Custom Made Implant and Surgical Guides for Dog Knee Replacement

CANINE - Total Knee Replacement

more than **150** breeds

different **SIZES** of implants

CANINE - Total Knee Replacement

different
BREEDS
of dogs

different
SHAPES & SIZES
of the dogs

Can we have
150
different implants
?!

CANINE - Total Knee Replacement

Patient Specific Templates

(Custom Made Cutting Guide)

&

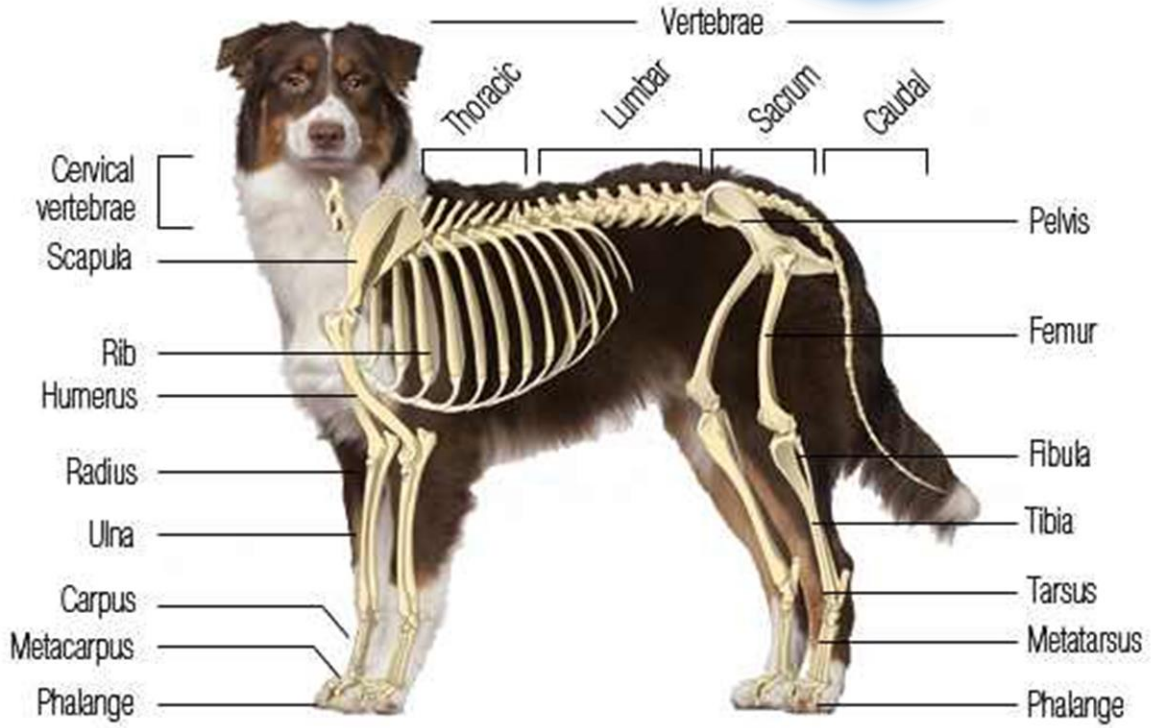
Patient Specific Implants

is Optimal Solution

CANINE - Total Knee Replacement

Dog
KNEE
anatomy

Anatomy
Skeleton
of dog



CANINE - Total Knee Replacement

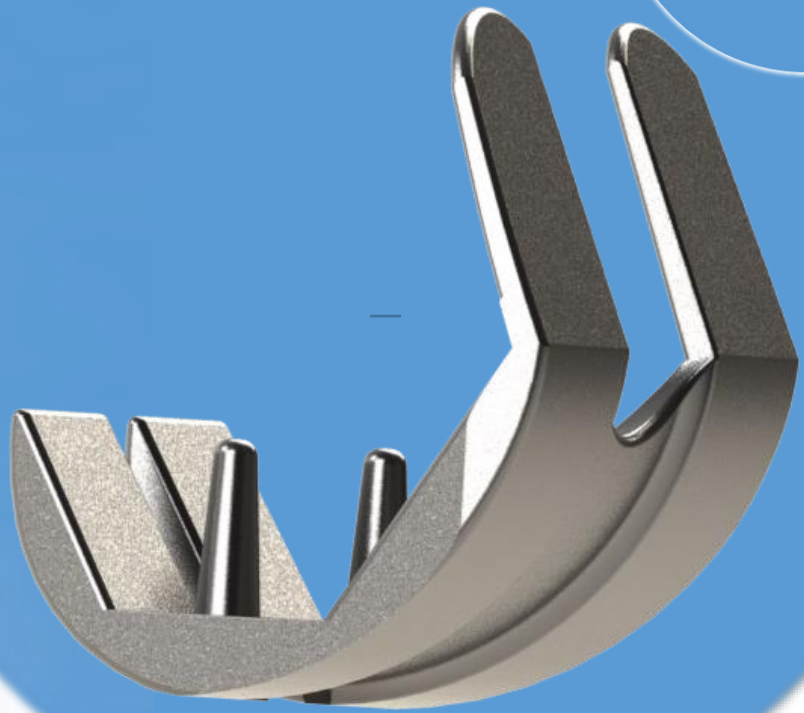
Dog
Tibial
template

Dog
Femoral
template

CANINE - Total Knee Replacement

Dog
Tibial
implant

Dog
Femoral
implant



CANINE - Total Knee Replacement

Anatomy of Dog Stifle (Knee)

