




# Endo-Model Knee Systems

## Bushing Exchange

Surgical Technique

Explanation of Pictograms			
	Manufacturer		Article number
	Material (number)	RX only	Caution: Federal law restricts this device to sale by or on the order of a physician

# Endo-Model Knee Systems

## Bushing Exchange

### **System Description**

- 02 Rotating Hinge Mechanism – Previous Version (V01)
- 02 Rotating Hinge Mechanism – Current Version (V02)
- 03 Pure Hinge Mechanism – for Endo-Model

### **04 Surgical Technique**

#### **Implants**

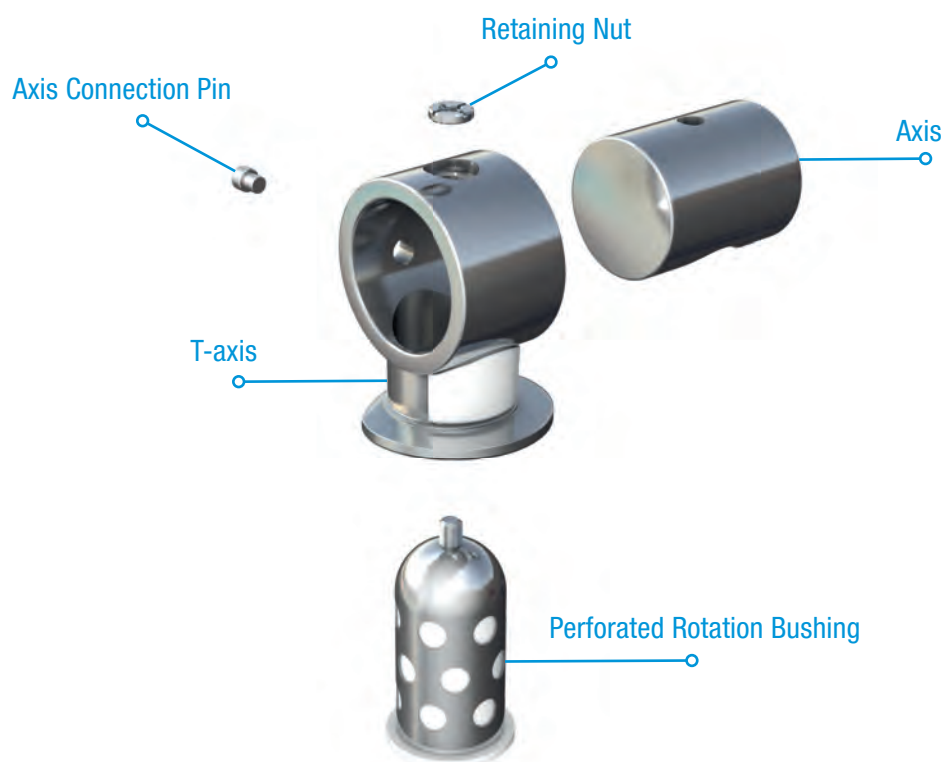
- 14 V02 Spare Part Sets for Endo-Model Rotational Knee Prostheses
- 15 V02 Spare Part Set for Endo-Model Hinge Knee Prostheses
- 16 V02 Spare Part Sets for Endo-Model Rotational Knee Prostheses with LINK PorEx

#### **Instruments**

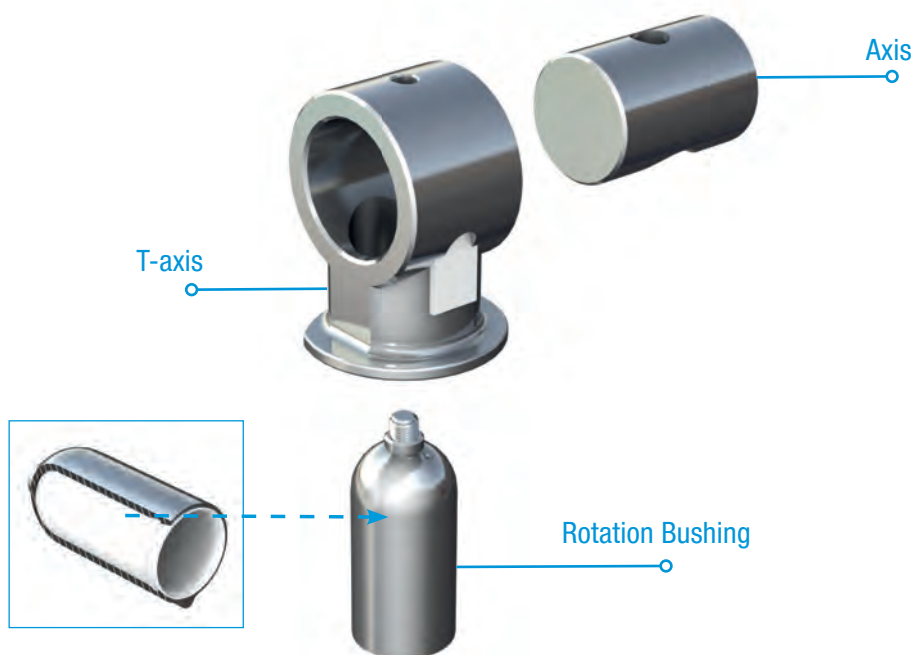
- 17 Additional Instrument Set for V02 coupling mechanism  
for Endo-Model – M and Endo-Model Rotational Knee Prosthesis
- 18 Bushing Exchange Instrument Sets

