
11mm Right Hand	227.11.25
12mm Right Hand	227.12.25

Securus Monobloc Trial Stems High Offset (46mm)

11mm Left Hand	217.11.26
12mm Left Hand	217.12.26
11mm Right Hand	227.11.26
12mm Right Hand	227.12.26

Monobloc Trial Stem Impactor

Monobloc Trial Stem Impactor	210.42.01
Slaphammer	10.00.08

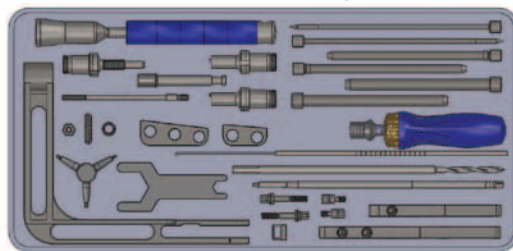




Securus Revision Tray 5 – 222.00.05

Ratchet Screwdriver	50.91.00
Jig Arm	210.50.01
Modular Connector Body	210.50.27
Connector Body Securing Nut	210.50.03
Connector Through Rod	210.50.28
Connector Body Nut	210.50.05
Arm Retention Nut	210.50.06
Jig Arm Sleeve	210.50.08
End Arm Securing Bolts	210.50.09
Drill Guide Securing Bolts	210.50.10
End Arm 300mm	210.50.12
End Arm 250mm	210.50.13
Tissue Protector	210.50.14
Drill Guide	210.50.15
AWL	210.50.16
Wrench	210.50.18
Jig Impactor Handle	210.50.19
Monobloc Connector Body LEFT	210.50.25
Monobloc Connector Body RIGHT	210.50.24
Monobloc Fastening Bolt	210.50.26
Allen Key	50.03.08
Depth Gauge	210.50.23
6mm STEP drill	210.50.31
Screwdriver Shaft	210.50.98
End Arm Stabiliser 300mm	210.50.29
End Arm Stabiliser 250mm	210.50.30

222-00-05 Securus Tray 5

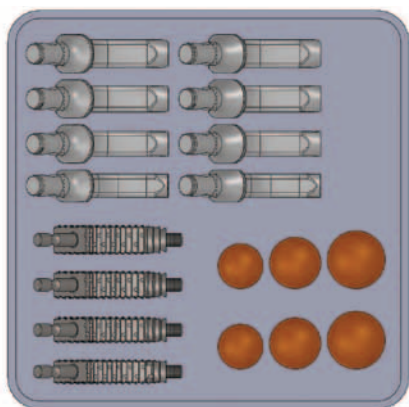




Securus Revision Tray 6 – 222.00.06

Description	
Securus ELS Modular Trial Body Size A, Standard Offset	218.15.13
Securus ELS Modular Trial Body Size B, Standard Offset	218.16.14
Securus ELS Modular Trial Body Size C, Standard Offset	218.17.15
Securus ELS Modular Trial Body Size D, Standard Offset	218.18.16
Securus ELS Modular Trial Body Size A, +5 Offset	219.15.13
Securus ELS Modular Trial Body Size B, +5 Offset	219.16.14
Securus ELS Modular Trial Body Size C, +5 Offset	219.17.15
Securus ELS Modular Trial Body Size D, +5 Offset	219.18.16
Rasp for Securus Body Size A ELS	228.15.00
Rasp for Securus Body Size B ELS	228.16.00
Rasp for Securus Body Size C ELS	228.17.00
Rasp for Securus Body Size D ELS	228.18.00
Trial Femoral Heads Extra Long +4 mm	63.28.50
Trial Femoral Heads Extra Long +8 mm	63.28.60
Trial Femoral Heads Extra Long +4 mm	63.32.50
Trial Femoral Heads Extra Long +8 mm	63.32.60
Trial Femoral Heads Extra Long +4 mm	63.36.50
Trial Femoral Heads Extra Long +8 mm	63.36.60

222-00-06 Securus Tray 6



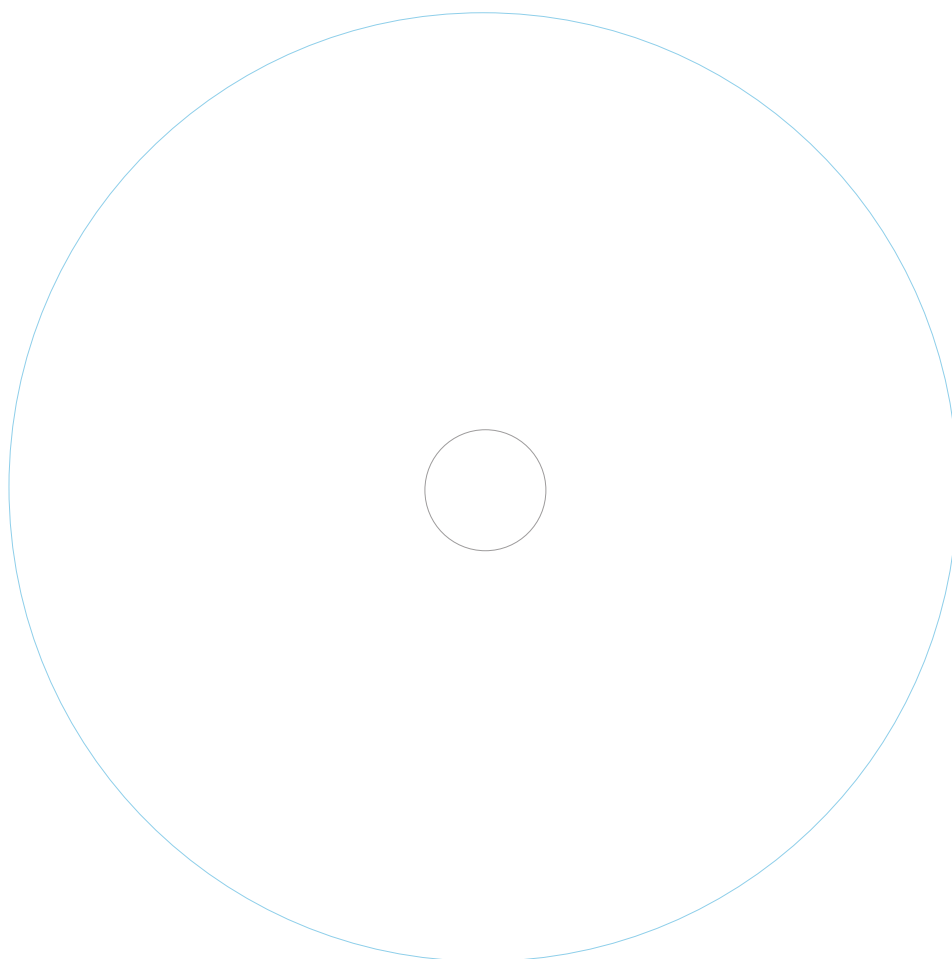


Instructional DVD

Please find attached an instructional DVD which contains the following;

1. Securus operative technique (Acrobat PDF)
2. Securus Animation (WMV and Quicktime formats)

The Securus operative technique and Securus animation can be viewed at www.jri-ltd.co.uk with the (Acrobat PDF) file available as a download.



JRI Services/Education

- Research Funding
- Nurse Training
- Factory Tours
- Furlong Hip Courses
- In service support
- Consignment stock checks:
 - Implants
 - Instruments
- PACS Digital X-Ray templates

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