Custom-Made Patient Instruments for Total Knee Replacement

PRODUCT RATIONALE
TRUMATCH Solutions program from DePuy Synthes Joint Reconstruction brings personalised Total Knee Replacement surgery to your OR, allowing you to work with custom-made femoral and tibial cutting guides individually prepared to match the alignment criteria and actual bone surfaces of each patient. The design software takes into account your own surgical preferences. With TRUMATCH Solutions, you are able to provide a knee treatment designed around the individual needs of your patients.
EFFICIENCY

Reduced surgical steps

Fewer standard instruments needed

Fewer instrument cases to resterilise

Designed to facilitate faster OR turnover

FUNCTION

Elimination of up to nine steps from the surgical workflow

Eliminates the need, and assembly, of the femoral IM rod guide, sizing guide and the tibial resection guide

Based on the patient’s mechanical alignment

WEAR RESISTANCE

3D plan of the whole leg structure

Facilitates proper implant placement and accurate alignment, a key factor in increasing survivorship

Determination of distal femoral and proximal tibial resection levels, varus/valgus alignment, femoral rotation and tibial slope
Dear Dr. Surgeon Name,

Please review the following patient proposal. On your DePuy Orthopaedics TRUMATCH® solutions website use the "Make Decision" button to select the appropriate status. Please contact DePuy Orthopaedics TRUMATCH® support if you have any questions or need further information.

Phone: 800-689-0746, 574-572-7129 or Email: TruMatchSupport@its.jnj.com

Use with HP instrumentation:

4-in-1 Cutting Block

**Patient Information:**
- Patient Name: [Name]
- Gender: M
- DOB: 22-MAR-1905
- Affected Side: Left
- Profile: Varus
- Reference Case #: CPMK00065
- Date: 11-OCT-2011
- Patient Special Consideration: For sawbone 1107-1

**Case Information:**
- Instrument Type: PFC SIGMA®
- Implant System: HP
- Femoral Component: Sz 4 CR L
- Tibial Component: Sz 3 CR Fixed Bearing
- Femoral Sizing Reference: Anterior Down
- External Rotation Reference: 0° from the Epicondylar Axis
- Distal Femoral Resection: 10.0 mm from the Most Distal Condyle
- Proximal Tibial Resection: 10.0 mm from the High Plateau
- Posterior Tibial Slope: 3°

**Notes/Comments:**

This section contains communications between the surgeon and designer.

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**Proposal Version: 1**

UPON YOUR APPROVAL, DEPUY ORTHOPAEDICS WILL MANUFACTURE THE TRUMATCH® INSTRUMENTATION OR ACCESSORIES BASED UPON THE INFORMATION SUPPLIED BY YOU. DEPUY HAS NOT VALUATED OR VERIFIED AND WILL NOT VERIFY OR VALIDATE THE ACCURACY OR APPROPRIATENESS OF THE INFORMATION SUPPLIED BY YOU AND DEPUY THEREFORE MAKES NO AND EXPRESSLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY OF ANY KIND RELATED TO ANY TRUMATCH® INSTRUMENTATION, TEMPLATES OR ACCESSORIES, INCLUDING WITHOUT LIMITATION ANY WARRANTY THAT SUCH INSTRUMENTATION, TEMPLATES OR ACCESSORIES ARE FIT AND SUFFICIENT FOR THE PURPOSE INTENDED.
Your patient's 3D anatomy data and your personal surgical preferences are used together to define the Patient Proposal.

DePuy Synthes Joint Reconstruction takes this information and then creates a Patient Proposal based on mechanical alignment.

The TRUMATCH Solutions website allows you to review, approve, change, re-design or cancel any Patient Proposal at any stage of the process.
With a three-dimensional plan of the whole leg structure, the TRUMATCH Solutions team of engineers will model resection guides to provide mechanical alignment through the new total knee. These will determine distal femoral and proximal tibial resection levels, varus/valgus alignment, femoral rotation and tibial slope.

Implant survivorship is strongly driven by implant design and correct implant alignment. Proper alignment is enabled by a combination of surgical skill and precise instrumentation.
DePuy Synthes Joint Reconstruction  TRUMATCH Cutting Guide  Product Rationale

THE SEAMLESS TRUMATCH SOLUTIONS PROCESS

Patient Imaging
Following an assessment and recommendation from the surgeon, the TRUMATCH Solutions process begins with a CT scan of the whole leg, from hip to ankle, per a defined TRUMATCH Solutions scanning protocol. The CT scan is conducted at a certified imaging centre (local to the surgeon) and electronically forwarded to our TRUMATCH Solutions team. The team confirms the quality of the scan and creates a new patient record for later submission by the surgeon’s office.

Case Submission
Through a simple web interface, the surgeon’s office finalises the pertinent case information and submits the order to the TRUMATCH Solutions design team. Immediately, the system provides the delivery date of the finalised blocks. Surgery can be scheduled any time thereafter, up to 120 days from date of manufacturing. The case information is collated with the patient’s information and the surgeon’s surgical preferences already recorded in the system. Together with the implant geometry, the TRUMATCH Solutions design team prepares a customised patient proposal.

Image Processing and Patient Proposal
Using proprietary software, the TRUMATCH Solutions design team creates a complete three dimensional model of the whole leg structure, that combines with the patient’s information and the surgeon’s surgical preferences to create a customised patient proposal. The patient proposal includes information such as distal femoral and proximal tibial resection levels, varus/valgus alignment, femoral rotation and tibial slope.
Patient Proposal Approval

An e-mail alerts the surgeon when the case specific patient proposal is ready for his/her comment and approval. The surgeon is then able to visit a password protected area of the TRUMATCH Solutions website to make, if necessary, any revisions and must approve the proposal.

Instrument Preparation and Kit Consolidation

Once the surgeon approves the details of the proposal, preparation of the customised patient instruments takes place within our dedicated manufacturing centre. Individual patient name and data are etched on each instrument, to confirm identification in the OR. Stainless steel guides within the plastic blocks are designed to minimise particle generation during bone cutting.

Delivery and Surgery

The TRUMATCH Solutions resection guides are delivered sterile. The guides are delivered on, or prior to, the stated delivery date communicated during the case submission step. Surgery can take place any time thereafter up to 120 days from date of manufacturing.
References

1. TRUMATCH efficiency case study. Harvey R, Wirral University Teaching Hospital Trust, Aug 2012 – Cat No. 9095-77-000


The patient-specific components of TRUMATCH are custom-made medical devices within the EU Council Directive 93/42/EEC.