MODULAR STRAIGHT STEM
CEMENTED

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We produce advanced systems *for you*

MODULAR STRAIGHT STEM
CEMENTED

GENERAL FEATURES

Modular Straight Stem is designed for use in hip arthroplasty. 10 different stem sizes provide stronger adhesion between the prosthesis and the medullary canal using minimum cement support.

Made of certified CoCrMo alloy in accordance with ISO 5832-4 standard

CoCrMo		
Stem Diameter	**Stem Length**	**Code**
5 mm	133	10206013901
6,25 mm	135,5	10206013906
7,5 mm	138	10206013001
8,75 mm	140,5	10206013903
10 mm	143	10206013002
11,25 mm	145	10206013904
12,5 mm	147	10206013003
13,75 mm	149	10206013905
15 mm	153	10206013004
17,5 mm	158	10206013005

Note: Read the instructions for use carefully and if you have any questions about product compatibility, please contact your TIPSAN representative.

This document is a guide for surgeons, but there are multiple techniques for its application and as with any other surgical procedure, the surgeon must be thoroughly trained and ensure that the procedure is suitable for the patient.

Modular Straight Stem HIP Prosthesis- Cemented Surgical Technical Document

Indications

The Modular Straight Stem Hip Replacement Prosthesis is intended for use with cement in total or partial hip arthroplasty in primary surgery. The patient's condition must be based on one or more of the following:

- Severe painful and/or disabling joint disease due to osteoarthritis, traumatic arthritis, rheumatoid arthritis, or congenital hip dysplasia,
- Avascular necrosis of the femoral head,
- Acute traumatic fracture of the femur or neck,
- Failure of previous surgical interventions such as joint reconstruction, internal fixation, arthrodesis, hemiarthroplasty, surface replacement arthroplasty, or total hip replacement,
- Specific arthrodesis status

Preoperative Planning

Careful preoperative planning is essential. It will help the operator to predetermine the size of the femoral implant in order to restore the architecture appropriate to the patient's anatomy. In addition, using X-rays at a scale of 1.15:1, it will be possible to determine:

- Implant size.
- Neck cut level.
- Neck length.
- Prosthesis rotation center.

Additional Information:

The implant to be used will be selected during surgery due to possible differences between the actual conditions and the information obtained with X-rays.

Contraindications

Total or partial hip replacement is contraindicated in the following situations:

- Acute, systemic or chronic infection.
- Muscular, neurological or vascular insufficiency in the affected limb.
- Bone destruction or loss of bone properties that may compromise the stability of the implant.
- Pathologies that may compromise the functionality of the implant in any way.

Mental or neuromuscular disorders may pose an unacceptable risk to the patient and may be the source of postoperative complications. It is the surgeon's responsibility to ensure that the patient is not allergic to the materials used.

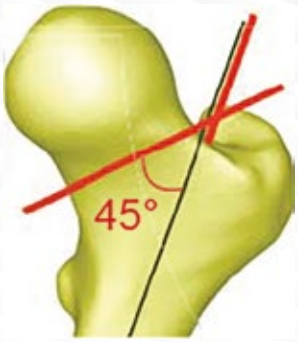
Surgical Method (Approach)

The surgery set has been developed for the posterior approach.

Femoral Neck Osteotomy

Due to the normal anteversion of the femoral neck, the remaining part of the neck should not be more than 1 cm medially for the correct axial positioning of the prosthesis.

The important point here is to open the medullary cavity in a trapezoidal shape. Use a power saw in this procedure. The tip of the greater trochanter should be reached with this procedure. Then the femoral head is removed using a corkscrew. The cut cancellous bone pieces are removed with the help of curettes, exposing the medullary canal.



Femoral Preparation

For access to the medullary canal, the femur is positioned in a position that best exposes the diaphyseal axis.

To prevent incorrect stem sizing and varus positions, a Chisel is applied across the digital fossa of the femoral neck.

Direct the chisel with a slight anteversion: This step is crucial for the correct application of the rasp and implant. This removes the cancellous bone block. If necessary, the endomedullary cancellous bone can be reamed using the metaphyseal reamer Reamer Awl, combined with the T-shaped handle for the reamer.

The rasps are used after assembly with the Modular Rasp Handle.

Starting from the lowest size, the rasps are tried in order, increasing until a complete locking with the bone is achieved; the first rasp used determines the position of the other rasps.

Check the anteversion of the rasp. The rasps should be placed at the optimum level determined by the 45° cut.

Check the axis and ensure cortical continuity. Care should be taken to ensure that the rasp creates a slight groove in the neck surface or trochanteric process. If necessary, debris can be removed from the rasp.