#### **Important Information**

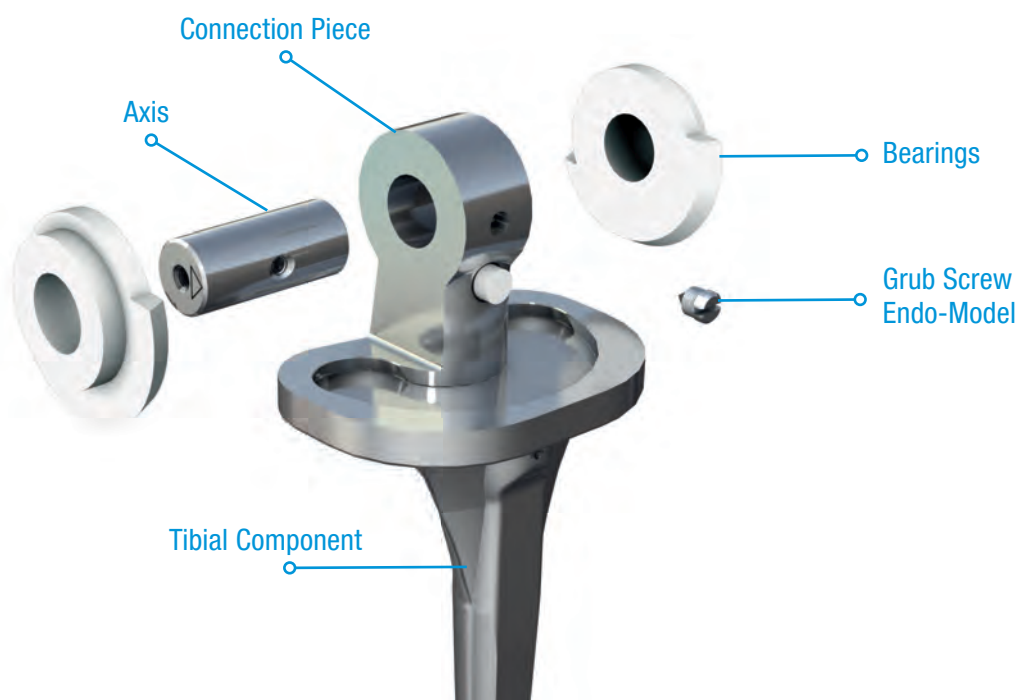
### Rotating Hinge Mechanism – *Previous Version V01* (available in the US before July 2015)



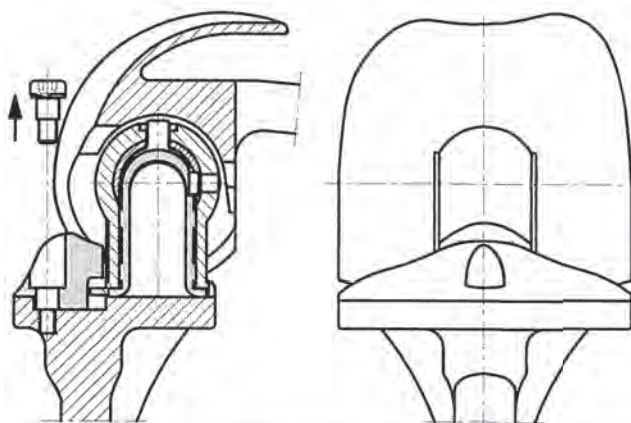
### Rotating Hinge Mechanism – *Current Version V02* (available in the US after July 1, 2015) for Endo-Model



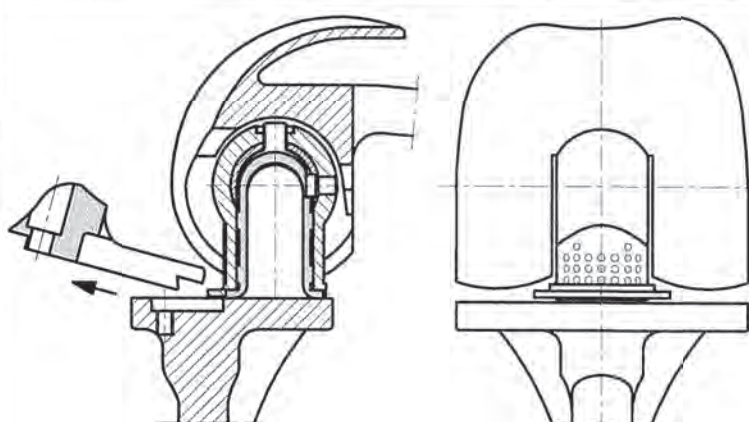
### Pure Hinge Mechanism for Endo-Model



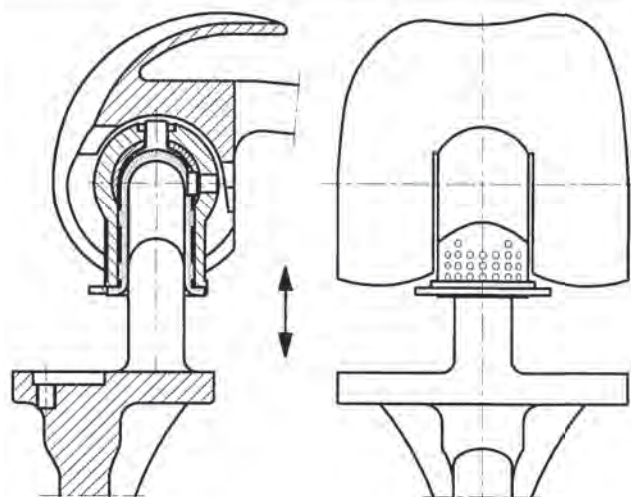
**1.1.** The plateau screw is unscrewed with the Slotted Screwdriver.



