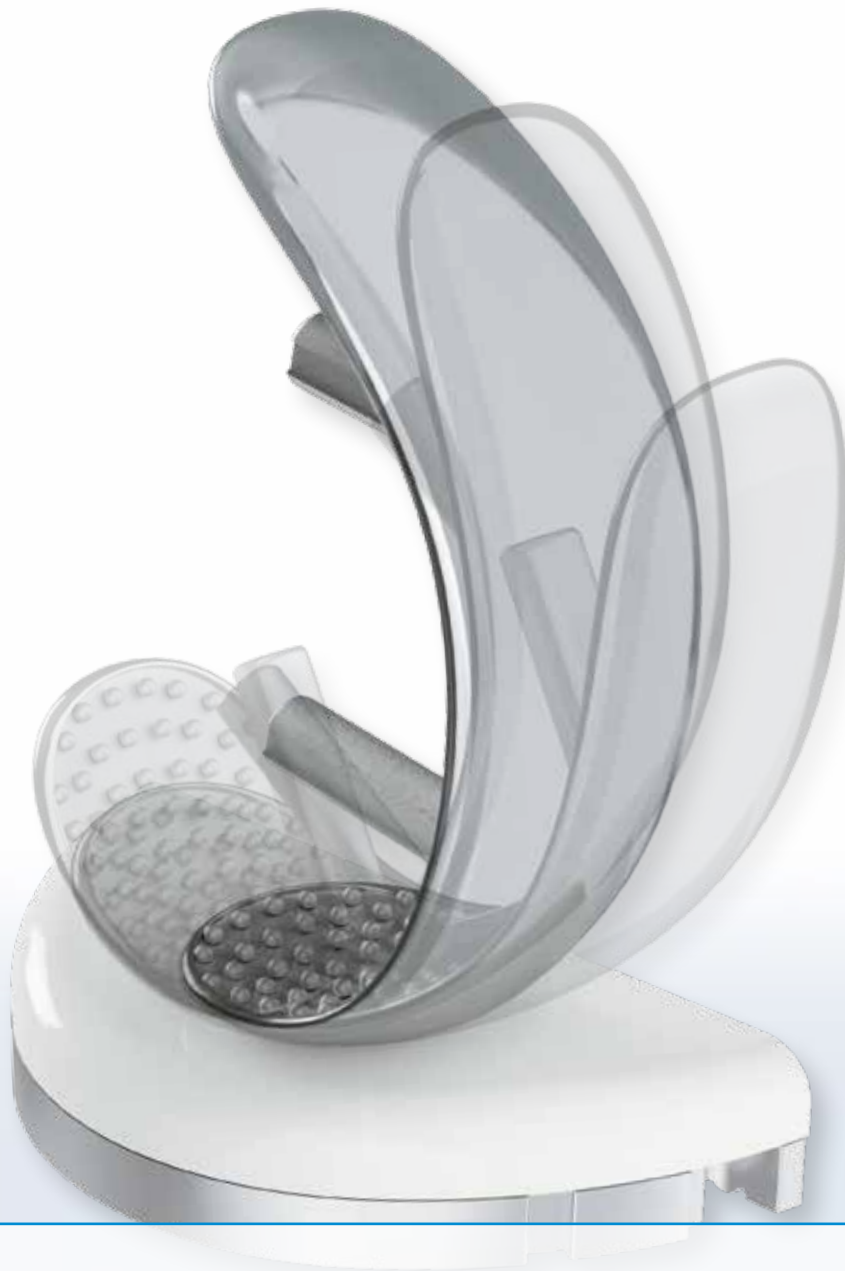




LINK® SLED Prosthesis

MITUS® **ART** – Anatomic Reconstruction Technique
Instrument Set

Presented by:



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LINK® SLED Prosthesis

with MITUS® **ART** Instruments – Anatomic Reconstruction Technique

System Description

- 02 LINK® SLED Prosthesis
- 04 Femoral and Tibial Components
- 04 LINK PorEx® Technology Surface Modification – for patients who are hypersensitive to metal
- 05 MITUS® **ART** Instrument Set
- 05 Indications/Contraindications

Implants

- 06 Femoral Components
- 06 Tibial Plateaus (All-poly Design)
- 07 Tibial Plateaus (Metal-backed Design)

Instruments

- 08 MITUS® **ART** Instrument Set
- 09 • Tibia Resection
- 10 • Tibia Preparation
- 12 • Femur Preparation
- 13 Sawblades
- 14 Accessories: Adapter
- 15 X-ray Templates, Further Literature
- 16 Important Information for X-ray Investigations

Important Information about our Implants

LINK® SLED Prosthesis

NATURAL FIT – Surgical Philosophy

”A resurfacing arthroplasty with minimal bone resection and maintenance of native anatomy.”

There have been no modifications since 1981 and it has been used successfully to treat both medial and lateral gonarthrosis. The **LINK® SLED Prosthesis** only requires minimal bone resection, allowing cementation to the higher-quality bone stock which is vital for long-term secure fixation.

