Mpact® SYSTEM

HEMISPHERICAL CEMENTLESS CUPS

EVOLVING SAFETY

Brochure

Joint | Spine | Sports Med

Medacta International

Mpact System is a **comprehensive hemispherical cup platform** featuring different **shell and liner designs and materials** allowing for efficiently treating the majority of the clinical cases **from primary to revision** surgeries, according to patients' needs.

1 ADVANCED MATERIALS

2 COMPREHENSIVE PRODUCT RANGE

3 FIRM LINER LOCKING MECHANISM

1 ADVANCED MATERIALS: OPTIMAL PRIMARY STABILITY AND SECONDARY FIXATION

The Mpact system makes use of different **advanced materials** and **manufacturing technologies**.
Both MectaGrip and 3D Metal allow for designing and manufacturing implants featuring a **high friction coefficient**, increasing grip at the bone interface, thereby obtaining a **superior primary stability**.[2] Moreover, the porous structure parameters in line with the **commonly accepted parameters**[2,5] create a favorable environment for the bone.[6,7,8,9] The efficient connection with the bone has been validated by means of an animal study in young sheep.[2]

MectaGrip

MectaGrip is a **porous coating treatment** applied to the Mpact shells, consisting of a layer of commercially **pure titanium** deposited through a special **Vacuum Plasma Spray technique (VPS)**. Titanium porous coating allows for an **enhanced biocompatibility**, thanks to the **pure titanium composition** and **optimized porosity**.

3D Metal

3D Metal is an **advanced biomaterial structure** that is **finely engineered for the bone**. It is made of Titanium alloy (Ti6Al4V), and it is obtained by means of 3D printing technology, an innovative **one-step layer-by-layer** additive manufacturing process (not a coating).

This advanced technology allows for designing different **engineered 3D net structures** starting from a **CAD model** in a **precise**, **predictable** and **reproducible** manner. By means of a **single technology** it is possible to efficiently face most clinical cases, from **standard primary** to **complex revision** surgeries.

2 COMPREHENSIVE PRODUCT RANGE

SEVERAL SHELL VERSIONS

NO-HOLE

MectaGrip
from size 42 mm
to size 66 mm

TWO-HOLE

MectaGrip
from size 42 mm
to size 66 mm

3D Metal
from size 46 mm
to size 66 mm

MULTI-HOLE

MectaGrip
from size 42 mm
to size 76 mm

3D Metal
from size 46 mm
to size 76 mm

3D Metal MULTI-HOLE THIN
from size 48 mm
to size 60 mm

The MULTI-HOLE SHELLS allow for the use of cancellous bone screws in 13 to 17 locations (size dependent) on the dome and equatorial region

RIM-HOLE

MectaGrip
from size 56 mm
to size 76 mm

The RIM-HOLE SHELL allows for the use of cancellous and cortical bone screws

CANCELLOUS BONE SCREW

Ø 6,5 mm from L 15 mm to L 70 mm

CORTICAL BONE SCREW

Ø 4 mm from L 25 mm to L 55 mm
Compatible with Rim-hole only

COMPRESSION POLYAXIAL LOCKING SCREW

Ø 6,5 mm from L 15 mm to L 70 mm
Compatible with Multi-hole only
(non-Thin version)

COBALT-FREE DOUBLE MOBILITY

DM CUP

MectaGrip coated High Nitrogen Stainless Steel
from size 42 mm to size 66 mm

DM LINER

UHMWPE Highcross

SENSITIN DM CONVERTER

TiN coated HNSS metal liner
(Titanium Nitride ceramic-like coating)
compatible with **all Mpact System cups**

MULTIPLE BEARING OPTIONS

UHMWPE HIGHCROSS LINERS

Flat

Hooded

Offset 4 mm

Face-changing 10°

CERAMIC LINERS

Compatible with No-hole, Two-hole and Rim-hole

3 FIRM LOCKING MECHANISM

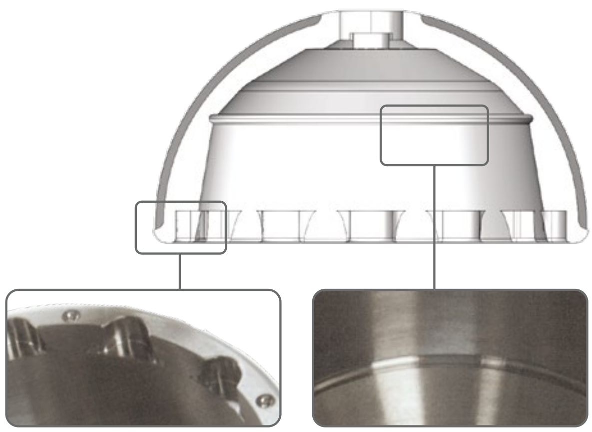
Mpact system features **multiple bearing options** characterized by **optimized locking mechanisms**.

Highcross UHMWPE Liners

Clipping system + anti-rotation tabs

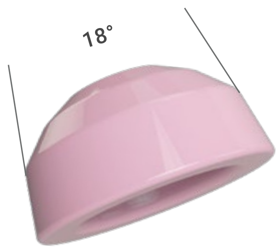
The **clipping system** for the **polyethylene liners** is placed outside the equatorial weight-bearing area in the thickest region of the liner. This design **reduces stresses** at the liner/shell interface and **minimizes the risk of the liner rim fracture** in case of impingement.[1]

Therefore, the match between the **anti-rotation tabs** in the liner and the **indentations** on the shell **limits rotational micro-movements and potential backside wear**.[2,3]



Ceramic Liners

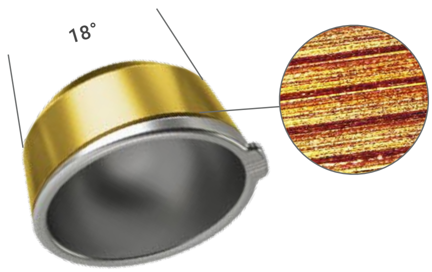
18° taper locking system



18° taper angle has been demonstrated to have a **lower malseating rate** if compared to different ceramic taper angle versions.[3,4] This **tapered surface** has been **successfully** adopted for all Medacta cups **since 2005**.[2]

SensiTiN DM Converter

18° taper locking system + micro-threads



The SensiTiN DM Converter **tapered surface** shows the **same** geometrical characteristics as the clinically successful Medacta ceramic liner. **Micro-threads** are also present on the tapered surface to **increase stability** of the device.

REFERENCES

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Mpact® System Leaflet
ref: 99.70SYS.11
rev.00
Last update: August 2022