**1.2.** The PE plateau is removed with the Inserter Positioner.



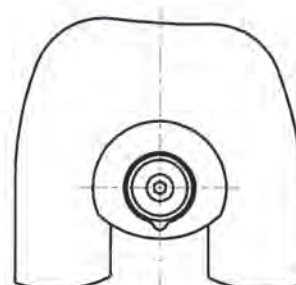
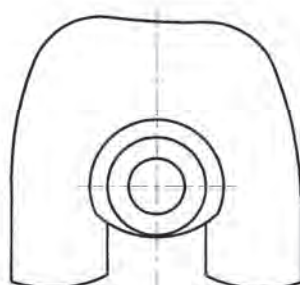
**1.3.** The two knee components are separated.



**1.4.** Previous Version V01 continue with step 2.1. – Current Version V02 continue with step 3.1.

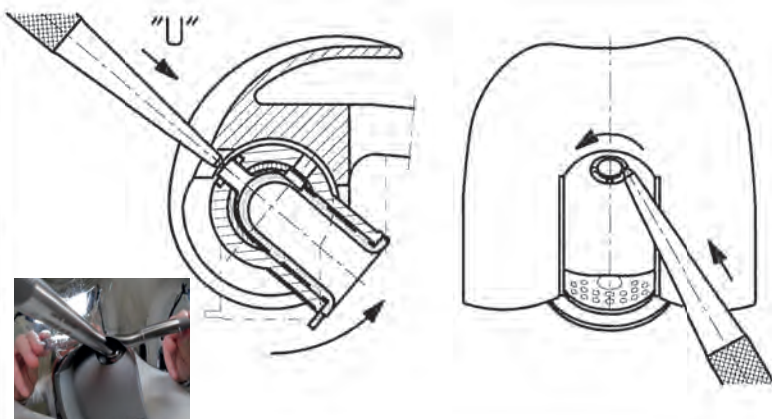
**Previous Version V01**

**Current Version V02**



## Previous Version V01

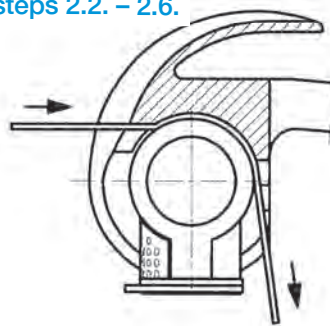
**2.1.** Set the T-axis in full flexion. The nut becomes visible. The retaining nut is undone counterclockwise using the Center Punch. As soon as the retaining nut hits against the femoral component when it is being undone, the screw must be hit down with the Center Punch. This may have to be repeated several times till the nut is freed.



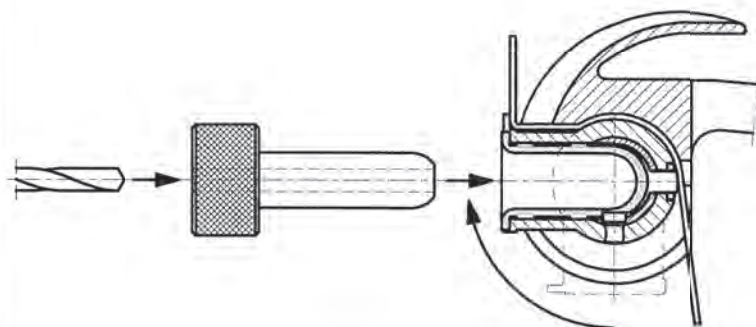
If you succeed in undoing the retaining nut, continue at 2.7.

If the nut cannot be undone, carry out the following steps 2.2. – 2.6.

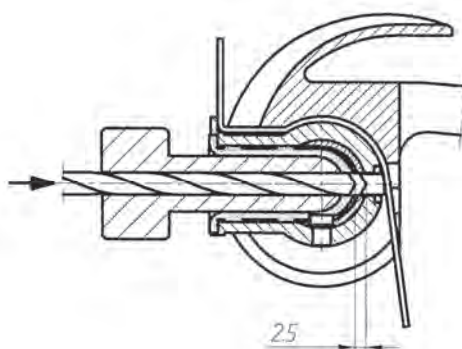
**2.2.** The cement plastic strip is pushed over the T-axis to dorsal. This is to locate the parts that will be drilled away.



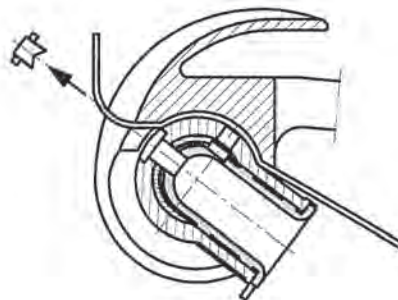
**2.3.** The T-axis is put into extension (in line with the femoral axis) and the Drill Bushing is then inserted.



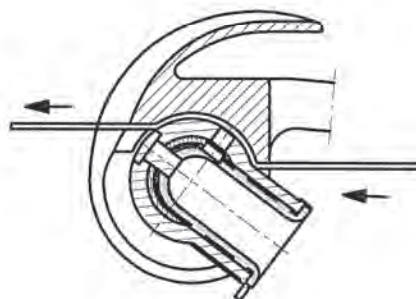
**2.4.** The securing thread of the rotation bushing is drilled using the Drill Bushing, and the Ø 5-mm-drill until the retaining thread, including the nut, is detached from the rotation bushing.