The **MITUS® ART Instrument Set** is available for easy handling and reliable implantation. This set enables ease of use, excellent reliability and a precise and reproducible surgical technique. The **Anatomic Reconstruction Technique** allows for a particular patient individual femoral preparation. It ensures a pure removal of cartilage thus preserving maximal femoral bone stock.



LINK® SLED Prosthesis

NATURAL FIT

- SIMPLE implantation
- REPRODUCIBLE outcomes
- RESULTS you can trust
- Unicondylar knee resurfacing
- A comprehensive and versatile system²
- Outstanding long-term results^{2,3,4,6}

References

- 1 Internal technical report: Study of the influence of TiN coating on the ion release of CrCoMo-alloys in SBF buffer simulator testing.
- 2 Lateral unicompartmental knee replacement SURVIVORSHIP AND CLINICAL EXPERIENCE OVER 21 YEARS; T. Ashraf, J. H. Newman, R. L. Evans, C. E. Ackroyd From Southmead Hospital, Bristol, England.
- 3 Newman, J. et. al. Unicompartmental or total knee replacement. The 15-Year Results of a Prospective Randomised Controlled Trial. J Bone Joint Surg [Br] 2009; 91-B:52-7. Outcome at 15 year follow up. Survivorship rate based on revision or failure for any reason for UKR: 89.8%, for TKR 78.7%.
- 4 Annual Report Swedish Knee Arthroplasty Register 2015., <http://www.myknee.se>
- 5 R.E. Gleeson, R. Evans, C.E. Ackroyd, J. Webb, J.H. Newman: Fixed or Mobile Bearing Unicompartmental Knee Replacement? Comparative Cohort Study, The Knee 11 (2004) 379-384.
- 6 R.G Steele, S. Hutabarat, R.L. Evans, C.E. Achroyd, J.H. Newman Survivorship of the St. Georg® Sled medial unicompartmental knee replacement beyond ten years, reprinted from J Bone Joint Surg [Br] 2006; 88-B:1164-8.

LINK® SLED Prosthesis

The **LINK® SLED Prosthesis** was first implanted in 1969. Subsequent operative experience resulted in revisions to the initial prosthesis but the basic design features have remained unchanged:

Product longevity is documented by superior clinical results.*

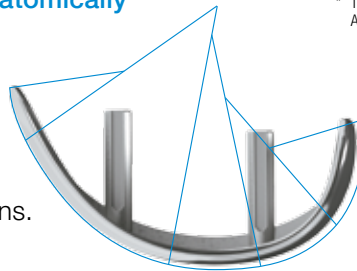
- Extensive clinical experience.⁴
- Over 3 decades of unchanged design.
- Excellent real-world outcomes.⁴



* The Swedish Knee Arthroplasty Register, Annual Report 2015, <http://www.myknee.se>

Polycentric femoral design allowing an anatomically adapted shape.

- Proven polycentric femoral profile.
- Minimized risk of patellar impingement.
- Essential design for future treatment options.



A 'round-on-flat' fixed bearing design, providing a high degree of freedom and individual patient-specific sliding motion after 'run-in' phase.

- Unconstrained kinematics.
- Misalignment tolerance.
- Better results compared to other implants, even in low volume sites.^{4,5}



A tapered superior femoral margin minimizing any risk of patellar impingement. Bone-preserving thanks to resurfacing philosophy.

- Maximum preservation of bone and healthy tissue.
- Full and continued control of implant positioning.
- Minimized number of surgical steps.



LINK® SLED Prosthesis

Femoral Components

The “round-on-flat” articulation allows a large degree of freedom and the joint motion is guided exclusively by the existing soft tissue constraints. Furthermore the design compensates for minor mal-position without resulting in „edge loading“ of the component. The large surface radii serve to distribute the load over a larger area of the plateau than would be the case with smaller radii. The globular nature of the concave side of the femoral component provides optimal bonding between the implant and cement. The alignment and shape of the fixation pegs allow for easy positioning of the femoral component. The implant is easy to remove should revision become necessary.



The Femoral Components are available in four sizes:

- Small (16 x 40 mm)
- Medium small (17 x 46 mm)
- Medium (18 x 52 mm)
- Large (20 x 60 mm)



Tibial Plateaus

As a result of their symmetrical shape the tibial plateaus can be used for both the medial and lateral tibial compartments. The sizing is adapted to the anatomical shape of the tibia.

• All-poly Design

This design comes in four heights: 7, 9, 11 and 13 mm and four diameters: 45, 50, 55 and 58 mm. The structured underside allows an excellent bone-cement interface.

• Metal-backed Design

This design comes in four heights: 8, 9, 11 and 13 mm and three diameters: 45, 50 and 55 mm. The globular undersurface of the plateau offers optimal bone-cement bonding.

