Excia® T

Standard Hip System Surgical Technique

Aesculap Orthopaedics

AESCULAP®
Implant Systems

Excia® T

Standard Hip System Surgical Technique

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I. Indications for Use, Contraindications, Warnings and Potential Risks

Indications for Use

The Excia® Hip is intended to replace a hip joint.
The device is intended for:

- Patients suffering from severe hip pain and disability due to rheumatoid arthritis, osteoarthritis, traumatic arthritis, polyarthritis, collagen disorders, avascular necrosis of the femoral head and nonunion of previous fractures of the femur
- Patients with congenital hip dysplasia, protrusion acetabuli or slipped capital femoral epiphysis
- Patients suffering from disability due to previous fusion
- Patients with acute femoral neck fractures

The Excia Hip System is available with two (2) femoral stems. One is manufactured from CoCr and intended for cemented fixation. The other femoral stem is for uncemented fixation and is manufactured from Ti with Plasmapore® with or without µ-CaP.

WARNING: Only Ti plasma sprayed (Plasmapore) components should be implanted without cement. All other devices are designed for use with bone cement.

Contraindications

Contraindications include, but are not limited to:

- Presence of fever, infection or inflammation (systemic or localized)
- Morbid obesity
- Pregnancy
- Mental illness or drug abuse
- Severe osteopenia (or any medical or surgical condition) which would preclude potential benefits of implants
- Suspected or documented metal allergy or intolerance
- Mixing of implant components from other manufacturers
- Any case not listed in the indications
- Patients unwilling or unable to follow postoperative care instructions; and
- Skeletal immaturity

Warnings and Potential Risks

The Excia implants are designed for **single patient use only and must never be reused.** As with all other orthopedic implants, the Excia components should never be re-implanted under any circumstances.

The mixing of different manufacturer implant components is not recommended due to metallurgical, mechanical and functional reasons. Dissimilar metals in contact with each other can accelerate the corrosion process due to galvanic corrosion effects. Do not use implants or instruments from other systems or manufacturers.

Excia ceramic heads should only be used with the Ti plasma sprayed femoral stem.

The Excia implants can become loose or break if subjected to increased loading. Factors such as the patient's weight, activity level and adherence to weight-bearing or load-bearing instructions can affect the implant's longevity. Damage to the weight-bearing bone cement and/or bone structures caused by infection can give rise to loosening of the components and/or fracture of the bone.

The Excia implants have not been evaluated for safety and compatibility in the MR environment. The Excia implants have not been tested for heating or migration in the MR environment.

These warnings do not include all adverse effects which could occur with surgery, but are important considerations specific to metallic devices. The risks associated with orthopedic surgery, general surgery and the use of general anesthesia should be explained to the patient prior to surgery. See the PRECAUTIONS and POSSIBLE ADVERSE EFFECTS sections for additional warnings.

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II. System Overview

Based upon the Excia Standard Hip Stem, which has been clinically successful as a pressfit and cemented stem system for over 12 years, Excia T has been designed with enhancements that accurately restore joint biomechanics and address the growing demand for bone conservation.

Anchoring

Proximal flanges combine with the dual-taper wedge design to ensure high primary stability.

Anatomic Accuracy

- Lateralized option addresses femurs with a more varus neck by allowing for additional offset to properly restore joint biomechanics and soft tissue tension ensuring exceptional joint stability.
- Slim distal design is suitable for various femoral morphology including narrow femoral canals, therefore reducing the risk of distal impingement.

Bone Preservation

Minimal rounded shoulder design decreases disruption of the greater trochanter.

Minimally Invasive Techniques

A rounded shoulder design that curves away from the greater trochanter facilitates insertion through all approaches.

Pressfit Stem

Plasmapore rough coating provides scratch-fit stability
**pressfit option only*

Survivorship

The Plasmapore® coating technology is a microporous Ti-plasma spray rough coating. The enhanced surface encourages biological fixation through osteoconduction to ensure long-term survivorship. Aesculap has over 25 years applying Plasmapore technology to orthopaedic implants.
**pressfit option only*

Cemented Stem

Survivorship

The implant design not only supports a consistent cement mantle, but the proximal flanges also support a proximal fit of the implant within the cement mantle.

