



**AK**  
MEDICAL



# AK-SL-Cone Surgical Technique

# Development History

## Wagner Cone

This Product is designed by a German professor H. Wagner. At the beginning, Cone has only 135 °neck shaft angle, and first implanted in 1990, began official market promotion in 1992. The second generation product was launched in 2006, it's does not change the locking mechanism by design, by extending the length of proximal shoulder and longitudinal rib to increase bone unconformity, by reducing neck, shorten head / neck to gain greater freedom , and also the increase of 125 ° neck shaft angle to deal with varus.

# Indications and Contraindications

Applicable to distal fixation which is difficult to fix on proximal end

## Indications

Femoral deformity, difficult to use ordinary prosthesis for fixation

Simple revision surgery

## Contraindications

The most important contraindication is to ream the proximal medullary cavity like trumpet shape

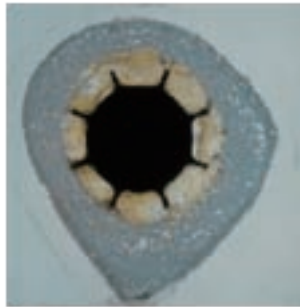
Can be fixed only at the distal end

# Design Principles

## Product Features:

2 neck shaft angle: 125°, 135°

Circular cross section,  
Freely adjust anteversion



5 ° taper shank body  
Neck Taper: 12/14

Titanium rough surface  
8 longitudinal ribs  
φ13 mm to φ24 mm

# Design Principles

## Trials Features:

- ▶ Trials have only 4 longitudinal ribs (not 8) will reduce bone injury
- ▶ The same size and design as the prosthesis
- ▶ Modular trials instruments can determine the product model more accurately, determine the anteversion accurately
- ▶ Trials instruments: There are 12 sizes of the distal trials, and can freely match with the proximal corresponding trials, there are two neck shaft angle for proximal trials: 125 ° and 135 °

## Advantages

- ▶ Can accurately control the depth of trial implantation, adjust anteversion freely
- ▶ Can use the trials for restoration
- ▶ More secure during surgery operation

# Preoperative Planning

- ▶ The premise of preoperative plan is to choose a better X-rays, the proportion of X-rays is 1.15: 1
- ▶ The most important is to select the stem diameter correctly
- ▶ The outermost contour of the prosthesis in template should be 1mm exceed to the femoral cortical bone innermost contour line



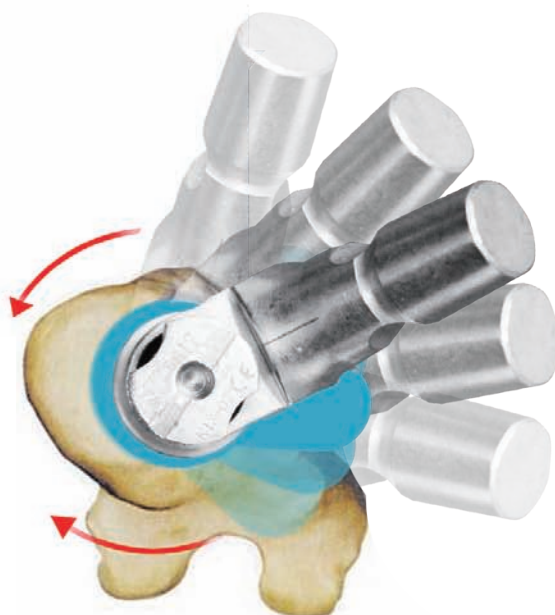
# Surgical Procedures

1 . Preparation of the femoral medullary cavity opening a sharp drill or mouth gag was used to remove osteophytes from the medial part of the greater trochanter and the lateral part of the femoral neck.



2. Prepare the femoral canal: ream the canal with reamer from small to big gradually until it encountered significant resistance.

3. Prosthesis trails selection: distal prosthesis trail diameter should be the same as the last reamer. Select the proximal prosthesis according to the neck shaft angle decided on preoperative planning. Assembly the prosthesis in vitro is recommended, insert the proximal prosthesis till a suitable location.



NOTE: If there is existed severe anteversion, adjust the proper anteversion of trials and mark with electrical knife, to ensure the accurate implantation direction of prosthesis.



5. Implantation: implants prosthesis without any instruments, using the impactor to impact the implant into final implanted position when you feel resistance, confirmed the determined depth in preoperative plan.