**2.5.** Move T-axis back into hyper flexion and remove the drilled-off thread component.

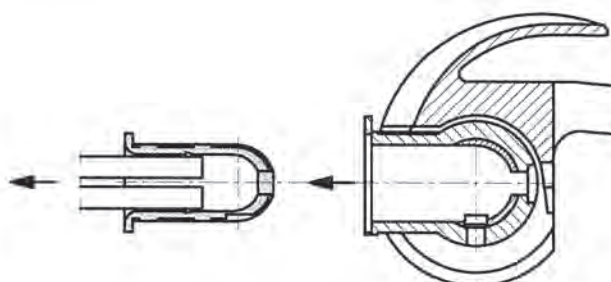


**2.6.** Then the cement plastic strip is removed.



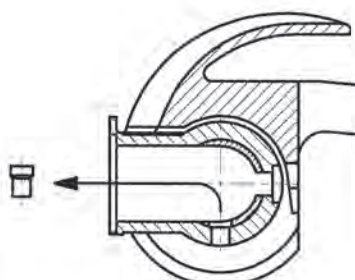
**2.7.** The rotation bushing is pulled out with an Extraction Forceps. Tighten the extraction forceps very careful to prevent jamming the bushing inside the T-axis to avoid high pressure.

**Pay attention and check that the axis connection pin stays in place.**



**2.8.** The axis connection pin must be removed inwards using forceps.

**Continue with step 4.1.**

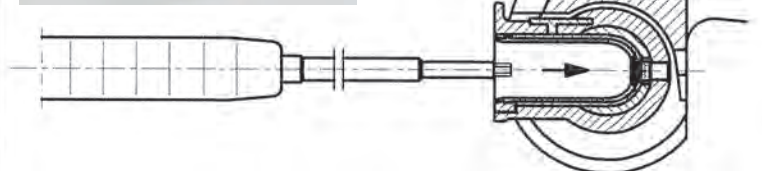


## Current Version V02

**3.1.** The fixation screw of the V02 rotation bushing is loosened with a Hex Screwdriver size 2.5 mm.

### Attention!

The screw is self-locking, which makes it more difficult to undo.



**3.2.** The rotation bushing V02 slides out automatically when the fixation screw is loosened from T-part.

If the rotation bushing comes out when the screw is loosened (left hand picture).

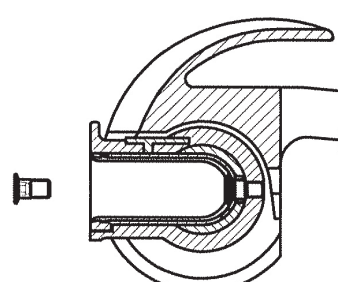
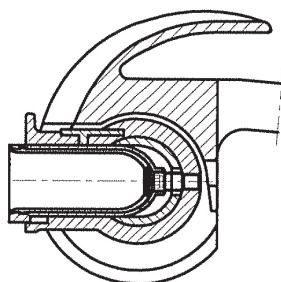
**Continue with step 3.3.**

If the rotation bushing stays in place when the screw is loosened (right hand picture).

**Continue with step 3.4.**

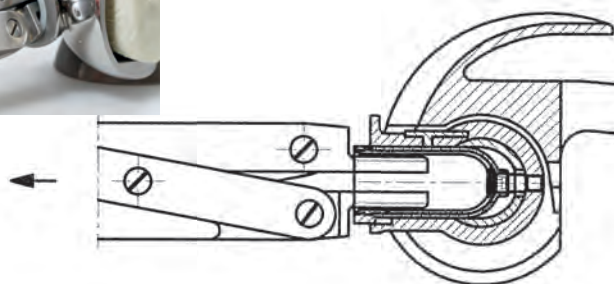
Continue with step 3.3.

Continue with step 3.4.



**3.3.** Remove the rotational bushing completely by using the extraction forceps. This has to be done carefully to prevent the bushing from being jammed in the T-axis by too much expansion pressure.

**Continue with step 3.5.**

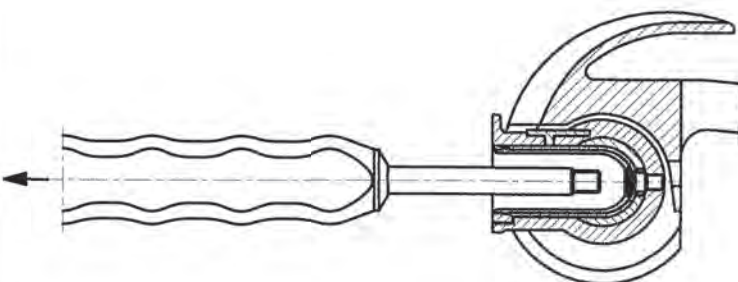


**3.4.** Screw the M5 threaded rod into the rotation bushing until the rotation bushing loosens, then extract the rotation bushing.

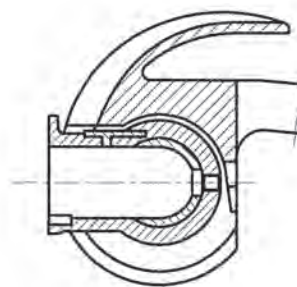
### Attention!

Due to the screw retention, the insertion will be more difficult.