LINK PorEx® Technology – Surface Modification

(TiNbN = Titanium Niobium Nitride)

The hypoallergenic LINK PorEx® surface modification is made of Titanium Niobium Nitride (TiNbN) and offers a ceramic-like surface which significantly reduces the release of ions and is suited for patients who are hypersensitive to metal.¹

This surface is extremely hard and possesses abrasion properties similar to those of ceramics. These qualities and the wetting angle of the surface give it a particularly low friction coefficient when in contact with fluid.



¹ Internal study of the influence of TiNbN-coating on the ion release of CoCrMo-alloys in SBF buffer simulator testing.

MITUS® ART Instrument Set (Anatomic Reconstruction Technique)

The **MITUS® ART Instrument Set** is easy to use. All the instruments can be dismantled without tools and are stored on instrument trays in a clear and structured manner which ensures that they are sterile and ready-at-hand when needed.

The **Anatomic Reconstruction Technique** allows for a patient individual femoral preparation. It ensures a pure removal of cartilage thus preserving maximal femoral bone stock.



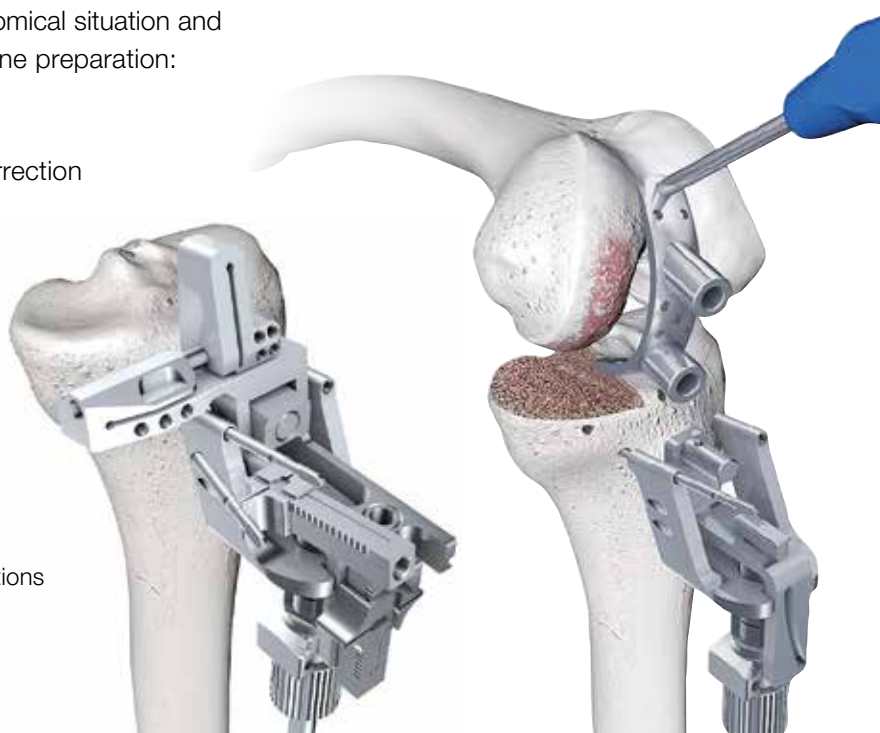
The **MITUS® Instrument Set** offers a good number of advantages:

- Maximum conservation of bone substance
- Restoration of alignment and full control of tibial resection:
 - Posterior slope
 - Varus/valgus
 - Resection height
- Anatomically adapted femoral preparation
- Simple tibial preparation with milling system
- Possible application medial and lateral

The purpose of the LINK® SLED Prosthesis is to restore the damaged joint surfaces which will restore the original mechanical axis. Most patients will present with an underlying 'constitutional' varus and a slight, undercorrection of alignment can be achieved if desirable to reproduce this.

The **Tibial Saw Guide** is used for resection, ensuring accurate reproduction of the anatomical situation and enabling precise, reproducible bone preparation:

- Setting of the posterior slope
- Adjustment of varus/valgus correction
- Precise adjustment of the resection height



Note:

For specified indications/contraindications see catalog:

740_LINK® SLED Prosthesis
with MITUS® ART Instrument Set,
Surgical Technique

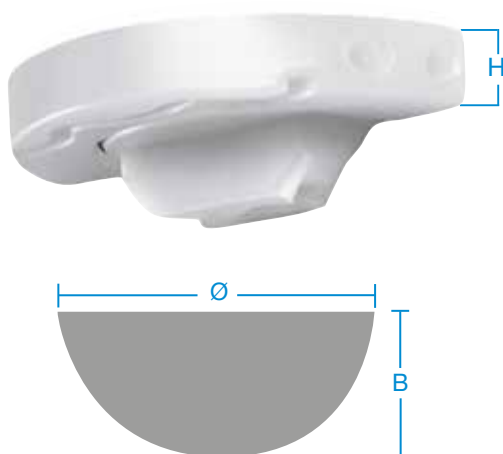
Femoral Components

Material: CoCrMo or CoCrMo/LINK PorEx®*



Item no. CoCrMo	Item no. CoCrMo/ LINK PorEx®*	Size	Width (K) mm	Length (T) mm
15-2020/40	15-2220/40	small	16	40
15-2020/46	15-2220/46	medium small	17	46
15-2020/52	15-2220/52	medium	18	52
15-2020/60	15-2220/60	large	20	60

* LINK PorEx®: TiNbN = Titanium Niobium Nitride; hypoallergenic coating (gold colour).