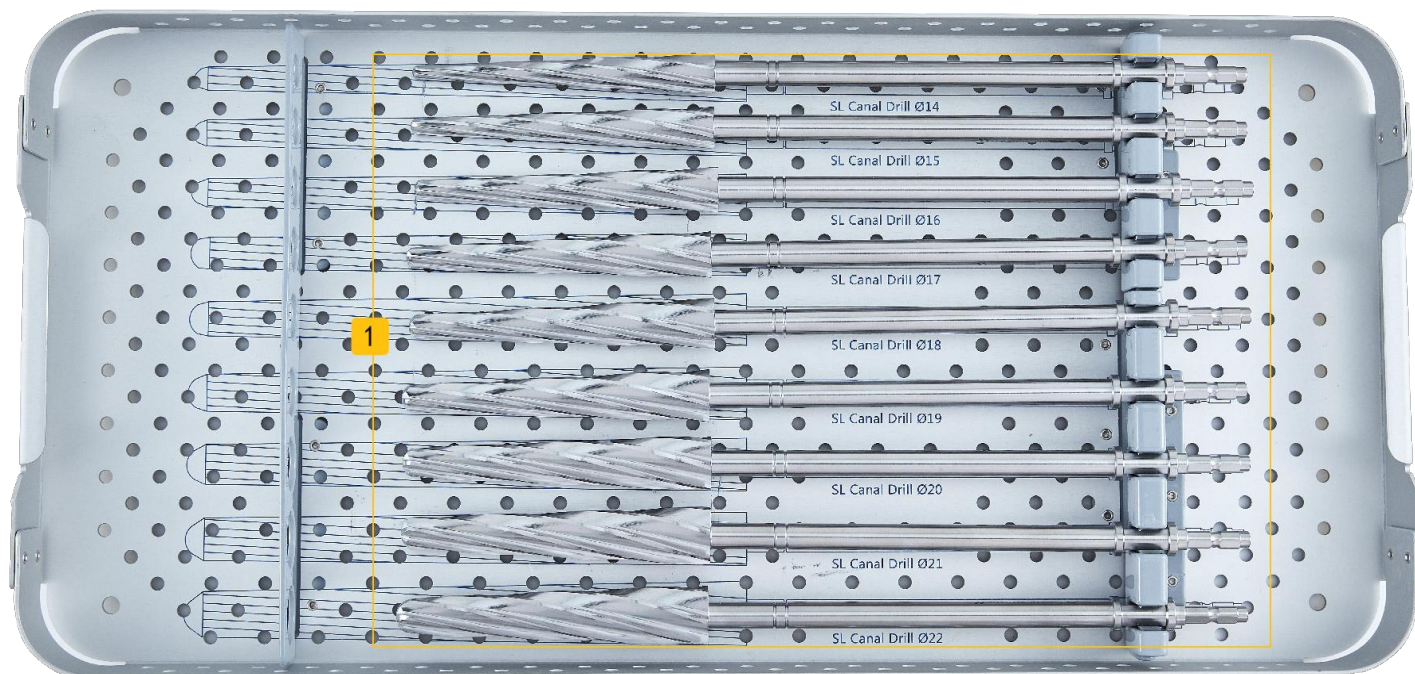


6. Using the femoral head trials to connect the prostheses again, to do restoration test. To check the articular stability, eccentricity, range of motion and legs length, etc.