! Never force impact when the rasp is blocked in the diaphysis. The final rasp used must be rotationally stable to ensure stability of the implant.

Trial

After the Rasp is completely locked in the diaphysis, the Rasp Handle is removed. There are 3 types of selection for the Acetabulum side.

- Bipolar Set
- Press Fit Cup Multi Hole Set
- Acetabular Cup Set

For proper positioning, the Test Sphere is selected from these sets and is pressed onto the cone of the Rasp and installed. To facilitate the installation of the Test Spheres, wet the sphere before installation. After the trial placement, the leg length, muscle tension, balance and range of motion should be checked.

The Test Sphere and Rasp are removed.

! To remove the Test Sphere, simply hold and pull.

Additional Information: The Prosthesis Driver should only be used for implant installation and should not be used to correct the acetabular component position.

Cement Application

For preparation, clean the excess and non-supporting cancellous bone residues in the canal with the help of Guj Curette, Spoon Curette and Spatula Curette - Swan Neck.

Mount the Bone Plug Reamer with the Plug Holder in the Bone Plug set. Starting from the smallest size, ream the medullary canal until the appropriate size is determined. Mount the Bone Plug Test with the Plug Holder and check the size. Place the determined Bone Plug with the Plug Holder to the distal part of the canal.

Close the distal canal with the Cement Plug at least 1 cm below the stem tip. Be careful when choosing the Distal Cement Plug, make sure that it can resist the pressure that the cement will apply. Clean and dry the medullary canal. Keep the canal ready until the cement is injected. Send the cement into the canal using a cement gun. The pressure in the cement column ensures that the cement is clamped into the cancellous bone.

Implantation

The prosthesis corresponds to the last used rasp. Be careful not to damage the micro-surface structure of the taper when inserting the selected implant.

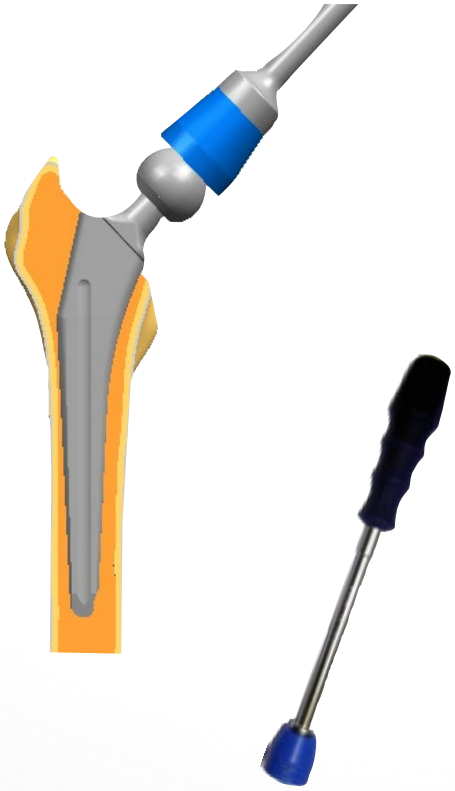
Insert the implant into the femoral cavity using the Driving Pin to push it downwards. The anteversion of the Modular Straight Stem is guided by the space left by the rasps in the femur. Under no circumstances should the implant anteversion be changed at this stage.

The Modular Straight Stem is driven into the gap created by the rasp with the Driving Pin until the collar section of the prosthesis is aligned with the cutting level.

The final driving is done carefully with the driver. At this stage, you can check the neck length by inserting the Test Sphere and then thoroughly clean the conical part of the stem before driving the modular sphere.

The Modular Sphere with the specified Taper Adjustment is placed into the taper of the Modular Straight Stem with a slight circular motion and is compressed and fixed to the taper by tapping with the Prosthesis Driver.