Tibial Plateaus – all-polyethylene

Material: UHMWPE

Item no. UHMWPE	Height (H) mm	Ø mm	Width mm
15-2028/01	7	45	22
15-2028/02	9	45	22
15-2028/03	11	45	22
15-2028/04	13	45	22
15-2028/05	7	50	27
15-2028/06	9	50	27
15-2028/07	11	50	27
15-2028/08	13	50	27
15-2028/09	7	55	29
15-2028/10	9	55	29
15-2028/11	11	55	29
15-2028/12	13	55	29
15-2028/13	7	58	31
15-2028/14	9	58	31
15-2028/15	11	58	31
15-2028/16	13	58	31

Important information:

Tibial components of 7 mm height offer the advantage of particular bone preservation and allow for a good range of motion. The suitability of these particular components have to be medically indicated. The tibial components of 7 mm height are not suitable for obese or very active patients.

Tibial Plateaus – metal-backed

Material: CoCrMo or CoCrMo/LINK PorEx[®]*, UHMWPE



Item no. CoCrMo	Item no. CoCrMo/ LINK PorEx [®] *	Height (H) mm	Ø mm	Width (B) mm
15-2030/13	15-2230/13	8	45	22.5
15-2030/02	15-2230/02	9	45	22.5
15-2030/03	15-2230/03	11	45	22.5
15-2030/04	15-2230/04	13	45	22.5
15-2030/14	15-2230/14	8	50	25.0
15-2030/06	15-2230/06	9	50	25.0
15-2030/07	15-2230/07	11	50	25.0
15-2030/08	15-2230/08	13	50	25.0
15-2030/15	15-2230/15	8	55	27.5
15-2030/10	15-2230/10	9	55	27.5
15-2030/11	15-2230/11	11	55	27.5
15-2030/12	15-2230/12	13	55	27.5

* LINK PorEx[®]: TiNbN = Titanium Niobium Nitride; hypoallergenic coating (gold colour).



MITUS® ART Instrument Set (Anatomic Reconstruction Technique)

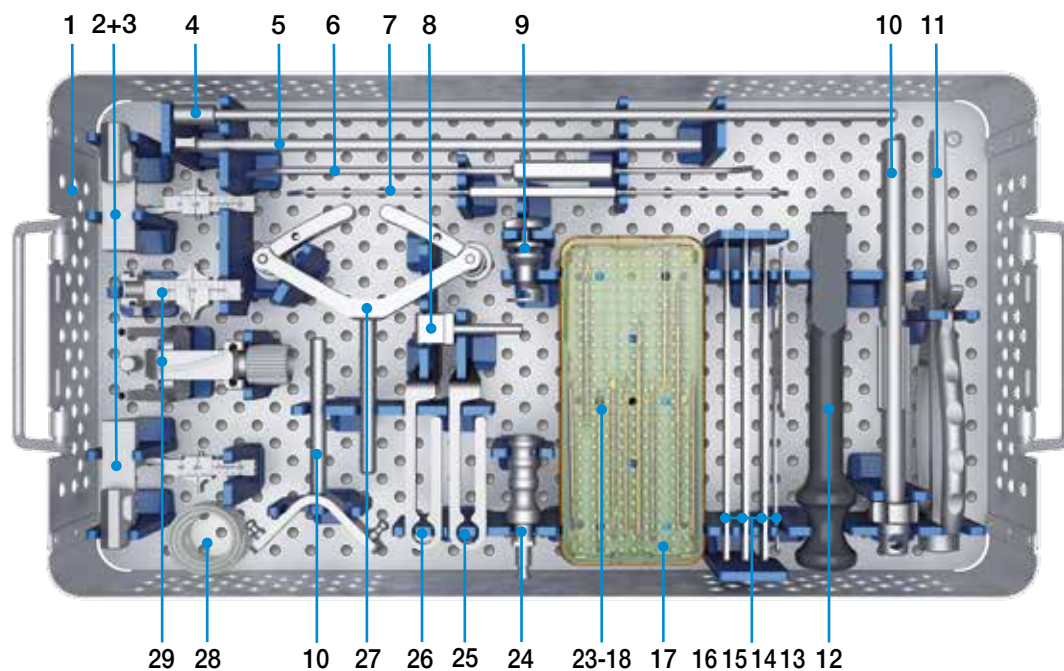
Greater safety
and higher precision

- Easy-to-use instrument set for optimal alignment and soft tissue adjustment with reproducible results
- The instruments are arranged on the trays in the correct surgical sequence
- All the instruments can be dismantled without tools and are quick and easy to reassemble