**Continue with step 3.5.**



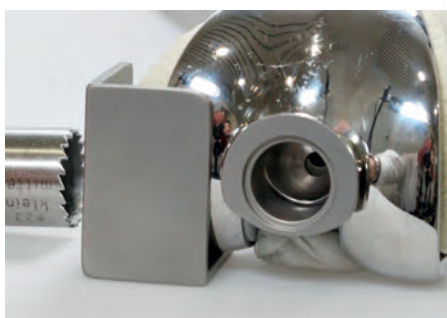
## 3.5. Illustration without rotation bushing.



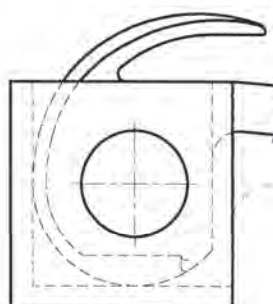
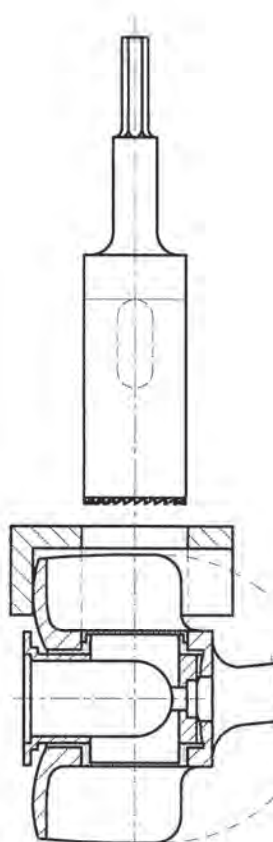
## Version V01 and V02

### 4.1. The axis is extracted only laterally for a right knee and only medially for a left knee.

The condyle is drilled using the tubular reamer until the prosthesis is contacted. The bone cylinder can be reinserted later.

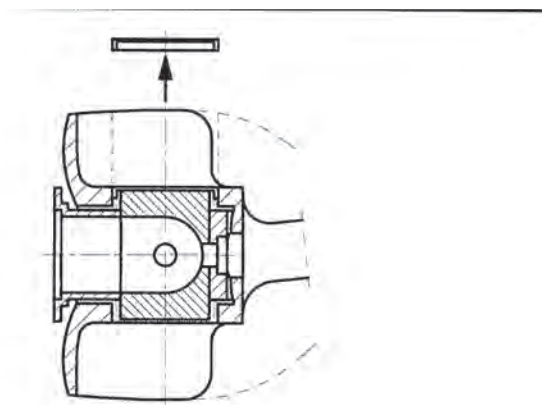


**This step is not needed if no bone is present!**

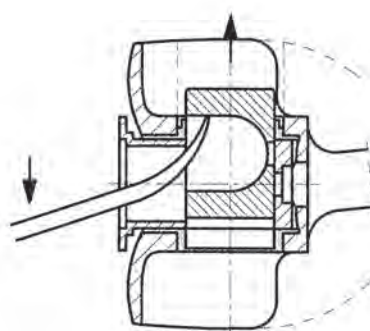


**4.2.** Remove the PE cover of the axis.

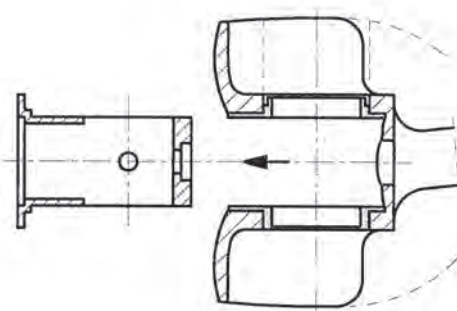
**Lateral cap for a right knee and medial cap for a left knee.**



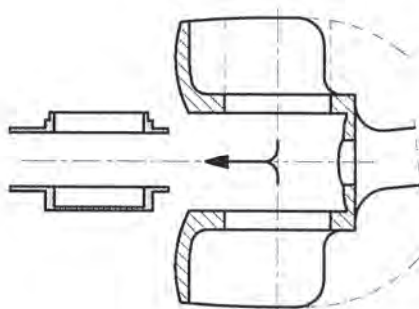
**4.3.** The axis is pressed out using the Hook (151-372/00) (to lateral in the case of a right knee – to medial if it is a left knee).