III. Preoperative Planning

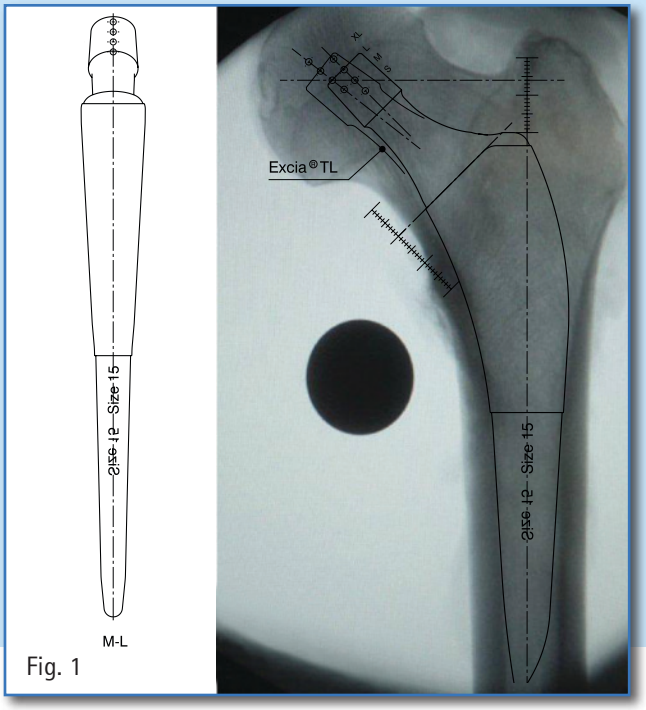

Fig. 1

X-ray templates at a scale of 1.15:1 are available for planning the size and position of the Excia® T Standard Hip System implant. The aim of templating the Excia T Standard Hip System implant is to:

- Identify desired leg lengths and offset.
- Estimate implant size according to the desired leg length and offset.
- Note resection location/height.

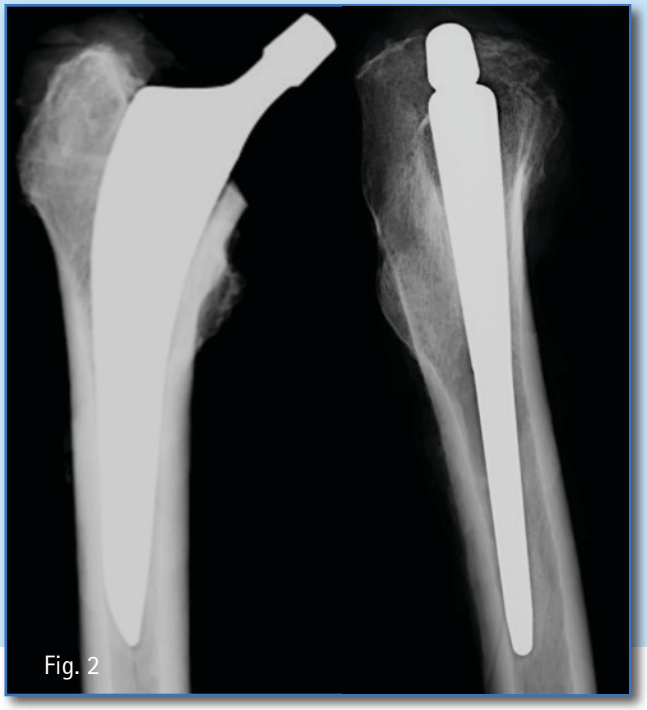
Fig. 2

The primary stability of the Excia T Standard Hip System implant is achieved by a combination of exceptional biomechanical reconstruction, a precise fit of the subproximal stem, proximal fill and good rotational stability.