CANINE - Total Knee Replacement

Steps for Appling PST & PSI

Step
1

apply a CT scan for dog knee
in a certain protocol

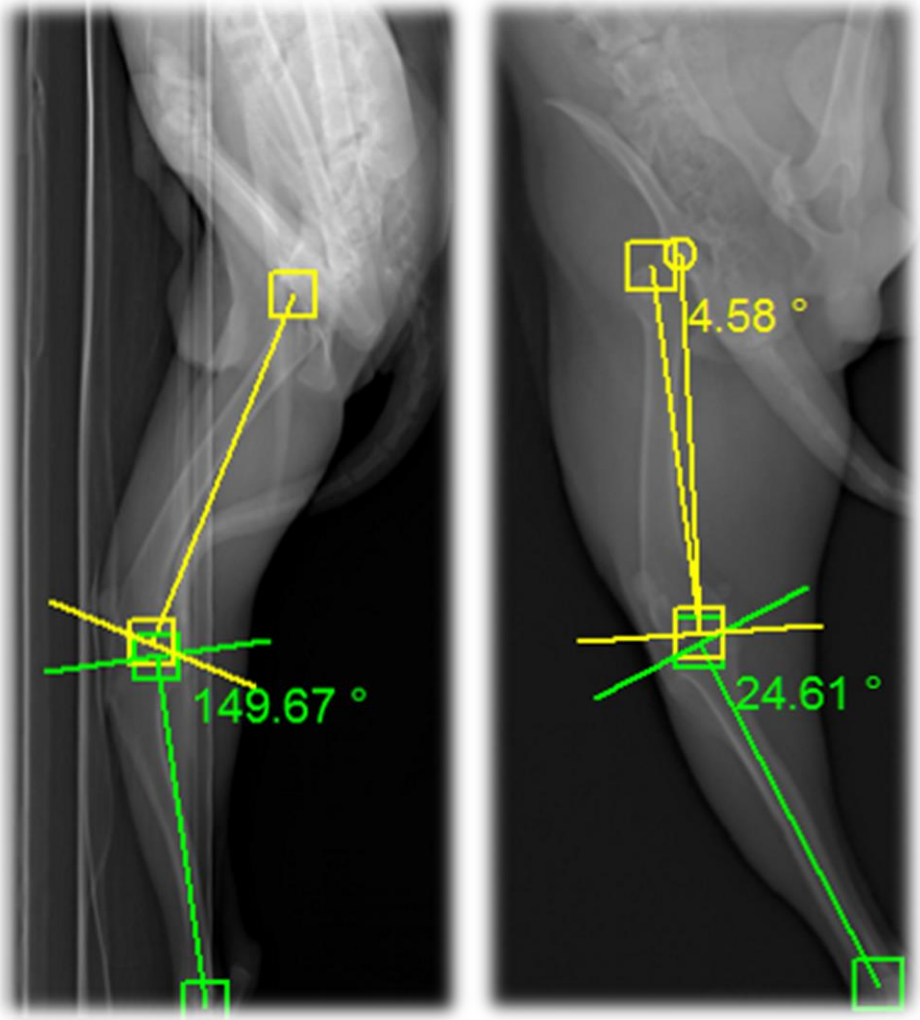
CANINE - Total Knee Replacement

Steps for Appling PST & PSI

Step
2

CT scans is imported to a special software system, where the planning of surgery is done.

DEFORMITY measures applied in advanced based on AP and ML x-ray

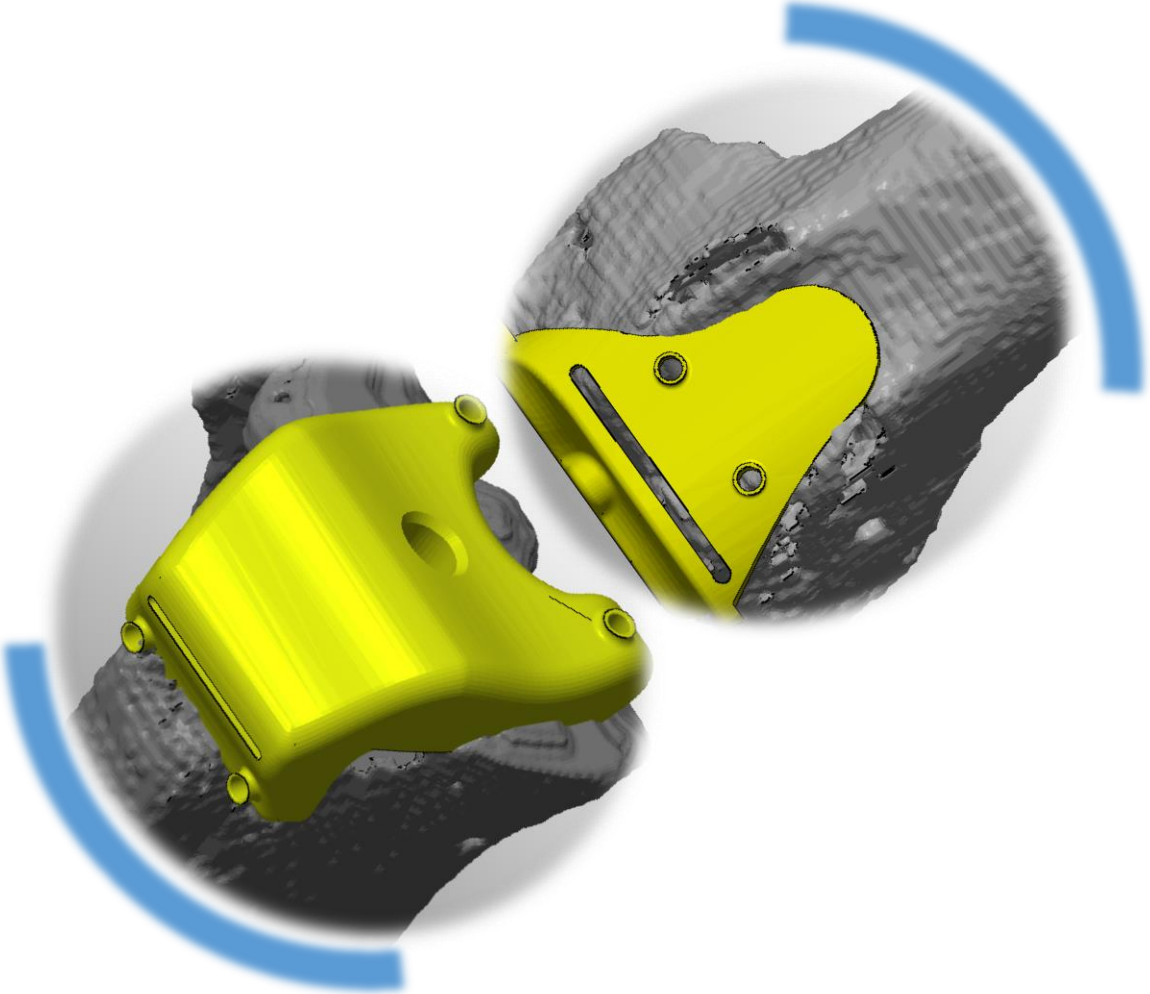


CANINE - Total Knee Replacement

Steps for Appling PST & PSI

Step
3

Reconstruct of **DICOM** to
3D Model.
Make a full surgery planning
on software



Steps for Appling PST & PSI

Step

4

PST & **PSI** are produced
to replace conventional
instrument & implants

CANINE - Total Knee Replacement

Case Details:

