



Made in Britain¹



AVANTEON[®] TRAUMA SOLUTION

Operative Technique



INTUITIVE

The ATS is a hemiarthroplasty system based on the highly successful Avanteon® Hip System in a simplified form. ATS is a highly polished Avanteon® stem with a 12/14 Taper and is fully compatible with Modular Bipolar, Bipolar or Physiological heads to treat patients with a displaced intracapsular hip fracture. For patients that should be offered a THR for this indication, the ATS is compatible with a range of JRI primary cemented and uncemented cups, including dual mobility. The flexibility of the ATS system allows the Surgeon to offer all solutions with one stem.

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ATS Pre-Operative Planning



The overall aim of pre-operative planning is to establish anatomical data from the patient to guide the surgeon towards the optimal size of the femoral stem and acetabular component and their ideal position after implantation.

Anteroposterior and lateral X-rays with the hip in neutral position are overlaid with the template film for full pre-operative evaluation. PICTURE ARCHIVING AND COMMUNICATION SYSTEMS (PACS) templates are also available via your PACS software provider.



For the purpose of this procedure we use the Avanteon size 1 stem with an offset of 38mm. If pre-operative planning indicates that offset or size is different, then other stem sizes from the Avanteon range can be used to create a modular hemiarthroplasty.

The X-ray templates for the AVANTEON® Hip system are set at 115% magnification.

An example of templating for the AVANTEON® hip system is shown in the above X-ray images and is available on all commonly used 2D software and in acetate.

ATS Product Information



The JRI Physiological Head is manufactured from HNSS and available in sizes 39mm-54mm (1mm increments), 56mm and 58mm. HNSS shows good biocompatibility and provides greater fatigue strength and corrosion resistance over conventional medical grade stainless steel.

The JRI Bipolar Head and JRI Modular Bipolar Head systems are also available and compatible with the ATS.

Options for THA can be discussed with your JRI Local Representative.

12-14 Taper to allow for subsequent conversion to THA if required

The highly polished surface finish designed to allow for controlled subsidence and self locking in the cement mantle



125° Neck Angle

Broad shoulder to ensure optimal cement mantle around greater trochanter guarding against rotation

The **Avanteon Stem** is made of High Nitrogen Stainless Steel and is 150mm in length

ATS Femoral Head Resection & Sizing

1



Correct positioning of the patient on the operating table is very important. The hip joint is exposed using a preferred surgical approach for hemiarthroplasty.

2



The fractured femoral head is removed using the Femoral Head Extractor (10.01.27). A light tap may help engagement and purchase into the femoral head. If required, trimming of the fracture line can be performed. A trial broach (Size 1, 38mm offset 007501) can be used as a guide.

3



The femoral head size can then be estimated using the Femoral Head Gauge (64.00.19).

The femoral head diameter needs to be checked in two planes, perpendicular to one another, as they are often not truly spherical. Select the smallest diameter that fits.

4



Femoral Head Sizing

Use the Head Sizing Template (64-00-19) to size the resected femoral head. Select the appropriate trial head and trial head introducer.

The Labrum is best left intact but, if necessary, can be sectioned at this point to allow the correct size head to be selected.

ATS Femoral Canal Preparation

Note: Pre-operative planning and templating, by either PACS or hard-copy x-rays is desirable when using a tapered, polished femoral stem to ensure correct leg length, soft tissue tension, and restoration of anatomy. Variations in patient anatomy mean that using the same anatomical reference points in the same way in every patient is inappropriate.

Please see page 2 for additional information.

Attach the box osteotome (small 007033) to the broach handle (007035) and open up the medullary canal by aligning the cut of the osteotome with the piriformis. The appropriate degree of anteversion should be determined at this point.

Figure 5

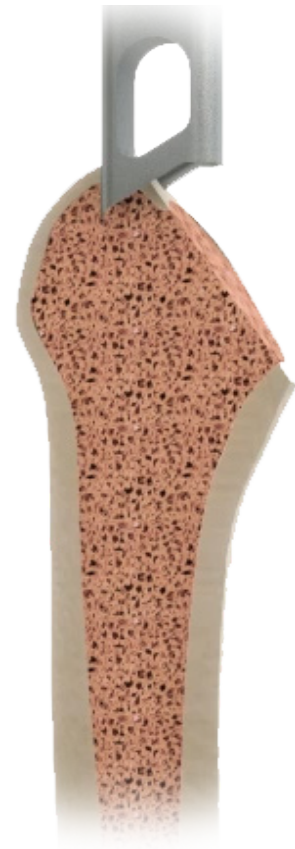


Figure 6



In preparation for broaching and distal cement insertion, the femoral canal is enlarged using one intramedullary reamer (small 007051).

The reamer is used to widen the femoral canal until the required diameter and depth are achieved while maintaining neutral axial alignment within the femur.