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IV. Surgical Technique

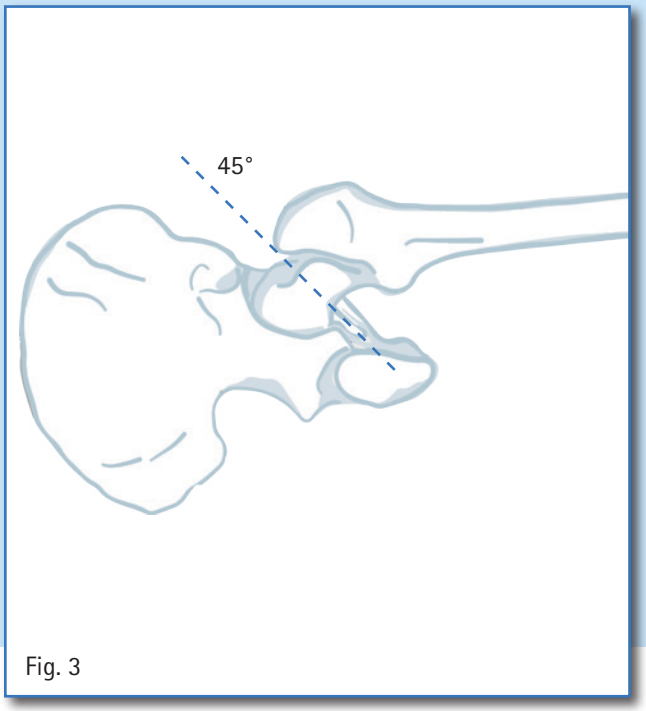

Fig. 3

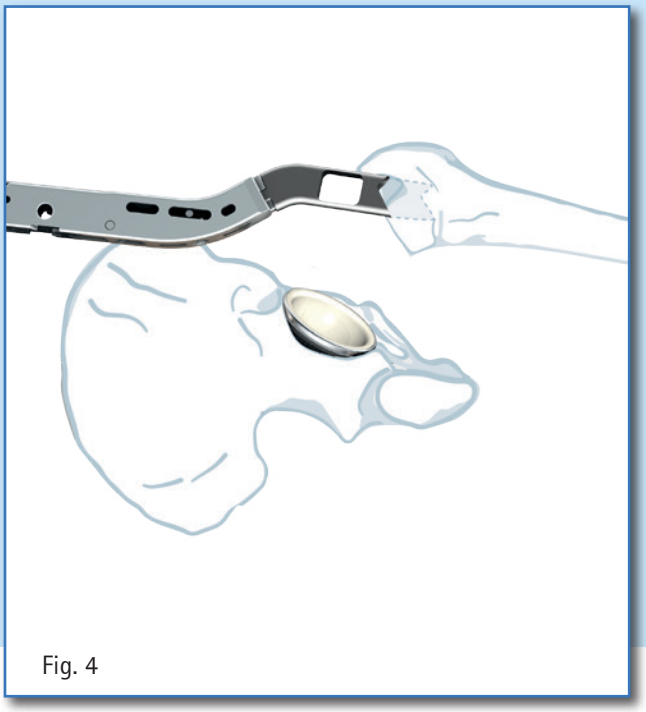

Fig. 4

1. Osteotomy

- The femoral neck resection is performed according to the preoperative planning.
- The osteotomy is at an angle of 45° to the femoral shaft, on average 15 mm above the lesser trochanter but dependent on the patient's individual anatomy.

Note: *To verify the osteotomy angle, a resection guide with a 45° reference (ND054R) is available*

2. Opening the Medullary Canal

- The medullary canal is opened with a box osteotome (NT118R/NT903R), which is inserted anterolaterally in the direction of the desired implant antetorsion angle.
- The box osteotome can be attached to the desired rasp handle, which is then impacted via a mallet.

Note: *Use of a canal finder is optional but may be useful for stem orientation (NT323R).*