Sex: Male

Age: 1 year

CT scan date: Feb 15, 2015

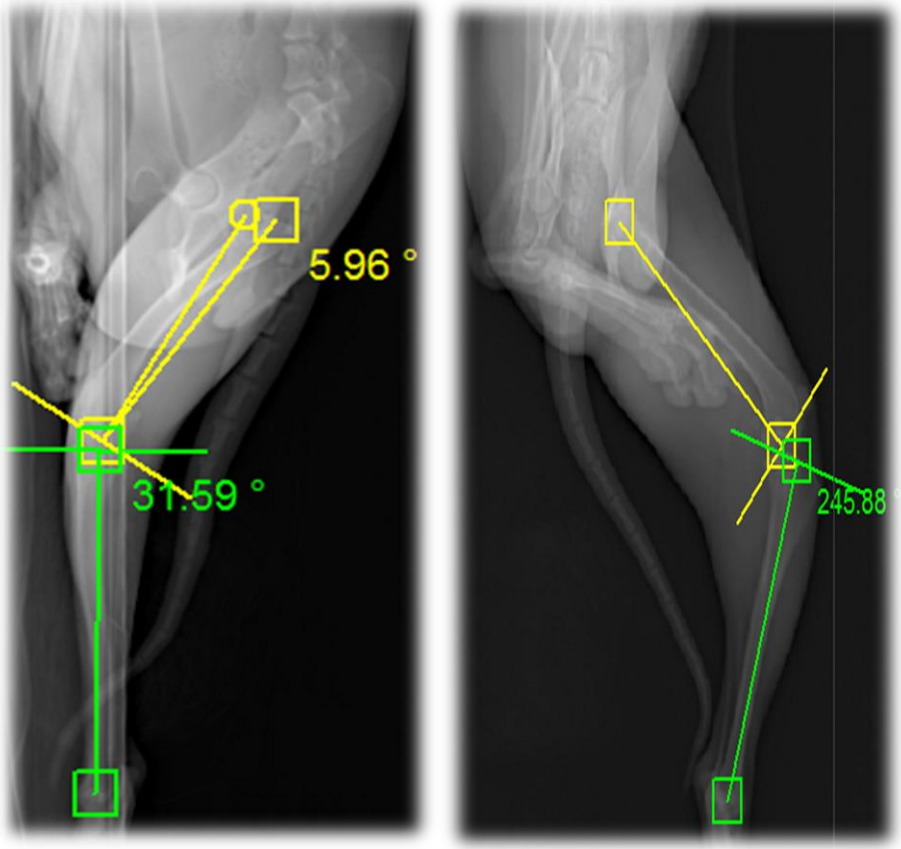
Case announced: Feb 15, 2015

Total Knee Replacement

CANINE - Total Knee Replacement

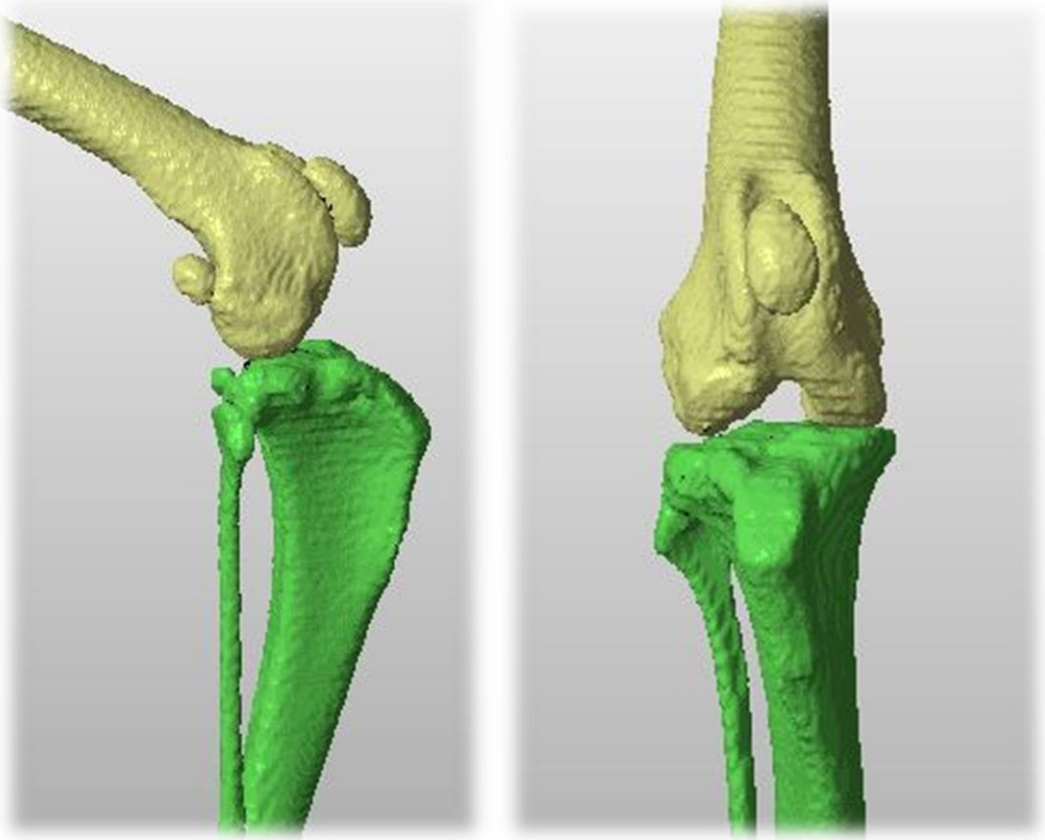
AP side of CT

ML side of CT

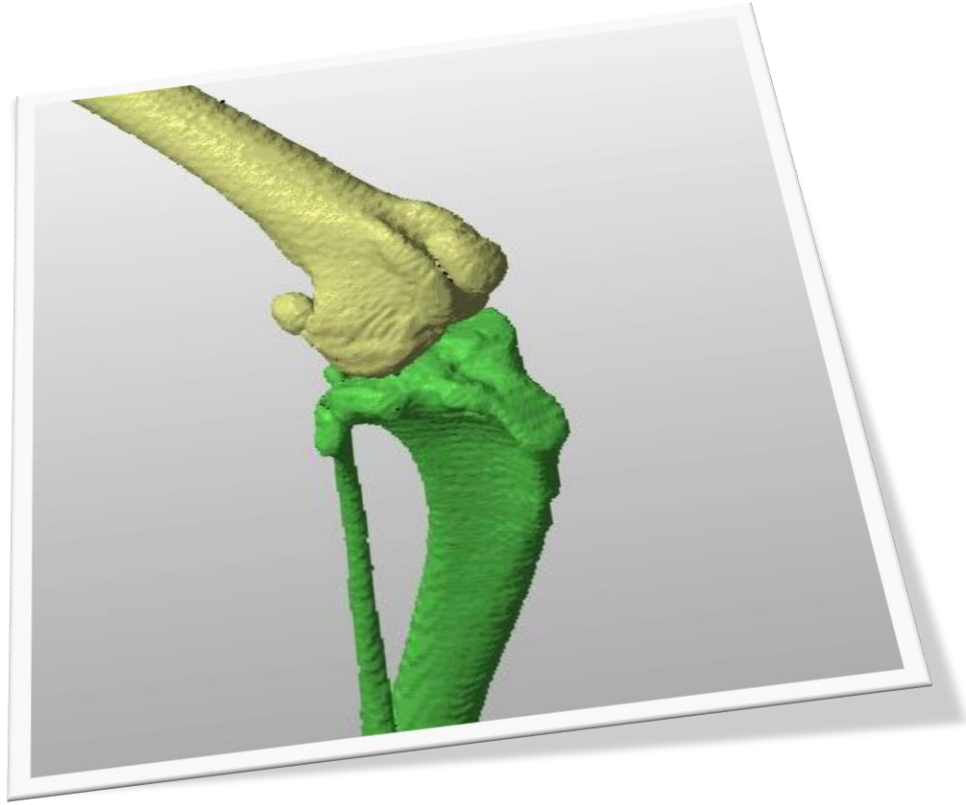


Preoperative CT scan

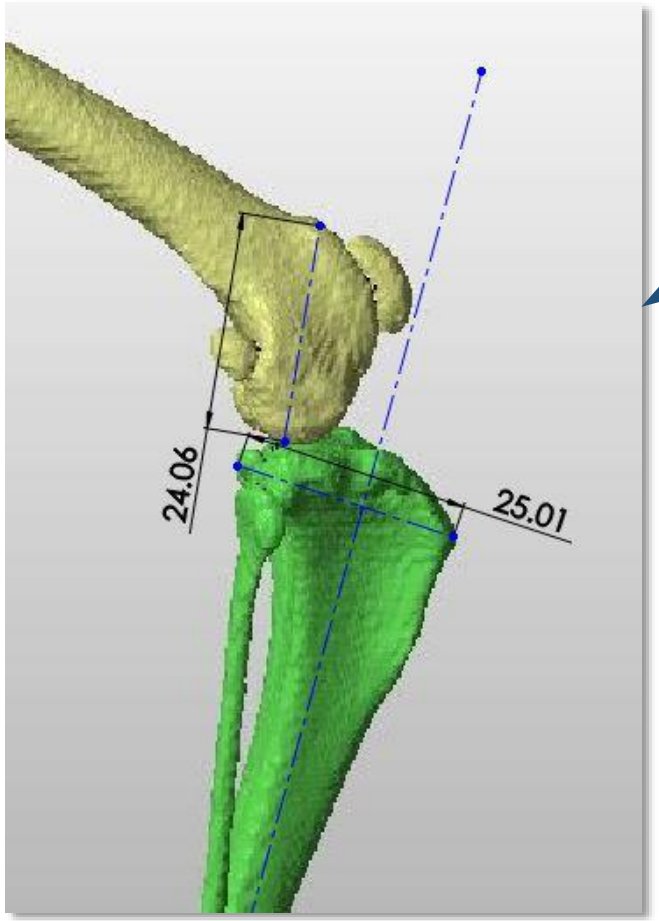
CANINE - Total Knee Replacement



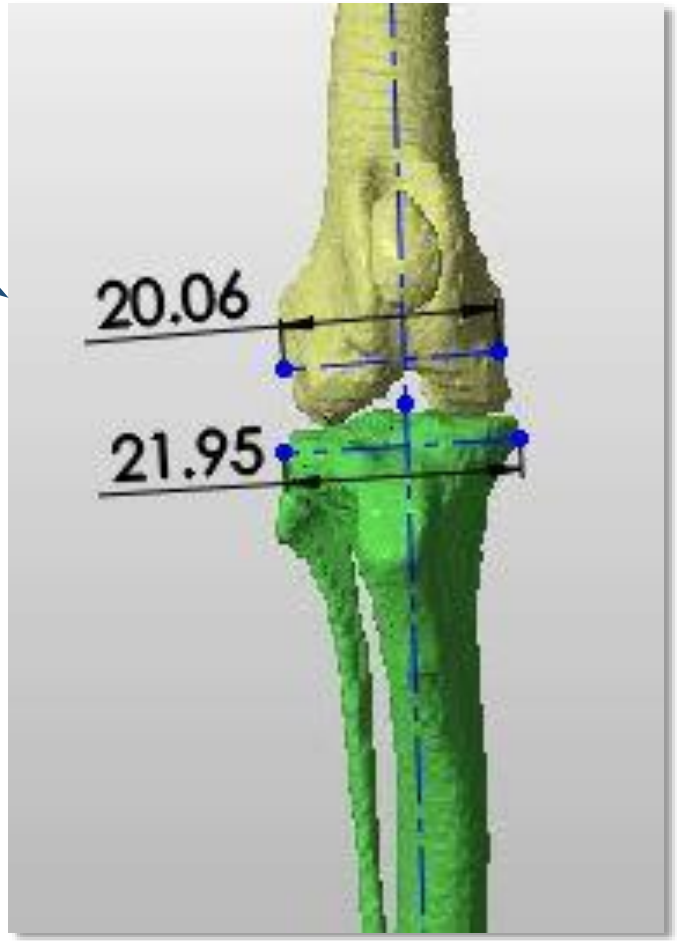