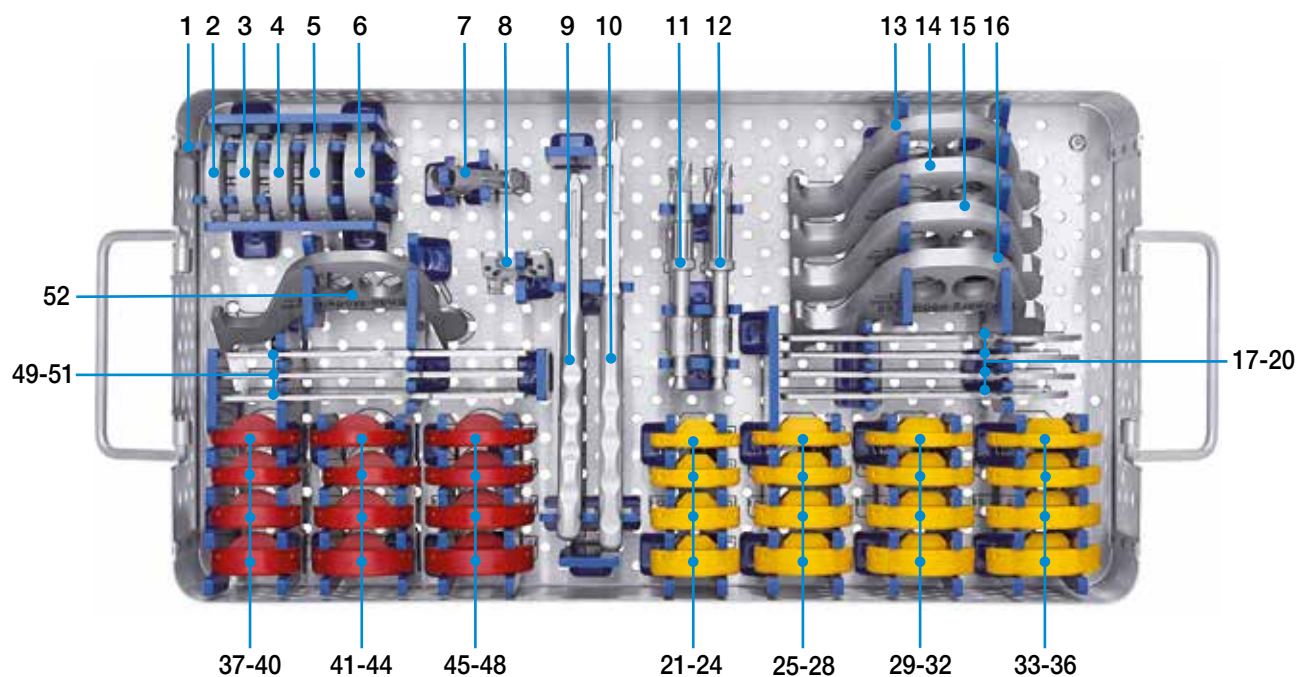
Item no.	MITUS® ART Instrument Set
35-1000/01	Case – Tibia Resection
35-1100/00	Case – Tibia Preparation
35-2100/00	Case – Femur Preparation

35-1000/01 Case – Tibia Resection



1	35-0100/01	Instruments Tray – Tibia Resection, empty, 485 x 253 x 80 mm
2	35-1002/00	Tibial Saw Guide, asymmetrical, right
3	35-1001/00	Tibial Saw Guide, asymmetrical, left
4	319-520/01	Alignment Rod, extramedullary
5	319-110/01	EM Alignment Rod, for tibia alignment
6	15-2201/70	Curette to remove excess cement
7	15-2201/71	Spatula, double end, to remove excess cement
8	35-1003/00	Tibial Sagittal Resection Guide
9	35-1004/00	Guide for stylus
10	319-160/00	Foot Clamp, EM tibial alignment (2 parts)
11	317-586	Insert/Extraction Forceps, for fixation pins Ø 3 mm
12	35-1017/00	Tibial Impactor
13	317-802/53	Cutting Template
14	15-2102/03	Lambotte Osteotome, width 15 mm
15	15-2201/17	Lambotte Osteotome, width 11 mm
16	15-2201/16	Lambotte Osteotome, width 9 mm
17	319-602/30	Sterilizing Box with base, silicon mat and top consisting of:
18	319-560/01	Thread Pin, Ø 3.5 mm, 70 mm (2 pieces)
19	319-566/00	Drill Pin with stop, Ø 3.0/3.5 mm, 85 mm (2 pieces)
20	319-581/00	Drill Pin, Ø 3 mm, 80 mm (3 pieces)
21	319-582/00	Drill Pin, Ø 3 mm, 110 mm (2 pieces)
22	35-1020/08	Self-tapping Fixation Pin, Ø 3 mm, 80 mm (3 pieces)
23	35-1021/00	Locking Socket, for tibia alignment rod (1 piece)
24	16-3287/00B	Adapter, LINK power tool snap lock adapter
25	35-1005/00	Stylus, height 5 mm
26	35-1007/00	Stylus, height 7 mm
27	319-183/00	Flexible Belt, spring fixation
28	317-538/01	Plastic Connector, 495 mm
29	319-140/01	Tibial Base Guide (2 parts)