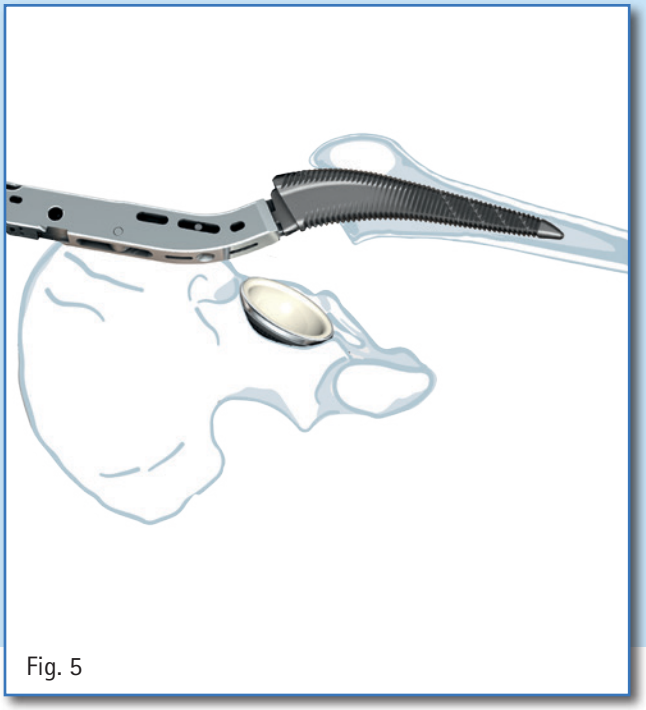

Fig. 5

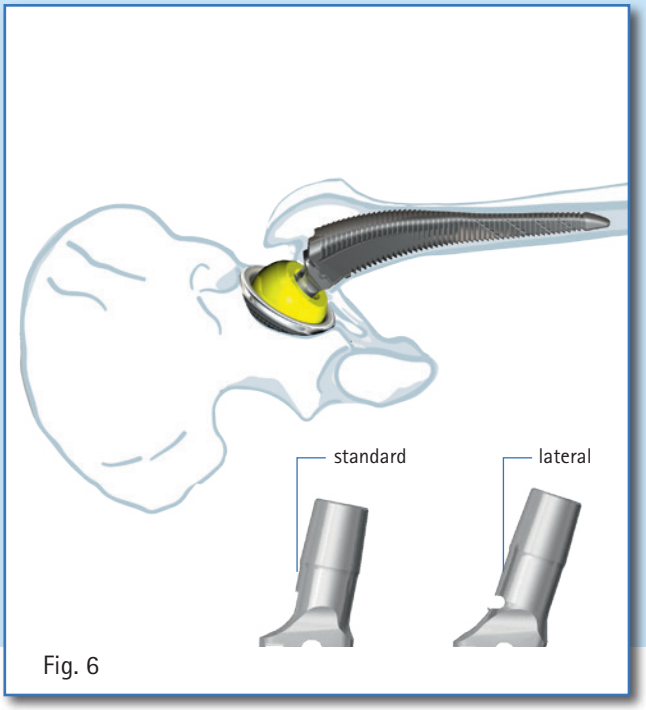

Fig. 6

3. Preparation of the Femoral Canal

- The medullary canal is prepared using sequential rasps, beginning with the smallest.
- The rasp should be inserted with a medial orientation and neutral rasp position.
- The implant bed is prepared for the proper size when stability is achieved by resisting rotation.
- The teeth of the rasp should be aligned to the resection level, but not below the osteotomy plane.
- The implant stem to be inserted is selected according to the size of the final rasp.

Note: *In order to not change the desired antetorsion angle of the implant or widen the implant bed in the proximal area, avoid aggressive rotation of the rasp during stability checks.*

4. Trial Reduction

- Trial reduction assesses joint mobility, range of motion, articular tension and leg length.
- Trial reduction is performed using trial neck adapters, the implantation rasp and trial implant heads.
- Remove the rasp handle and leave the rasp in the femoral canal.
- Choose the appropriate trial neck adapter and attach it to the rasp.
- Choose the appropriate trial head and place it on the neck cone.
- Reduce the joint and repeat as necessary.

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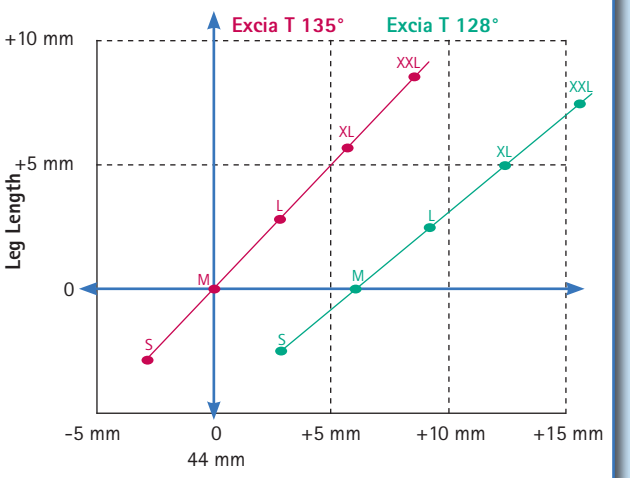