AP and ML views of femur and tibia
constructed from DICOM



CANINE - Total Knee Replacement

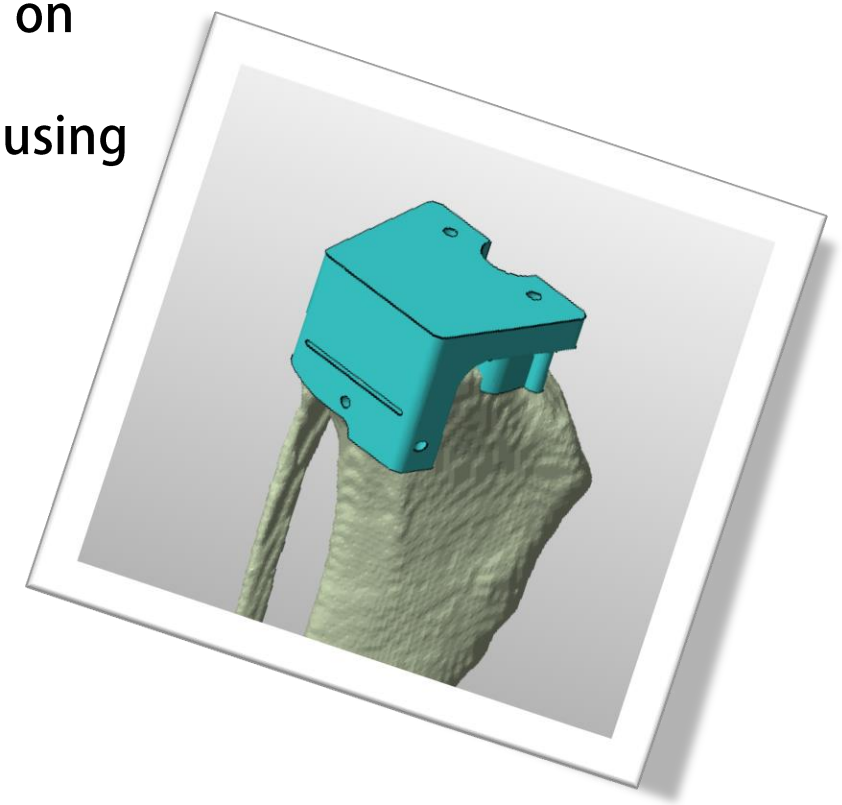


Main Dimensions in both AP and ML sides



CANINE - Total Knee Replacement

Mount the Tibial Cutting Guide (PST) on tibia plateau.
Fit with maximum bone surface area using of 4 holes.

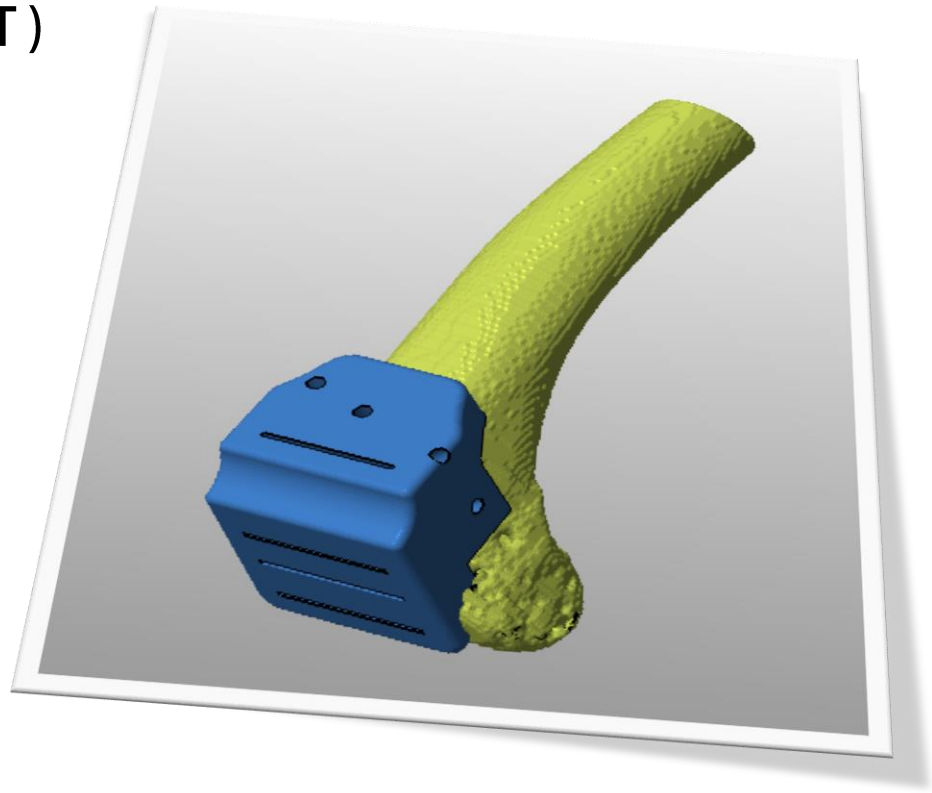


Distal cut was made using tibial PST.