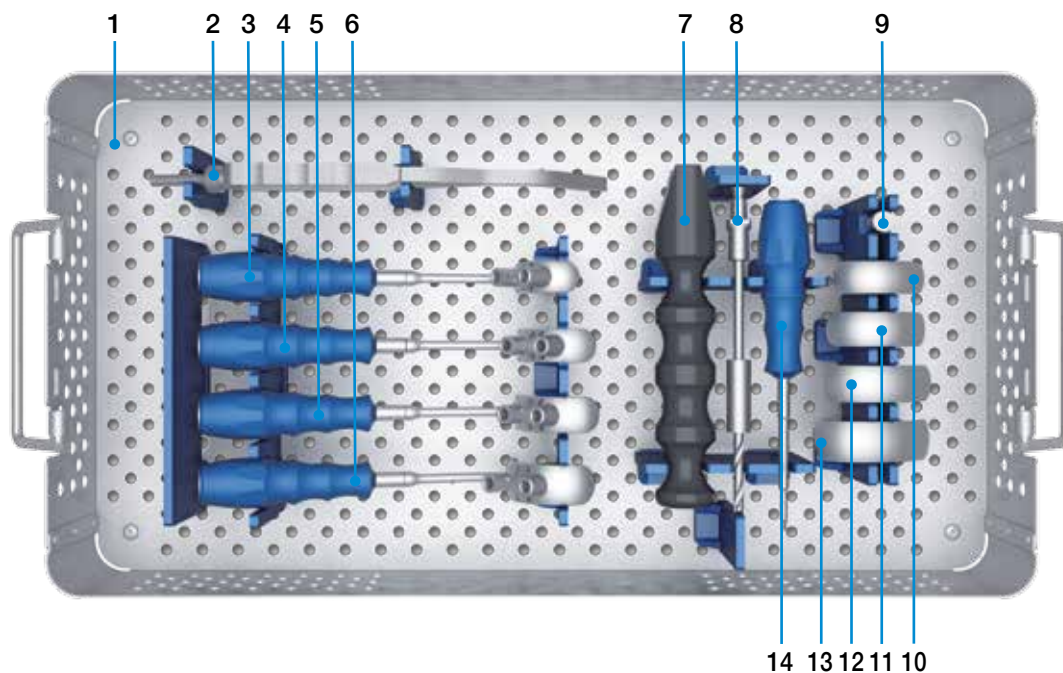
35-1100/00 Case – Tibia Preparation



1	35-0110/00	Instruments Tray – Tibia Preparation, empty, 485 x 253 x 80 mm
		Tibial Trial Plates, Ø 45 mm
2	35-1012/07	Height 7 mm
3	35-1012/08	Height 8 mm
4	35-1012/09	Height 9 mm
5	35-1012/11	Height 11 mm
6	35-1012/13	Height 13 mm
7	35-1010/00	Tibia Milling Guide
8	35-1011/00	Milling Fixation Block
9	15-2040/09	Plateau Holding and Inserting Forceps , for tibial plateaus (metal-backed)
10	15-2042	Inserting Forceps , for tibial trial prosthesis (all-poly) and tibial plateaus (all-poly)
11	35-1008/00	Tibial Cutter , small, for tibial plateaus (all-poly) Ø 45 mm
12	35-1009/00	Tibial Cutter , large, for tibial plateaus (all-poly) Ø 50, 55, 58 mm
13	35-1013/00	Keel Chisel , for tibial plateaus (all-poly), Ø 45 mm
14	35-1015/00	Bone Compressor , for tibial plateaus (all-poly), Ø 45 mm
15	35-1014/00	Keel Chisel , for tibial plateaus (all-poly), Ø 50, 55, 58 mm
16	35-1016/00	Bone Compressor , for tibial plateaus (all-poly), Ø 50, 55, 58 mm
		Tibial Templates for tibial plateaus (all-poly)
17	35-1158/00	Ø 58 mm
18	35-1155/00	Ø 55 mm
19	35-1150/00	Ø 50 mm
20	35-1145/00	Ø 45 mm