It is recommended that there is a 1-2cm depth of cement between the distal tip of the stem centraliser and the top of the cement plug. Therefore, as a guide, the reamer should be introduced to a depth of 20cm measured to the tip of the greater trochanter (Figure 6).

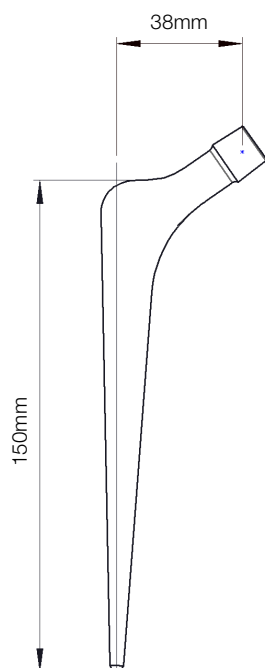


Figure 7



Figure 8

The smallest broach (Size 0, 1mm, 38mm offset, 007505) is used first to prepare the proximal femur (Figure 8). A second broach (Size 1, 1mm, 38mm offset, 007501) is then used.

The final broach (Size 1, 1mm, 38mm offset, 007101) is then used to prepare for the definitive implant (Size 1, 38mm offset 0510011).

Maintaining neutral axial alignment within the medullary canal is essential.

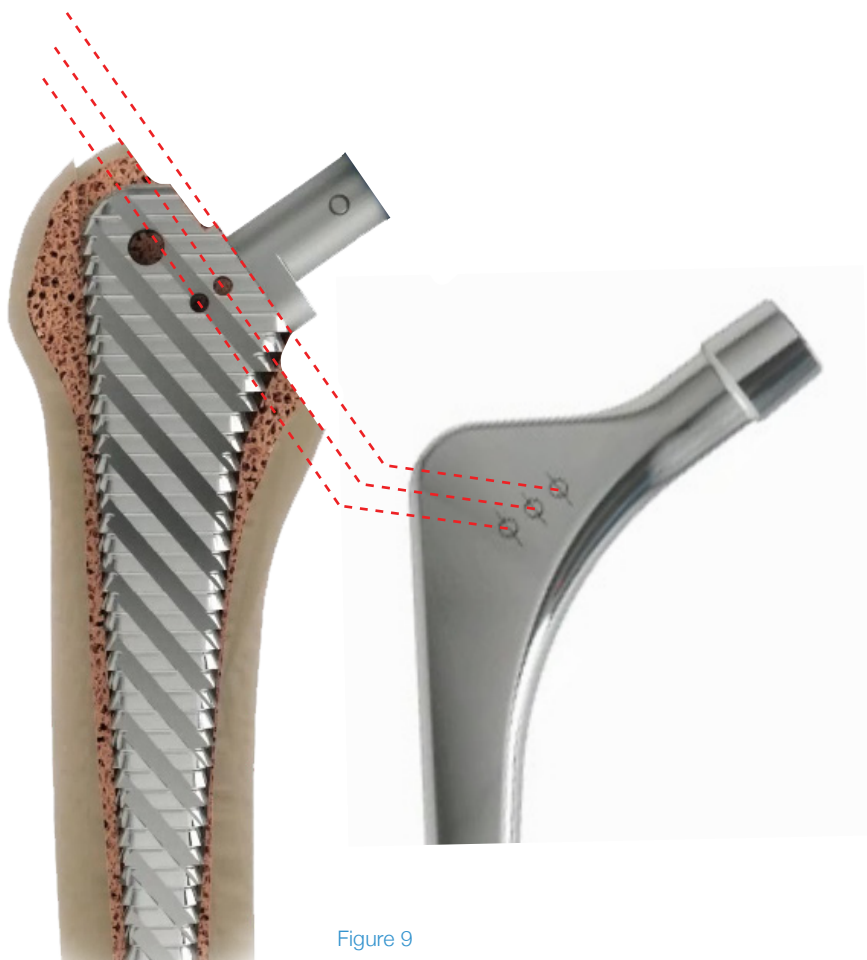


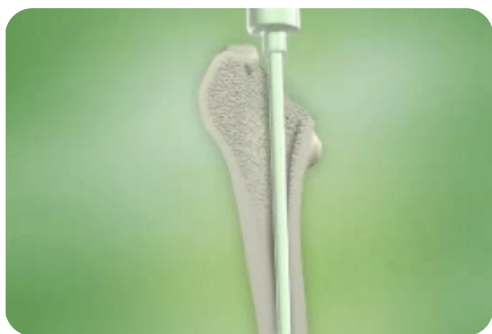
Figure 9

The two small holes and the 'flat' on the rasp where the trial neck sits correspond to the three depth markings on the definitive stem (Figure 9). The rasp can be inserted to the desired depth as indicated pre-operatively, taking note of the depth marking when rasping. The trial neck (007128) matches the desired offset of 38mm.