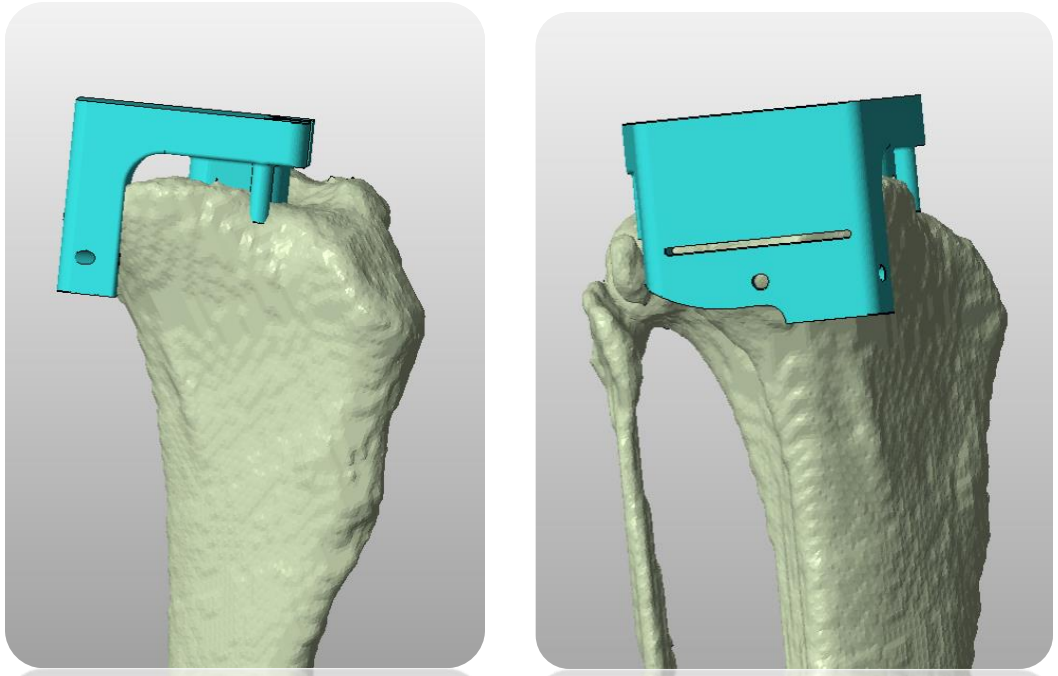
CANINE - Total Knee Replacement

Mount the Femoral Cutting Guide (PST) on medial femur side.
Fit with maximum bone surface area using of 4 holes (at least 2 facial holes with inclined one should be use)

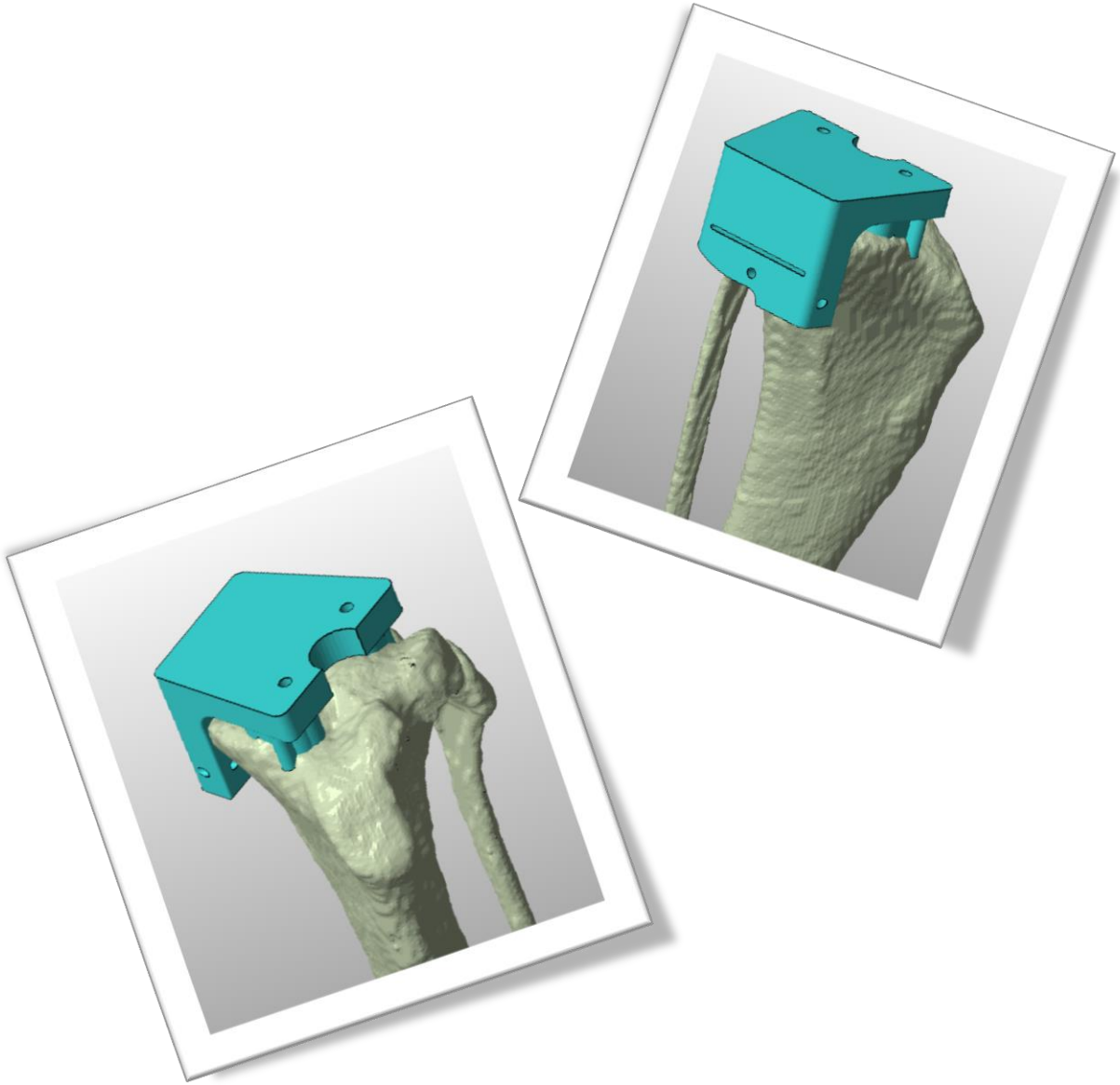
Distal cut is available with template , other 2 cuts could make by conventional femoral cutting block.