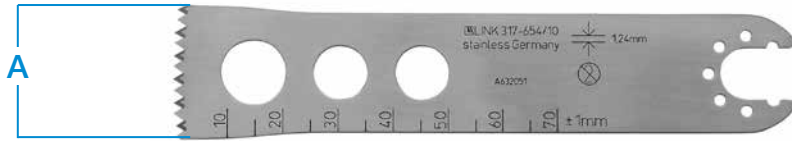
		Tibial Trial Prostheses, for tibial plateaus (all-poly)
21	35-1145/07	Ø 45 mm, Height 7 mm
22	35-1145/09	Ø 45 mm, Height 9 mm
23	35-1145/11	Ø 45 mm, Height 11 mm
24	35-1145/13	Ø 45 mm, Height 13 mm
25	35-1150/07	Ø 50 mm, Height 7 mm
26	35-1150/09	Ø 50 mm, Height 9 mm
27	35-1150/11	Ø 50 mm, Height 11 mm
28	35-1150/13	Ø 50 mm, Height 13 mm
29	35-1155/07	Ø 55 mm, Height 7 mm
30	35-1155/09	Ø 55 mm, Height 9 mm
31	35-1155/11	Ø 55 mm, Height 11 mm
32	35-1155/13	Ø 55 mm, Height 13 mm
33	35-1158/07	Ø 58 mm, Height 7 mm
34	35-1158/09	Ø 58 mm, Height 9 mm
35	35-1158/11	Ø 58 mm, Height 11 mm
36	35-1158/13	Ø 58 mm, Height 13 mm
		Tibial Trial Prostheses, for tibial plateaus (metal-backed)
37	35-1045/08	Ø 45 mm, Height 8 mm
38	35-1045/09	Ø 45 mm, Height 9 mm
39	35-1045/11	Ø 45 mm, Height 11 mm
40	35-1045/13	Ø 45 mm, Height 13 mm
41	35-1050/08	Ø 50 mm, Height 8 mm
42	35-1050/09	Ø 50 mm, Height 9 mm
43	35-1050/11	Ø 50 mm, Height 11 mm
44	35-1050/13	Ø 50 mm, Height 13 mm
45	35-1055/08	Ø 55 mm, Height 8 mm
46	35-1055/09	Ø 55 mm, Height 9 mm
47	35-1055/11	Ø 55 mm, Height 11 mm
48	35-1055/13	Ø 55 mm, Height 13 mm
		Tibial Templates, for tibial plateaus (metal-backed)
49	35-1055/00	Ø 55 mm
50	35-1050/00	Ø 50 mm
51	35-1045/00	Ø 45 mm
52	35-1012/00	Keel Chisel, for tibial plateaus (metal-backed)

35-2100/00 Case – Femur Preparation

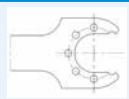
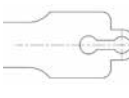


1	35-0201/00	Instruments Tray – Femur Preparation , empty, 485 x 253 x 80 mm
2	15-2201/10	Inserting Forceps , for trial sled prostheses
		Drill Guides
3	15-2040/40	small
4	15-2040/46	medium-small
5	15-2040/52	medium
6	15-2040/60	large
7	35-2002/00	Femoral Impactor
8	15-2040/03B	Twist Drill with stop, Ø 5.5 mm, 160 mm, with B Hudson fitting
9	15-2201/53	Fixation Pin for stabilization of drill guide
		Trial Sled Prostheses
10	35-2340/00	small
11	35-2346/00	medium-small
12	35-2352/00	medium
13	35-2360/00	large
14	319-535/00	Screwdriver , hex 2.5 mm

Sawblades

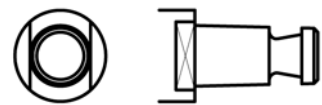


Sawblades,
without offset teeth, 1.24 mm thick

Width (A) 25 mm	Width (A) 13 mm	Fitting	
317-654/10	317-656/10	Synthes	
317-654/11	317-656/11	Aesculap Combi	
317-654/13	317-656/13	Zimmer/Hall Combi	
317-654/14	317-656/14	Stryker System 4	

Adapter

Hudson-Fitting
Standard tool connection.



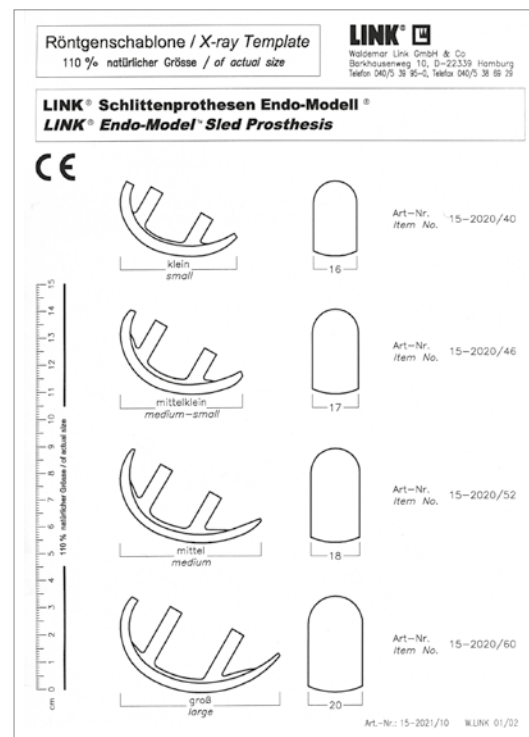
Adapter for power tool chuck
Different adapters are available to ensure compatibility to allow various connections:

Item no.	Attachment	
16-3283/01	Jakobs-Fitting (E)	
16-3284/00	AO-Fitting (D)	
16-3285/00	Harris-Fitting (C)	