Fig. 7

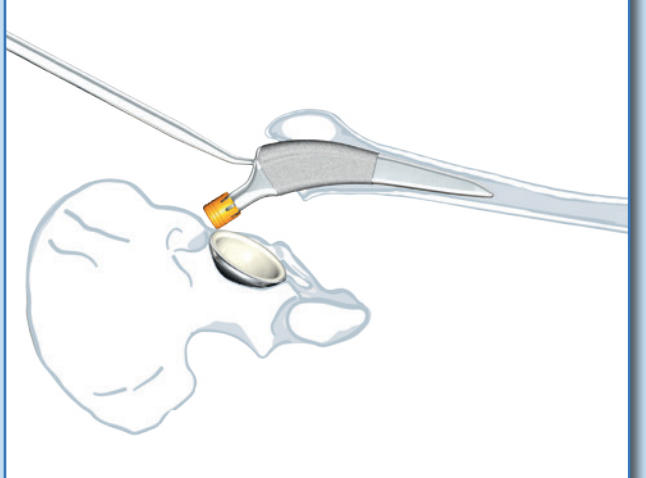

Fig. 9

5. Biomechanical Conditions

- The selection of the neck is guided by the trial reduction in order to assess luxation tendency, range of motion and soft tissue or ligament tension.
- The Excia T is compatible with two neck adapters, available with CCD angles 135° and 128°. The neutral offset is 44 mm for a standard rasp position. The 128° CCD angle influences the soft tissue tension by changing the offset by +6 mm to lateralize the stem placement within the joint without changing the leg length.
- The leg length is assessed by choosing an implant head for the required neck length.

Head/Neck Lengths

	28 mm	32/36/40 mm
S	-3.5	-4
M	0	0
L	+3.5	+4
XL	+7	+8
XXL	+10.5	+12

* 36 mm demonstrated in graph

Fig. 8

6a. Insertion of the Excia T Stem (Pressfit)

- The Excia T stem can be implanted after the trial reduction.
- The stem is inserted as deeply as possible by manual pressure and then driven-in by applying the stem impactor (ND945R/ND944R) to the lateral recess of the Excia T stem.
- The stem impactor controls the rotational alignment during implantation.

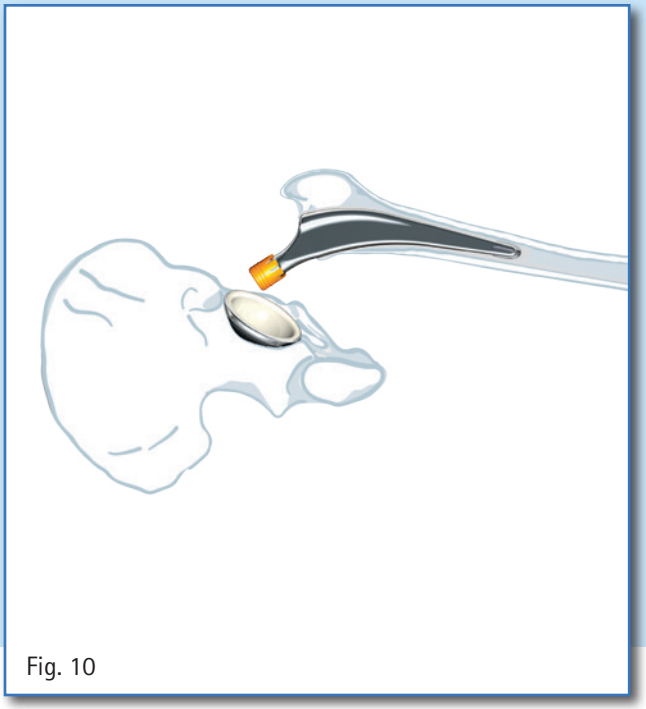

Fig. 10

6b. Insertion of the Excia® T Stem (Cemented)

- The Excia T stem can be implanted after the trial reduction.
- The implant stem to be inserted is selected according to the size of the final rasp, as well as the desired nominal thickness of the cement mantle.
- The distal stem alignment within the cement can be achieved with a centralizer.