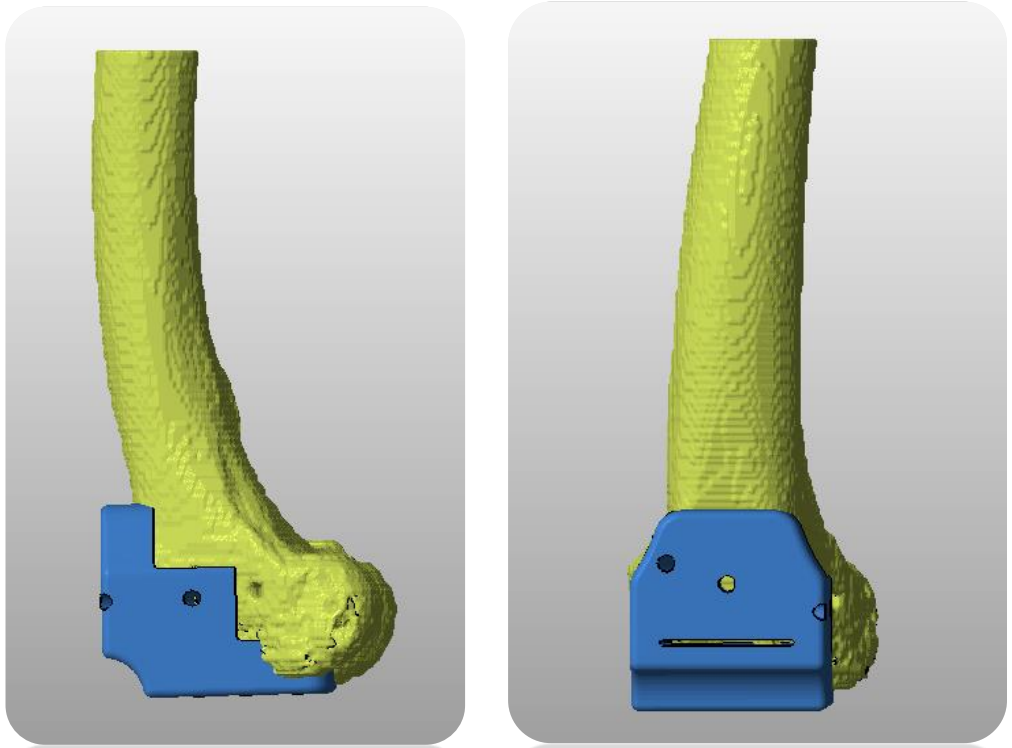
CANINE - Total Knee Replacement



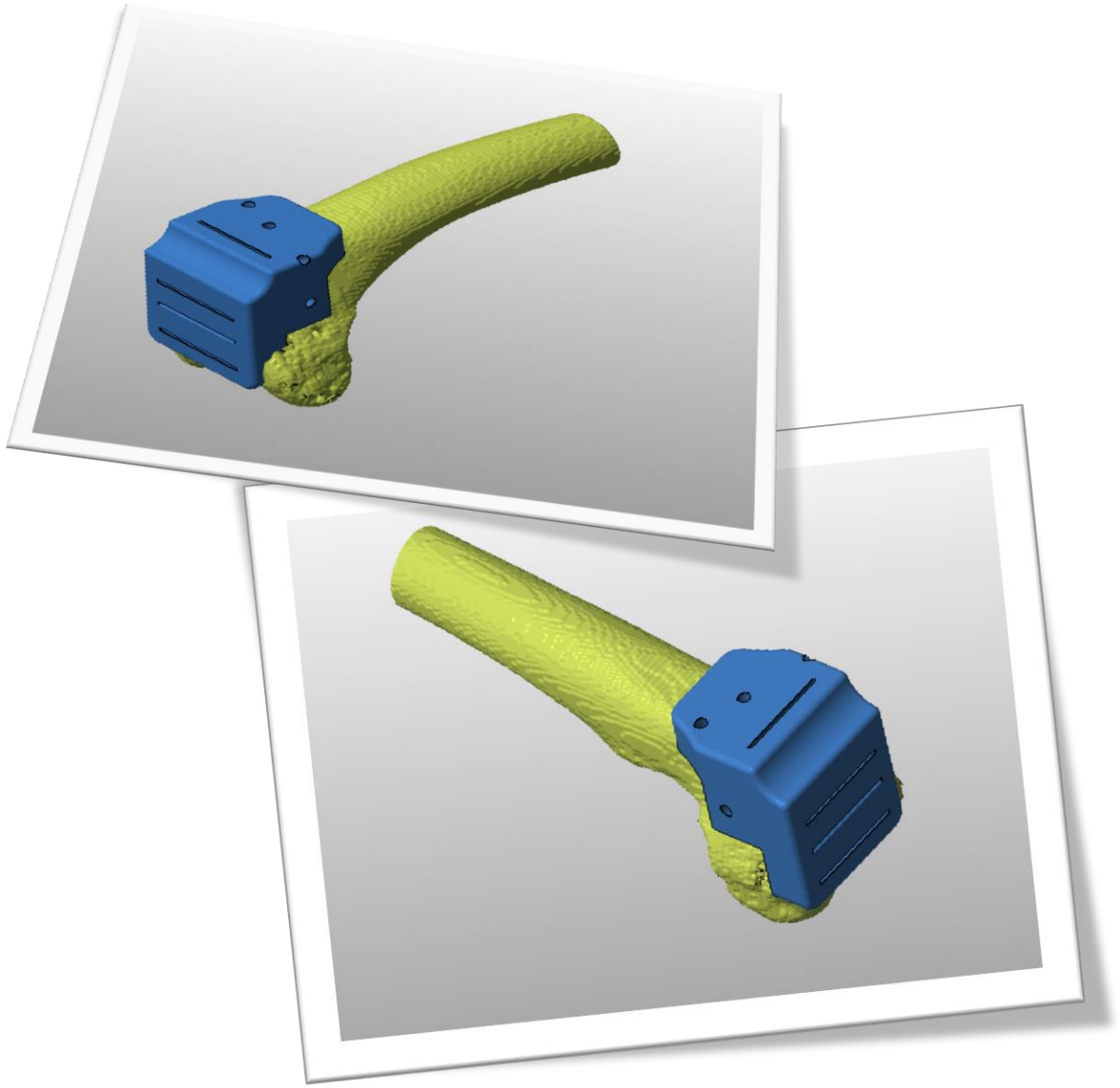
Tibial Custom Made Template match
with bone surface