The head trials as described on page 4 can be used to re-establish the femoral head centre.

ATS Cementing & Femoral Stem Implantation

The Modern cementing technique is recommended including the use of a distal cement restricter. Clear the medullary canal of debris, pulse lavage and then dry.



The optimum time for insertion of the femoral stem will depend upon the cement manufacturer's guidelines. Bone cement, cement gun, and the femoral cement pressuriser are not supplied with the AVANTEON® cemented hip system.

A separately packed stem centraliser is attached to the distal tip of the stem. The distal tip of the stem inserter (007006) is inserted into the aperture on the lateral shoulder of the stem (Figure 10).

Place a thumb over the bone cement in the calcar to maintain pressure during stem insertion.



Figure 10

Figure 11



The pressurisation seal is removed. Ensure that the proximal cement is clean and dry.

The femoral stem is inserted to the pre-determined depth, referencing the depth indication markings on the stem while ensuring a neutral axial alignment of the stem is maintained. The depth to which the stem is inserted and the degree of anteversion are at the discretion of the surgeon.

The stem is held in place with the stem introducer until the bone cement has polymerised (refer to the bone cement manufacturer's guidelines). The stem introducer is gently removed while applying counter pressure on the stem (Figure 11).



Figure 12



Figure 13

You can choose to re-trial with the head trials as described on page 7.

Select the appropriate definitive head and place it carefully onto the clean taper of the femoral stem using a twisting motion (Figure 12). The definitive head is impacted

using the head impactor, with a single firm blow (Figure 13), ensuring the surface of the head is not scratched or damaged in any way.

The joint is then reduced and the wound closed.

ATS Implant Range & Instruments



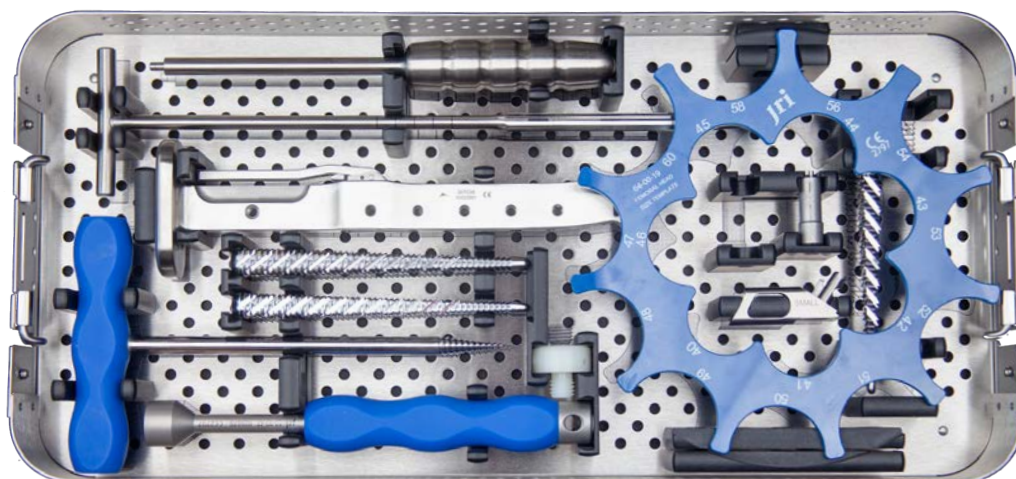
CAT. NO	DESCRIPTION	
	STEM	
	Size 1	38mm offset



DESCRIPTION	CAT. NO	
Distal Centralizer with Tantalum bead	Material	
Size Ø10-18mm	PMMA	0251018



PHYSIOLOGICAL HEADS (O/D)	PRODUCT NO.
39mm	93.39.01
40mm	93.40.01
41mm	93.41.01
42mm	93.42.01
43mm	93.43.01
44mm	93.44.01
45mm	93.45.01
46mm	93.46.01
47mm	93.47.01
48mm	93.48.01
49mm	93.49.01
50mm	93.50.01
51mm	93.51.01
52mm	93.52.01
53mm	93.53.01
54mm	93.54.01
56mm	93.56.01
58mm	93.58.01



TRAY 1 - TOP LAYER		CAT NO.
Broach		
Size 0	1mm, 38mm offset	007505
Size 1	1mm, 38mm offset	007501
Size 1	38mm offset	007101
Trial Necks		
CDH and 38mm Offset		007128
Stem Inserter		007006
Femoral Head Impactor		109947 & 109938
Box Osteotome (Small)		007033
Intramedullary Reamer		
Small 10mm		007051
Broach Handle		007035
Femoral Head Gauge		640019



References

¹The AVANTEON® hip system is made in Britain.



For further information and
training resources visit www.jri-ltd.com

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