Note: *In case of distally widened femoral canals, it is possible to use a bigger centralizer in order to achieve a distal canal fitting.*

Note: *The size of the corresponding centralizer is stated on the packaging of each Excia T cemented stem.*

Profiler Size	10	11	12	13	14	15	16	17	18	19	20
Excia T Cemented	10		12		14		16		18		20
Centralizer Ø mm	8		9		10		11		12		13
Cement Mantle mm	1	1.5	1	1.5	1	1.5	1	1.5	1	1.5	1

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V. Implant Overview

Excia T and TL Standard Hip Stem Pressfit Implants

ISOTAN$_F$
Plasmapore

Excia T Geometry

Size	Length	Standard			Lateralized		
		CCD		Offset	CCD		Offset
8	131.4 mm	NU208T	135°	37.7 mm	NU228T	128°	43.7 mm
9	135.9 mm	NU209T	135°	38.9 mm	NU229T	128°	44.9 mm
10	140.4 mm	NU210T	135°	40.1 mm	NU230T	128°	46.1 mm
11	144.9 mm	NU211T	135°	41.3 mm	NU231T	128°	47.3 mm
12	149.4 mm	NU212T	135°	42.5 mm	NU232T	128°	48.5 mm
13	153.9 mm	NU213T	135°	43.7 mm	NU233T	128°	49.7 mm
14	158.4 mm	NU214T	135°	44.9 mm	NU234T	128°	50.9 mm
15	162.9 mm	NU215T	135°	46.1 mm	NU235T	128°	52.1 mm
16	167.4 mm	NU216T	135°	47.3 mm	NU236T	128°	53.3 mm
17	171.9 mm	NU217T	135°	48.5 mm	NU237T	128°	54.5 mm
18	176.4 mm	NU218T	135°	49.7 mm	NU238T	128°	55.7 mm
19	180.9 mm	NU219T	135°	50.9 mm	NU239T	128°	56.9 mm
20	185.4 mm	NU220T	135°	52.1 mm	NU240T	128°	58.1 mm

Implant Materials:

Plasmapore® Pure Titanium (Ti / ISO 5832-2)
ISOTAN™ $_F$ Titanium forged alloy (Ti6Al4V / ISO 5832-3)

Excia® T and TL Standard Hip Stem Cemented Implants

ISODUR$_F$

Stem Size	Standard	Lateralized
10	NU270K	NU290K
12	NU272K	NU292K
14	NU274K	NU294K
16	NU276K	NU296K
18	NU278K	NU298K
20	NU280K	NU300K

*The cemented stem is 6 mm shorter and radially reduced by 1 mm along the stem for all sizes, compared to the pressfit stem.

**The cemented stem maintains the same CCD angle offset as its corresponding pressfit size.

Femoral Heads

12/14

	28 mm	32 mm	36 mm	40 mm
S	NK460D	NK560D	NK650D	NK750D
M	NK461D	NK561D	NK651D	NK751D
L	NK462D	NK562D	NK652D	NK752D
XL	-	NK563D	NK653D	NK753D

Biolox® delta

12/14

	28 mm	32 mm	36 mm	40 mm
S	NK429K	NK529K	NK669K	NK769K
M	NK430K	NK530K	NK670K	NK770K
L	NK431K	NK531K	NK671K	NK771K
XL	NK432K	NK532K	NK672K	NK772K
XXL	NK433K	NK533K	NK673K	NK773K

ISODUR $_F$

Distal Centralizer

PMMA

mm	Centralizer
8	NK088
9	NK089
10	NK090
11	NK091
12	NK092
13	NK093
14	NK094
15	NK095
16	NK096
17	NK097
18	NK098

Implant Materials:

Biolox® delta	Aluminum oxide composite ceramics (Al2O3 / ZiO2 / ISO 6474-2)
ISODUR™ $_F$	Cobalt-Chromium forged alloy (CoCrMo / ISO 5832-12)
PMMA	Polymethylmethacrylate

Biolox is a registered trademark of CeramTec GmbH.