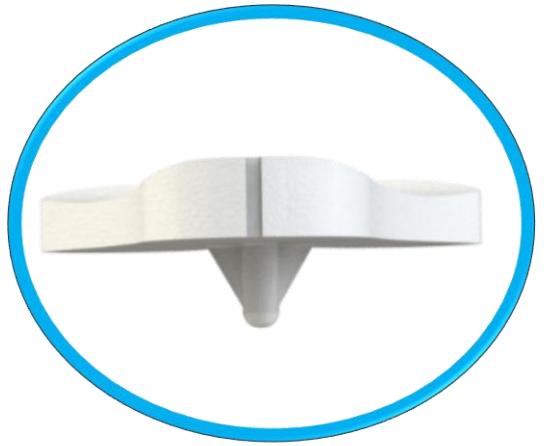
CANINE - Total Knee Replacement



Femoral Custom Made Template match with bone surface



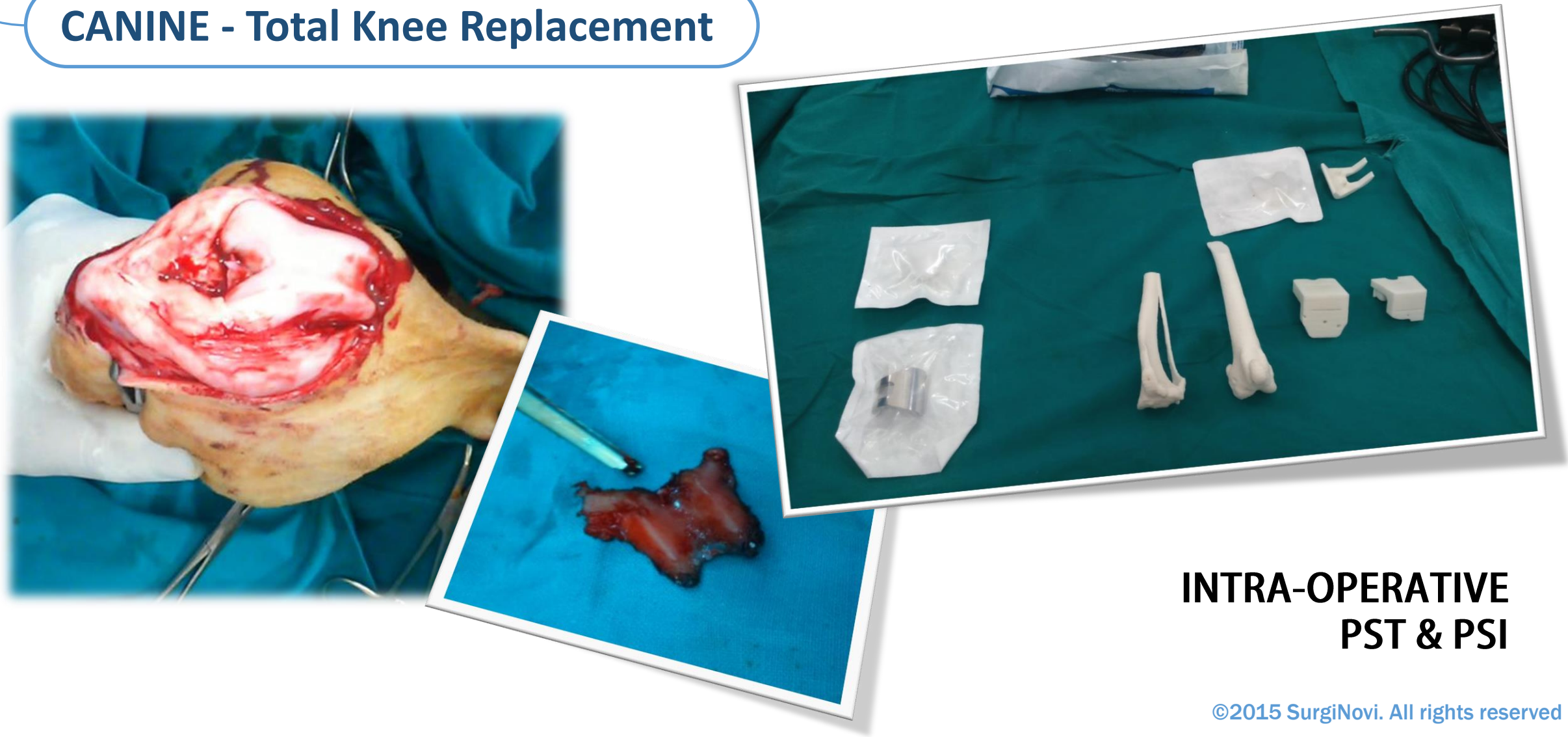
CANINE - Total Knee Replacement



Patient Specific Implant (PSI)