X-ray Templates

X-ray Templates, 110% actual size, one sheet

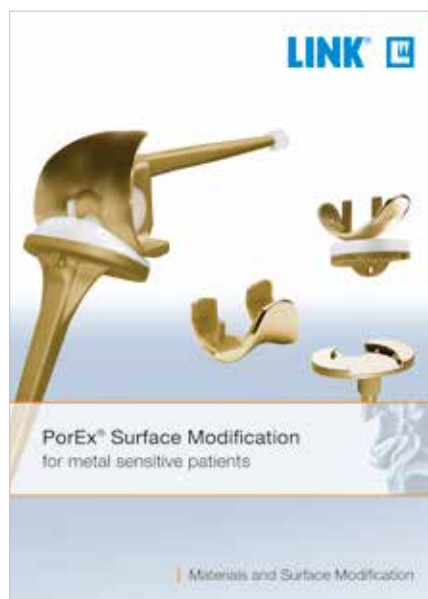
Item no.	Application
15-2021/10	for Unicondylar Sled Prosthesis 15-2020/40 to 15-2020/60
15-2021/14	for Tibial Plateaus, metal-backed 15-2030/02 to 15-2030/13 and 15-2230/02 to 15-2230/13
15-2021/13	for Tibial Plateaus, all-polyethylene 15-2028/01 to 15-2028/16



Further Literature



Catalog:
LINK® SLED Prosthesis MITUS® ART
Surgical Technique
available on request.



Further information of
LINK PorEx® (TiNbN = Titanium-Niob-Nitride)
Surface Modification
for LINK® prostheses
available on request.



For more information please register at mediathek.linkorthopaedics.com

Important Information for X-ray Investigations

X-ray investigations

X-ray images can be used to evaluate implant positioning post-operatively.

Images taken from certain angles can create the impression that the implant has broken.



Fig. 1: Post-operative X-ray 1



Fig. 2: Post-operative X-ray 2

Note

The LINK® tibial plateau metal-backed is delivered as one piece, i.e. the polyethylene component and the metal component are pre-assembled as a single unit. The manufacturing process of the components has never been changed. For secure connection the polyethylene engages with a mechanical coupling device.

These technical specifications can lead X-ray images taken from certain angles to appear distorted, which may give the impression that the tibial plateau is broken. Examples of such distorted images are shown below:



Fig. 3a: Photograph of externally rotated tibia

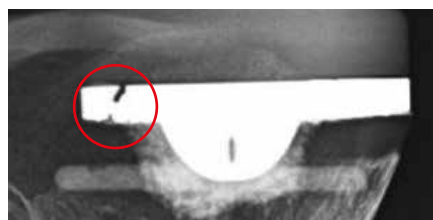


Fig. 3b: X-ray image of figure 3a

As a broken tibial plateau is most unlikely, the diagnosis should be verified with additional X-ray images.

Verification: Rotation of the tibia ensuring strictly lateral alignment for the follow-up X-ray.



Fig. 4a: Photograph of tibia from a strictly lateral position

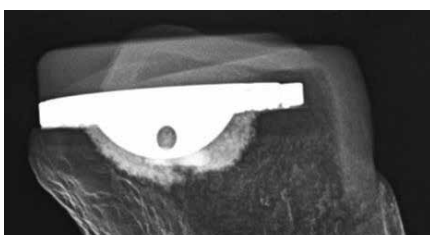


Fig. 4b: X-ray image of figure 4a

Please note the following regarding the use of our implants:

1. Choosing the right implant is very important.

The size and shape of the human bone determines the size and shape of the implant and also limits the load capacity. Implants are not designed to withstand unlimited physical stress. Demands should not exceed normal functional loads.

2. Correct handling of the implant is very important.

Under no circumstances should the shape of a finished implant be altered, as this shortens its life span. Our implants must not be combined with implants from other manufacturers.

The instruments indicated in the Surgical Technique must be used to ensure safe implantation of the components.

3. Implants must not be reused.

Implants are supplied sterile and are intended for single use only. Used implants must not be used again.

4. After-treatment is also very important.

The patient must be informed of the limitations of the implant. The load capacity of an implant cannot compare with that of healthy bone!

5. Unless otherwise indicated, implants are supplied in sterile packaging.

Note the following conditions for storage of packaged implants:

- Avoid extreme or sudden changes in temperature.
- Sterile implants in their original, intact protective packaging may be stored in permanent buildings up until the "Use by" date indicated on the packaging.
- They must not be exposed to frost, dampness or direct sunlight, or mechanical damage.
- Implants may be stored in their original packaging for up to 5 years after the date of manufacture. The "Use by" date is indicated on the product label.
- Do not use an implant if the packaging is damaged.

6. Traceability is important.

Please use the documentation stickers provided to ensure traceability.

7. Further information on the material composition is available on request from the manufacturer.

Follow the instructions for use!

Waldemar Link GmbH & Co. KG, Hamburg, Germany

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The Surgical Technique described has been written to the best of our knowledge and belief, but it does not relieve the surgeon of his/her responsibility to duly consider the particularities of each individual case.

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