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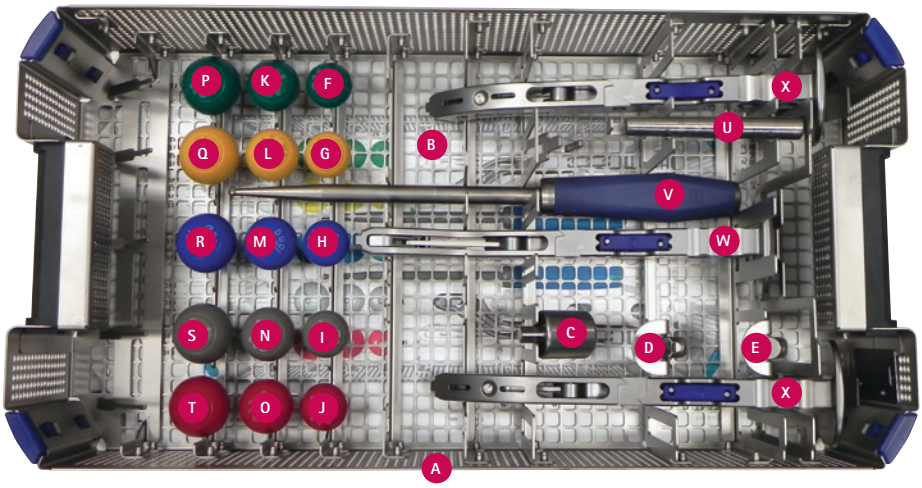
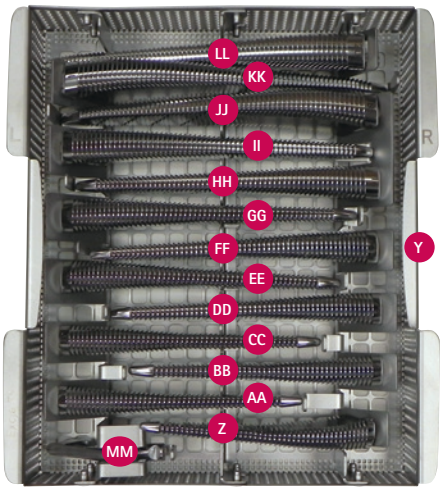
VI. Instrument Overview