**4.4.** The T-axis is removed.

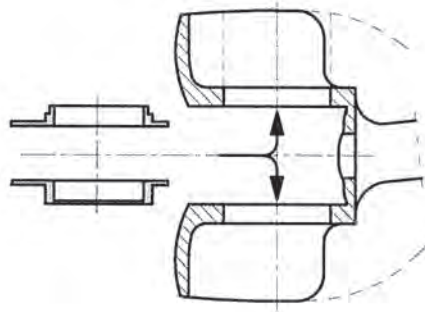


**4.5.** The bearings are pressed inward and removed.

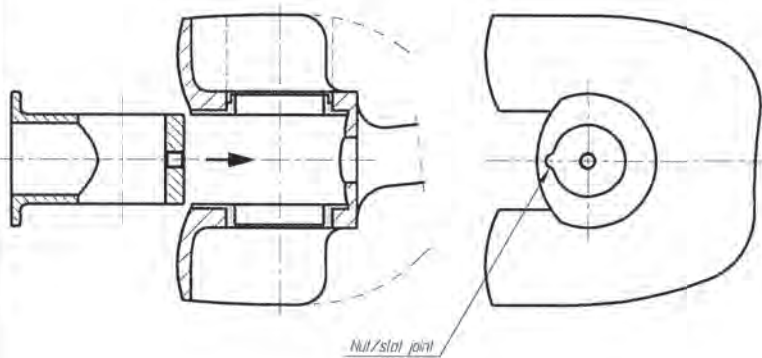


**5.1.** The replacement bearings are inserted from the inside.

**Endo-Model:** The bearing with the borehole is inserted laterally for a right knee and medially for a left knee.

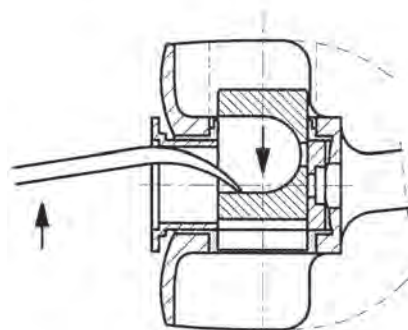


**5.2.** Install the V02 T-axis. The slot must point posteriorly.



**5.3.** Install the new axis from lateral for a right knee or from medial for a left knee.

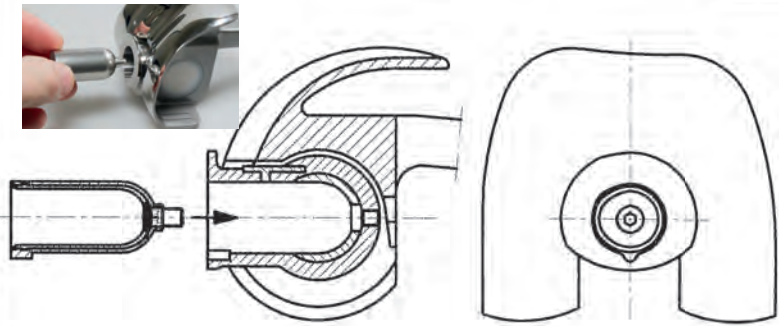
The axis can be adjusted using the Alignment Spike, install the PE cover from lateral for a right knee or medial for a left knee.



**5.4.** The new V02 rotation bushing is carefully inserted until the thread of the screw hits the thread of the V02 part.

**Attention!**

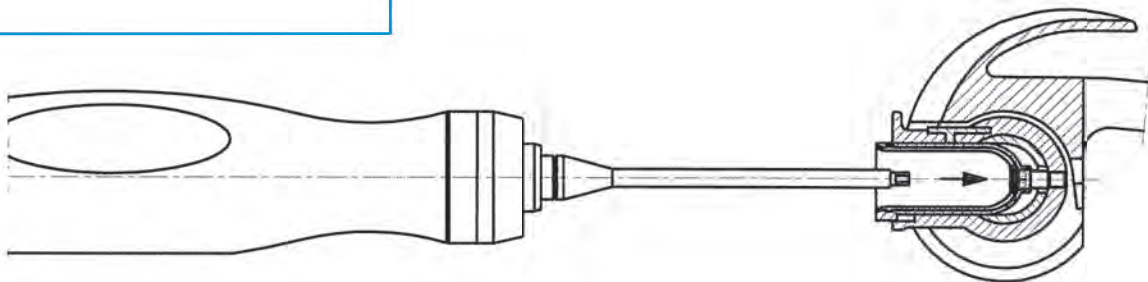
The notch of the rotation bushing must point posteriorly to properly fit into the slot of the T-axis.



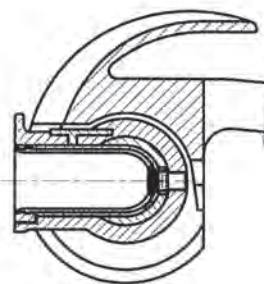
**5.5.** The fixation screw of the V02 rotation bushing is tightened with a Torque Wrench size 2.5 mm, until a „click“ is heard.

**Attention!**

Due to the screw retention, the screw insertion gives some resistance.



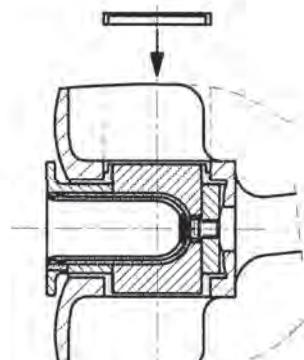
**5.6.** The rotation bushing and the T-axis must lock at even level.



**5.7.** The new polyethylene axis cover is inserted (32).

**Attention!**

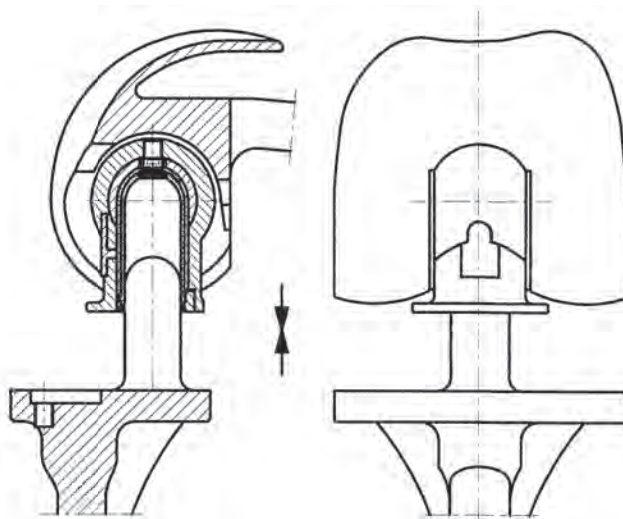
**Endo-Model:** Laterally for a right knee – medially for a left knee.