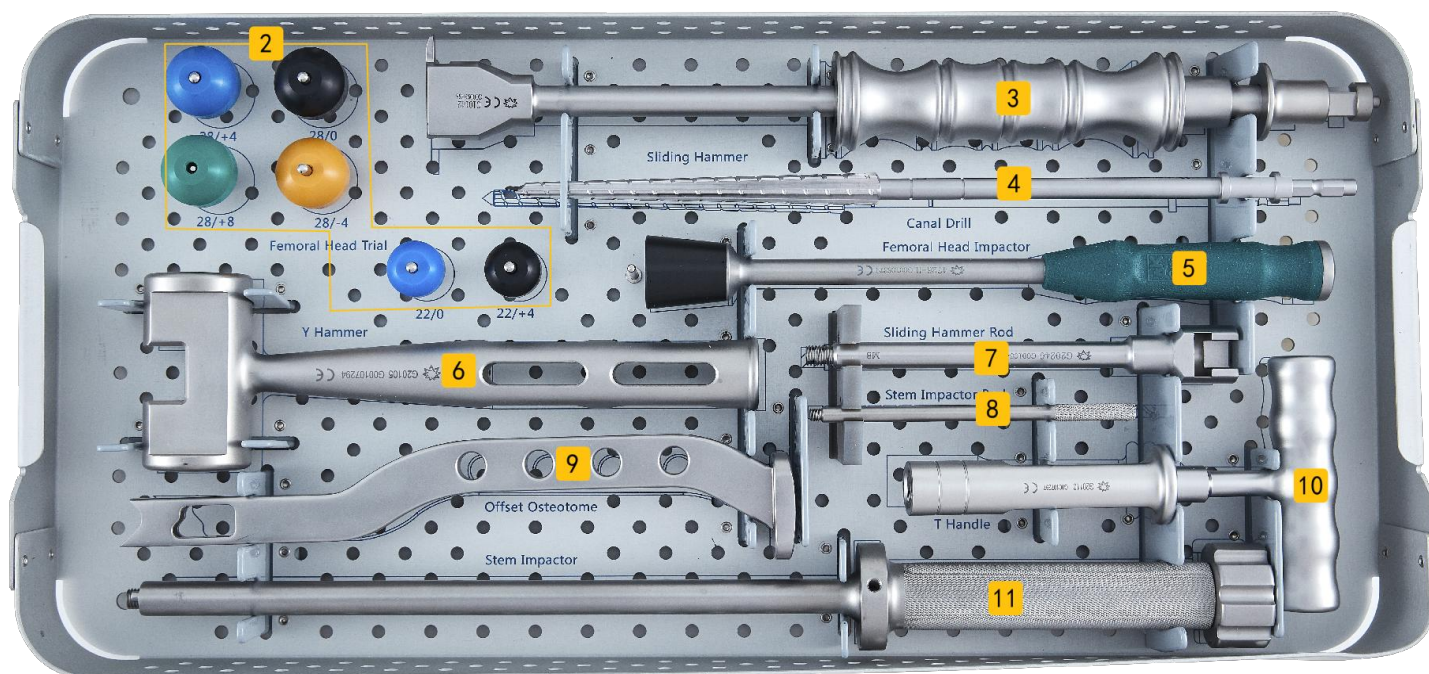


7. Remove the femoral head trials, and ensure the stem is clean and dry. Implant the selected femoral ball head prosthesis on the stem and using the impactor to make sure the firm fixation.

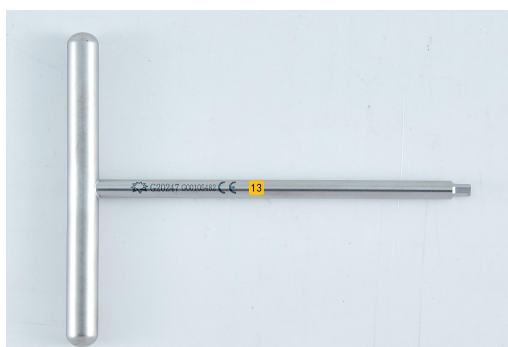
# Instruments Set



Reference No.	Specification
G20201	Canal Drill $\phi$ 13
G20202	Canal Drill $\phi$ 14
G20203	Canal Drill $\phi$ 15
G20204	Canal Drill $\phi$ 16
G20205	Canal Drill $\phi$ 17
1 G20206	Canal Drill $\phi$ 18
G20207	Canal Drill $\phi$ 19
G20208	Canal Drill $\phi$ 20
G20209	Canal Drill $\phi$ 21
G20210	Canal Drill $\phi$ 22
G20211	Canal Drill $\phi$ 23



Reference No.	Specification
2	G20111 Femoral Head Trial x2 22/0, 22/+4
	G20111 Femoral Head Trial x4 28/0, 28/-4, 28/+4, 28/+8
	G20111 Femoral Head Trial x4 32/0, 32/-4, 32/+4, 32/XL
	G20111 Femoral Head Trial x4 36/S, 36/M, 36/L, 36/XL
3	G10142 Sliding Hammer
4	8809 Canal Drill 00#-0#
5	4726-II Femoral Head Impactor
6	G20105 Y Hammer
7	G20246 Trial Extractor M6
	G20246 Trial Extractor M8
8 & 11	G20245 Stem Impactor
9	G20103 Offset Osteotome
10	G20110 T Handle



Reference No.		Specification	
12	G20118	Monoaxial Screwdriver	
13	G20247	Hex Wrench	
14	G20245-2	M8 Stem Impactor Rod	
15	G20223 ~ G20233	Cone Neck Trial	125° 13 ~ 125° 23
16	G20234 ~ G20244	Cone Neck Trial	135° 13 ~ 135° 23
17	G20212 ~ G20222	Cone Distal Stem Trial	φ13 ~ φ23
18	G20250	Trial Fixing Screw x22	