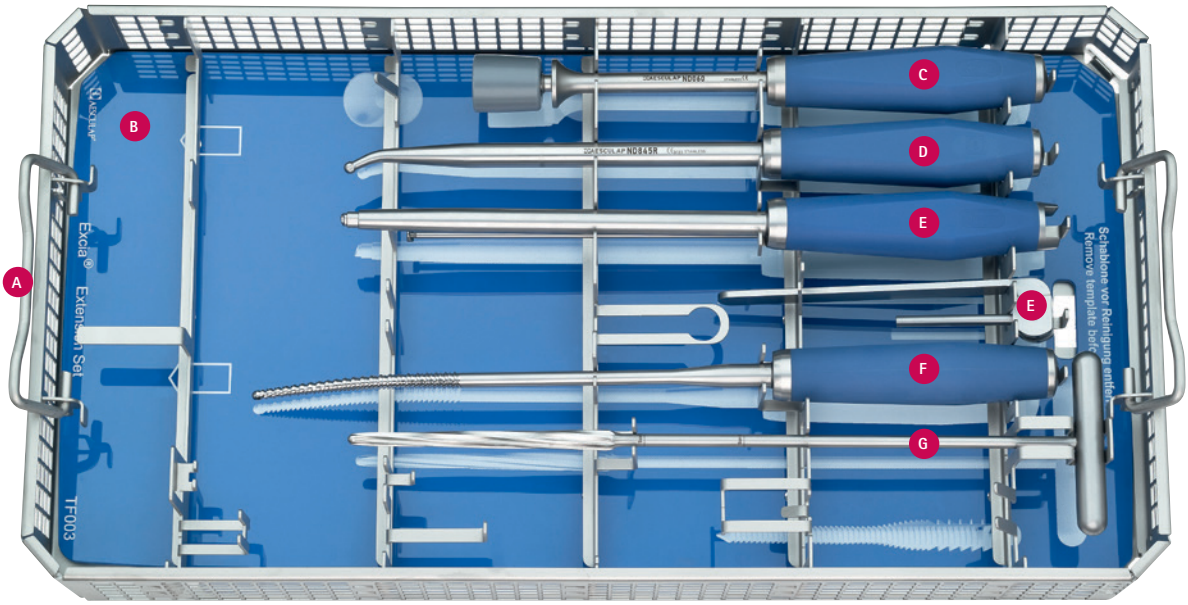




Excia® T – Tray 1

Index	Qty.	Item No.	Description
N/A	1	JN446	Bottom for 1/1 Container Perforated Height: 247 mm
N/A	1	JK489	Full Size Lid with Retention Plate - Silver
A	1	NT901R	Excia T Tray for Basic Set NT900
N/A	1	JA455R	Lid For Ortho Tray Din without Handle
B	1	TF109	Graphic Template for NT901R (NT900)
C	1	NT904R	Excia T Extraction Adapter
D	1	NT905R	Excia T Trial Neck 12/14 for Rasp
E	1	NT906R	Excia T Trial Neck 12/14 for Rasp
F	1	NT356	Trial Head 12/14 28 mm S
G	1	NT357	Trial Head 12/14 28 mm M
H	1	NT358	Trial Head 12/14 28 mm L
I	1	NT359	Trial Head 12/14 28 mm XL
J	1	NT360	Trial Head 12/14 28 mm XXL
K	1	NT366	Trial Head 12/14 32 mm S
L	1	NT367	Trial Head 12/14 32 mm M
M	1	NT368	Trial Head 12/14 32 mm L
N	1	NT369	Trial Head 12/14 32 mm XL
O	1	NT370	Trial Head 12/14 32 mm XXL
P	1	NT376	Trial Head 12/14 36 mm S
Q	1	NT377	Trial Head 12/14 36 mm M
R	1	NT378	Trial Head 12/14 36 mm L

Index	Qty.	Item No.	Description
S	1	NT379	Trial Head 12/14 36 mm XL
T	1	NT380	Trial Head 12/14 36 mm XXL
U	1	ND017R	Cross Bar for Rasp Handles
V	1	ND844R	Insertion Instrument with Ball Shaped Trigon, Straight
W	1	NT001R	Rasp Handle Lateral Approach, Straight
X	2	NT002R	Rasp Handle Posterior Approach, Straight
Y	1	NT901820	Excia T Inlay Set NT900
Z	1	NT908R	Excia T Rasp Size 8 mm
AA	1	NT909R	Excia T Rasp Size 9 mm
BB	1	NT910R	Excia T Rasp Size 10 mm
CC	1	NT911R	Excia T Rasp Size 11 mm
DD	1	NT912R	Excia T Rasp Size 12 mm
EE	1	NT913R	Excia T Rasp Size 13 mm
FF	1	NT914R	Excia T Rasp Size 14 mm
GG	1	NT915R	Excia T Rasp Size 15 mm
HH	1	NT916R	Excia T Rasp Size 16 mm
II	1	NT917R	Excia T Rasp Size 17 mm
JJ	1	NT918R	Excia T Rasp Size 18 mm
KK	1	NT919R	Excia T Rasp Size 19 mm
LL	1	NT920R	Excia T Rasp Size 20 mm
MM	1	NT118R or NT903R	Box Osteotome



Excia T – Tray 2

Index	Qty.	Item No.	Description
A	1	NT301R	Tray with Supports
N/A	1	JN217R	1/1 Size Wide Perforated Basket Lid 489x257 mm
B	1	TF003	Graphic Template
C	1	ND060	Impactor for Prosthesis Heads
D	1	ND845R	Insertion Instrument with Ball Shaped Trigon, Curved
E	1	ND847R	Insertion Instrument with Stop Lever Ball Shaped Trigon
F	1	ND472R	Starter Rasp
G	1	NT323R	Canal Finder, Conic, Straight

Not Shown - ND054R - Excia T Resection Guide 45°

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Notes

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