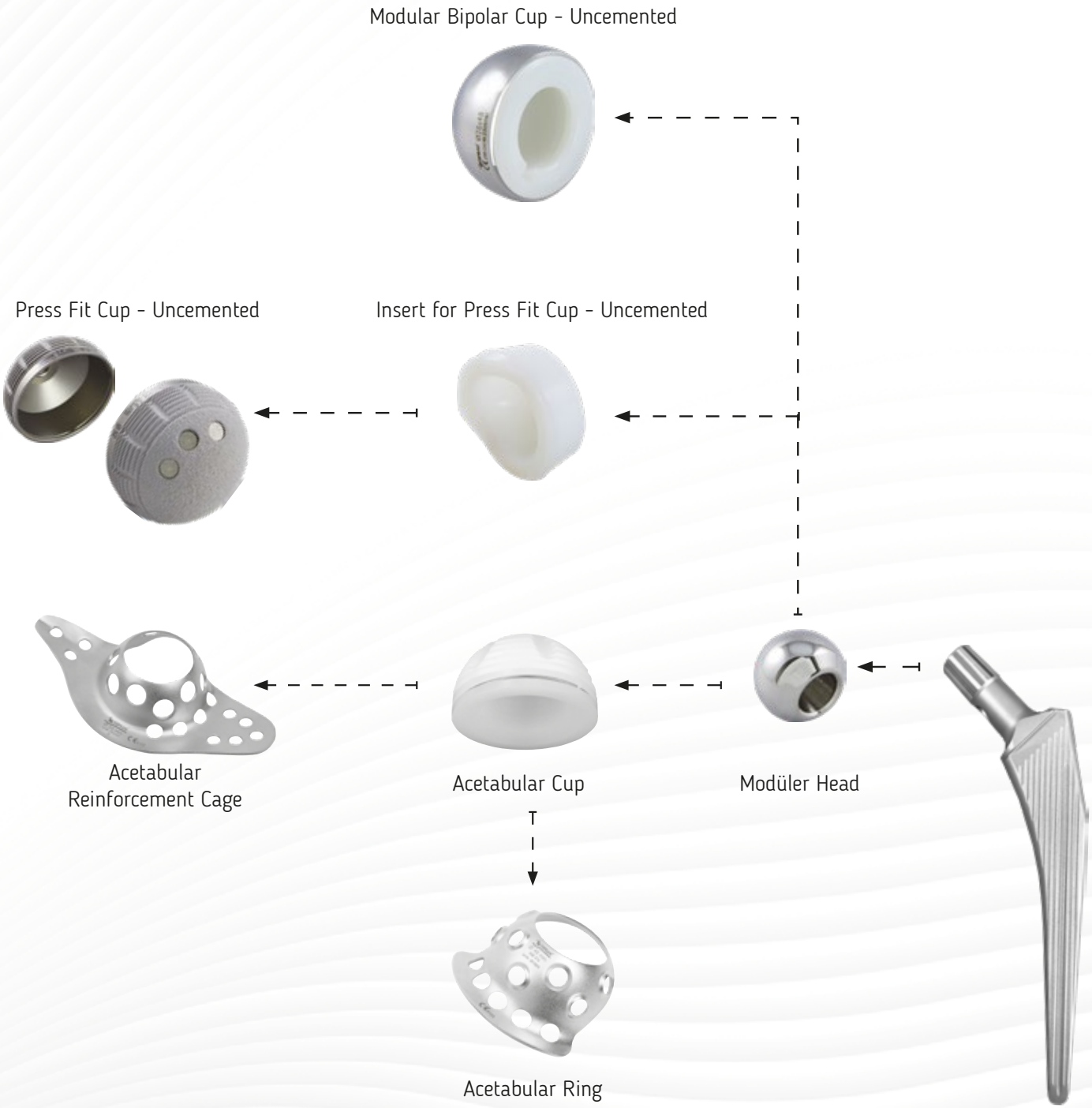
Check the fit and function.



Removal of the Stem

Use the ejection hole located under the neck and the Impact and Ejection Pin to remove the stem.

Combination Chart



TRAY 1

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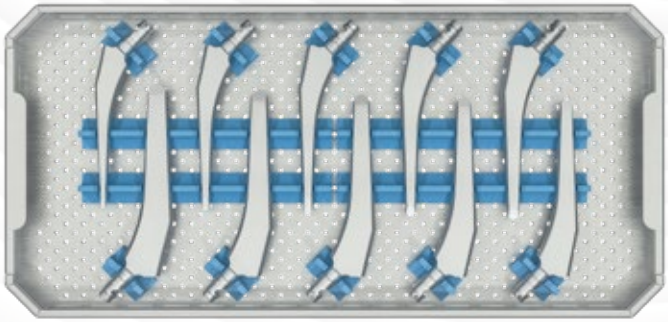

Code	Description	Unit
10610350050	Stem Rasp For Modular Straight Stem / 5,0 mm	1
10610350062	Stem Rasp For Modular Straight Stem / 6,25 mm	1
10610350075	Stem Rasp For Modular Straight Stem /7,5 mm	1
10610350087	Stem Rasp For Modular Straight Stem / 8,75 mm	1
10610350100	Stem Rasp For Modular Straight Stem / 10 mm	1
10610350112	Stem Rasp For Modular Straight Stem / 11,25 mm	1
10610350125	Stem Rasp For Modular Straight Stem / 12,5mm	1
10610350137	Stem Rasp For Modular Straight Stem / 13,75 mm	1
10610350150	Stem Rasp For Modular Straight Stem / 15 mm	1
10610350175	Stem Rasp For Modular Straight Stem / 17,5 mm	1