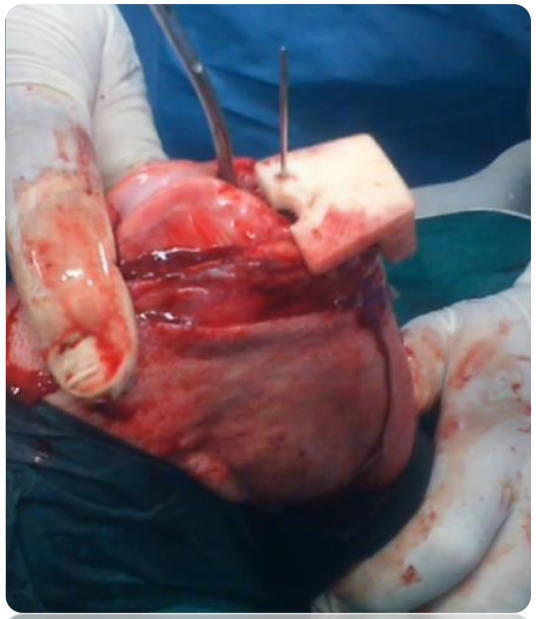
Tibial and Femoral Implants

CANINE - Total Knee Replacement



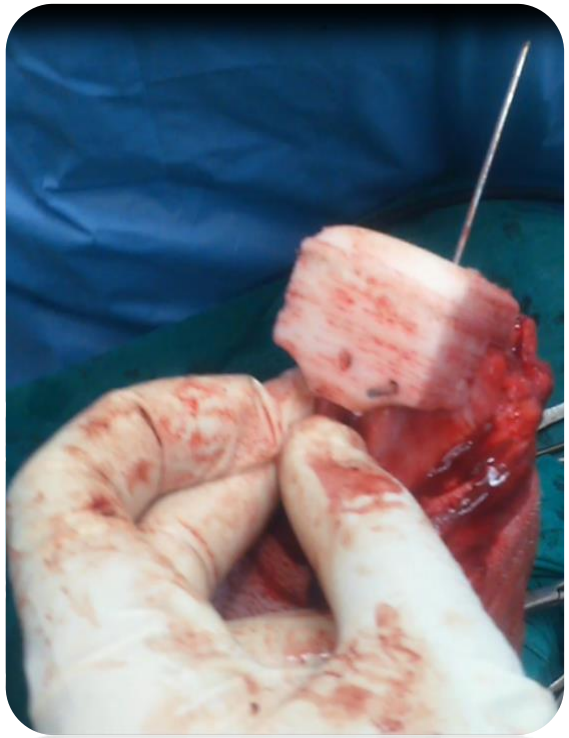
INTRA-OPERATIVE
PST & PSI

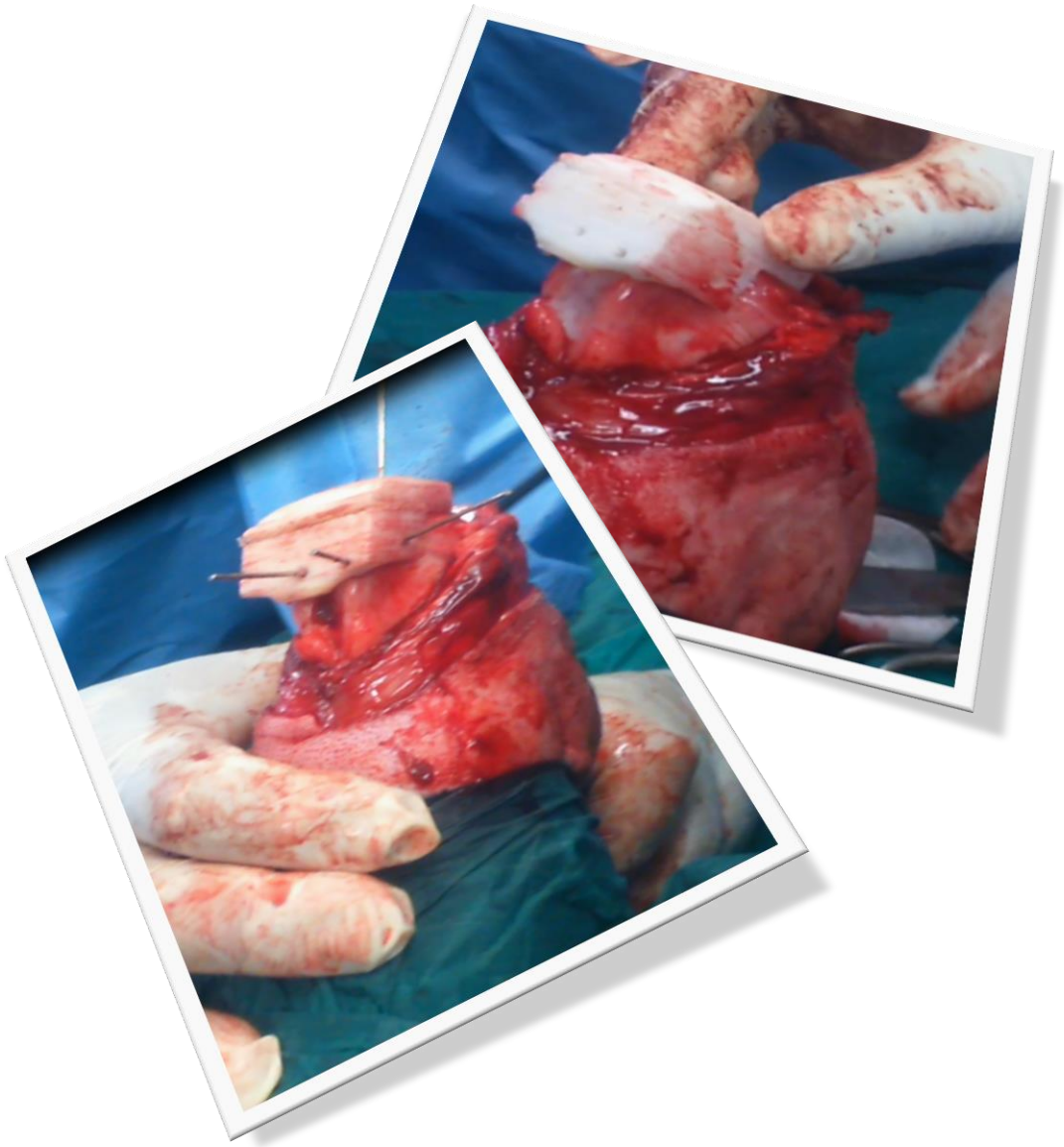
CANINE - Total Knee Replacement



INTRA-OPERATIVE
PST & PSI
Tibial Side

CANINE - Total Knee Replacement

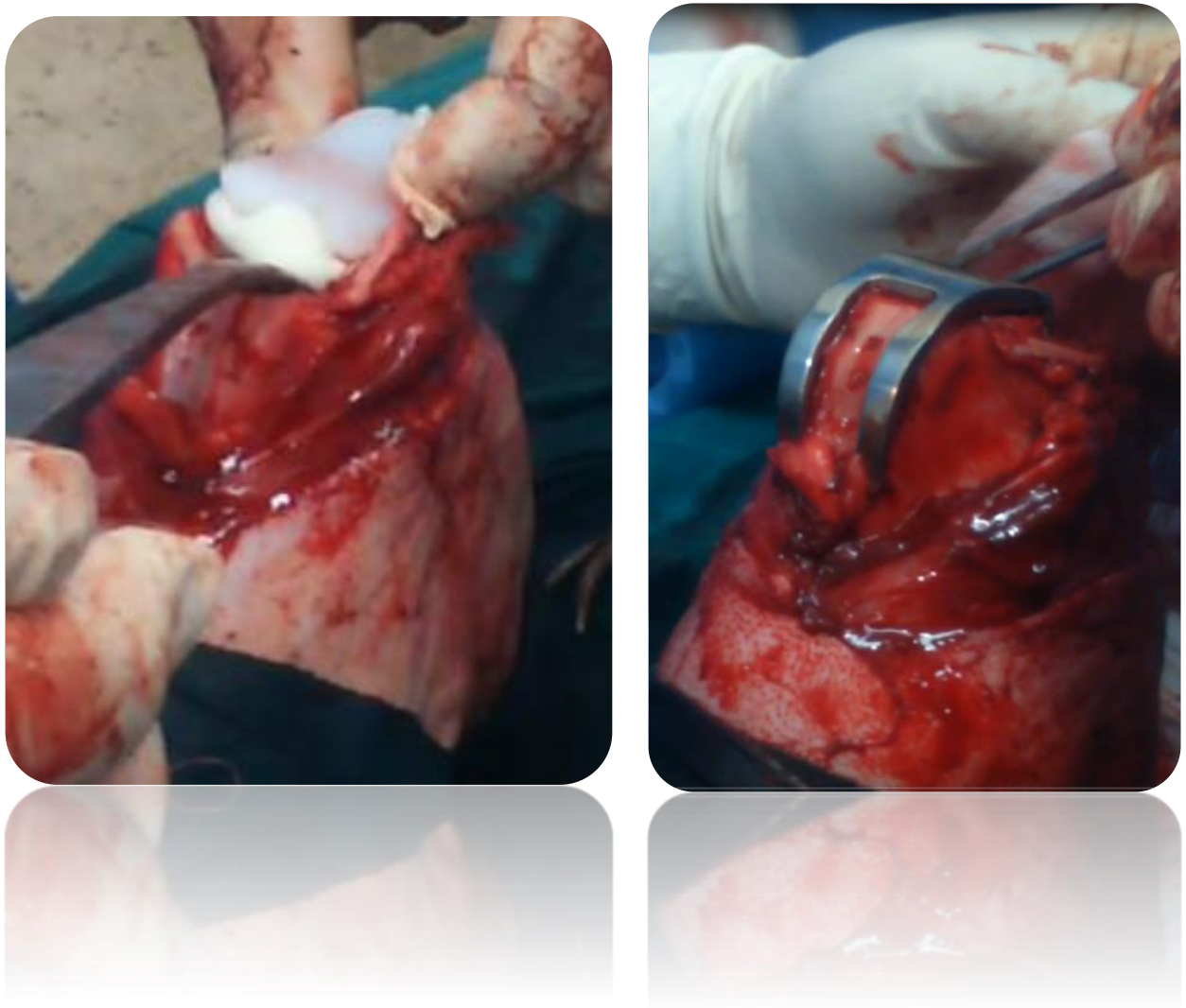




INTRA-OPERATIVE
PST & PSI

Femoral Side

CANINE - Total Knee Replacement



INTRA-OPERATIVE
PST & PSI

Tibial and Femoral Implants