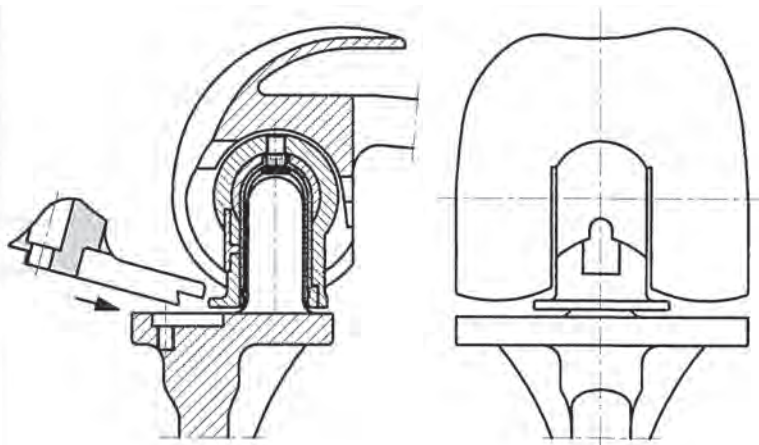
**6.1.** The knee components are assembled.

**Attention!**

If the post on the tibial component is badly scratched, it is mandatory to change the tibial component. If the existing cement mantle is left in situ, whether in its entirety or in part, make certain that the tibial component is replaced at the same height to achieve full extension. Do not use a centralizer if it will raise the height of the tibia.



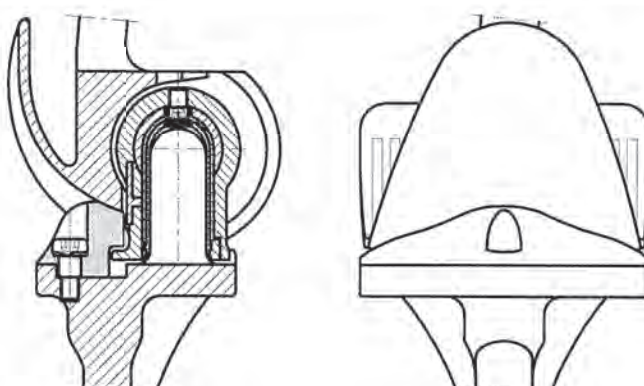
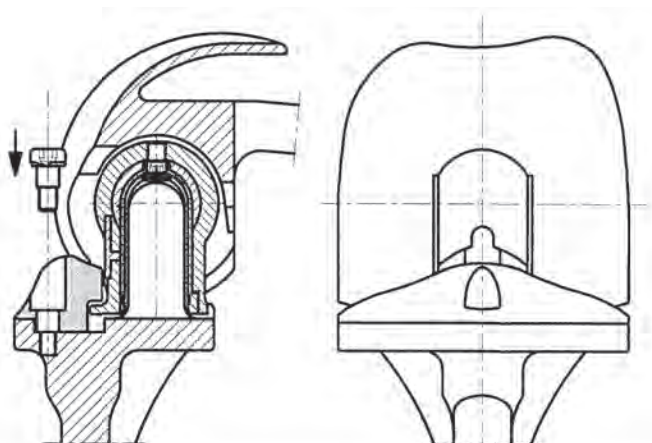
**6.2.** Inserting the replacement tibial plateau with the Inserter Positioner.



Confirm that the posterior dovetails are fully engaged on the medial and lateral side.

**6.3.** The replacement plateau screw (V02) is screwed in with the Hex Screwdriver size 3.5 mm.

**The screw head is round.**



V02 Spare Part Sets for Endo-Model Rotational Knee Prostheses

Spare part sets, for V02 rotational knee prostheses, with anti-luxation device

**MAT** CoCrMo

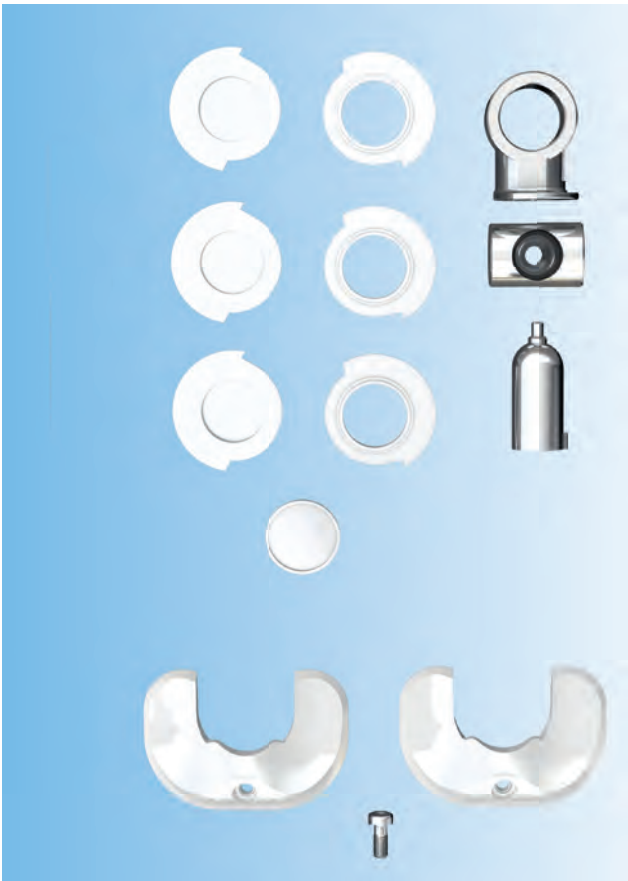
REF	Page	Size
15-0027/10	right/left	x-small
15-0027/11	right/left	small
15-0027/12	right/left	medium
15-0027/13	right/left	large