MODULAR STRAIGHT STEM
C E M E N T E D
Instrumentation Set

TRAY 2

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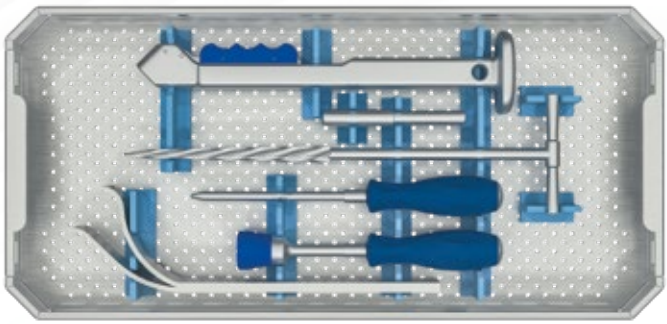

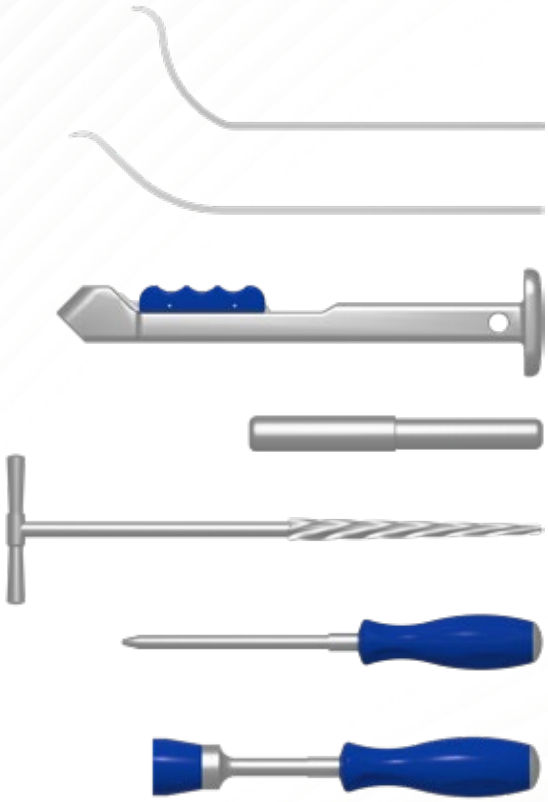

Code	Description	Unit
10602101101	Hohmann Retractor / Tip 1	1
10602101102	Hohmann Retractor / Tip 2	1
10610011050	Modular Rasp Handle	1
10610001001	Rasp Bar	1
10610331003	Medullary Awl Reamer	1
10607031321	Impactor Pin	1
10607020003	Femoral Head Impactor	1

TRAY 3

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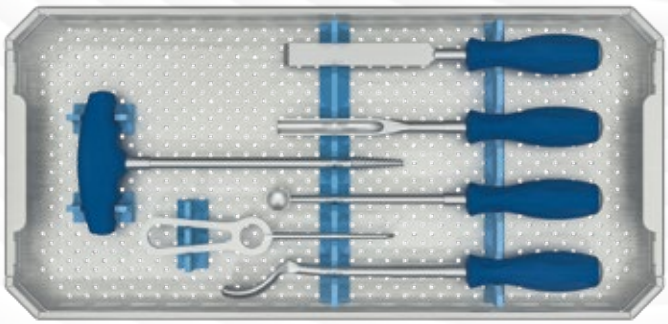

	Code	Description	Unit
	10605210002	Straight Chisel	1
	10605210103	Guj Curette	1
	10605210005	Spoon Curette	1
	10605210025	Spatul Curette Swan Neck	1
	10602041002	Bone Hook Blunt	1
	10606100001	Femoral Head Extractor	1
	10605021201	Ctph Chisel	1

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TIPSAN Tıbbi Aletler San. ve Tic. A.Ş.

Yunus Emre Mahallesi,
7404/1 Sokak No:3, 35060
Pınarbaşı, Bornova / İzmir - Türkiye

Tel : +90 232 479 5654
+90 232 479 8785
Fax : +90 232 479 5827

E-posta : pazarlama@tipsan.com.tr
export@tipsan.com.tr

www.tipsan.com.tr