Version V02

Each package contains:

- Complete coupling mechanism
- Bearings
- PE plateau and plateau anchoring screw

Required: V02 additional instrument set



Spare part sets, for V02 rotational tibial plateaus, with fixation screw

**MAT** UHMWPE/CoCrMo

REF	Size
15-0027/17	x-small
15-0027/14	small
15-0027/15	medium
15-0027/16	large

Version V02

Each package contains:

- PE plateau and plateau anchoring screw



## V02 Spare Part Set for Endo-Model Hinge Knee Prostheses

**Spare part sets, for V02 hinge knee prostheses,**  
with anti-luxation device

**MAT** UHMWPE/CoCrMo

REF	Page	Size
15-0027/20	right	x-small
15-0027/21	right	small
15-0027/22	right	medium
15-0027/23	right	large
15-0027/30	left	x-small
15-0027/31	left	small
15-0027/32	left	medium
15-0027/33	left	large



### Version V02

Each package contains:

- Complete coupling mechanism
- Bearings
- PE plateau and plateau anchoring screw

## V02 Spare Part Sets for Endo-Model Rotational Knee Prostheses with LINK PorEx\*

**Spare part sets, for V02 rotational tibial plateaus,**  
with fixation screw

**MAT** CoCrMo/LINK PorEx\*/UHMWPE

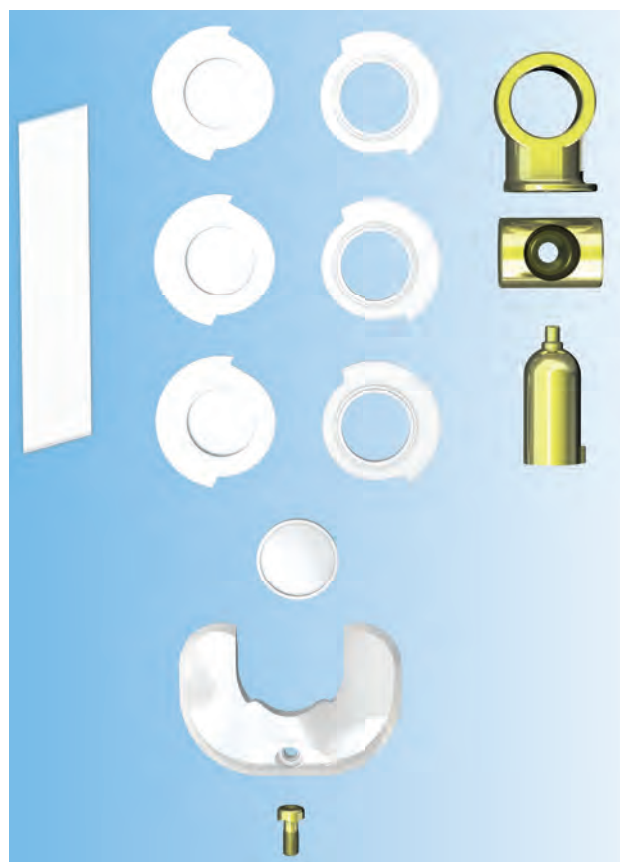
REF	Size
15-3027/10	x-small
15-3027/11	small
15-3027/12	medium
15-3027/13	large

### Version V02

Each package contains:

- Complete coupling mechanism
- Bearings
- PE plateau and plateau anchoring screw

Required: V02 additional instrument set



**Spare part sets** with anti-luxation device

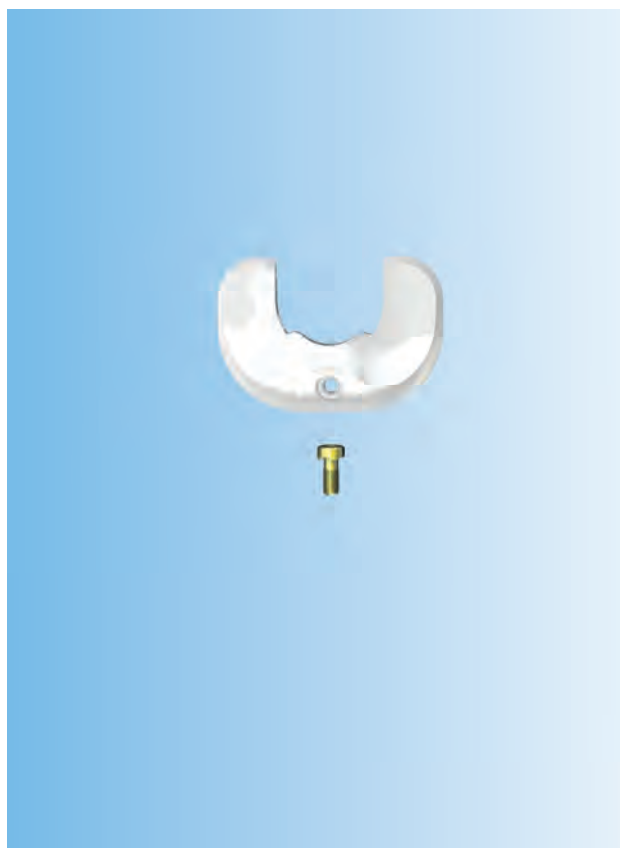
**MAT** CoCrMo/LINK PorEx\*/UHMWPE

REF	Size
15-0037/17	x-small
15-0037/14	small
15-0037/15	medium
15-0037/16	large

### Version V02

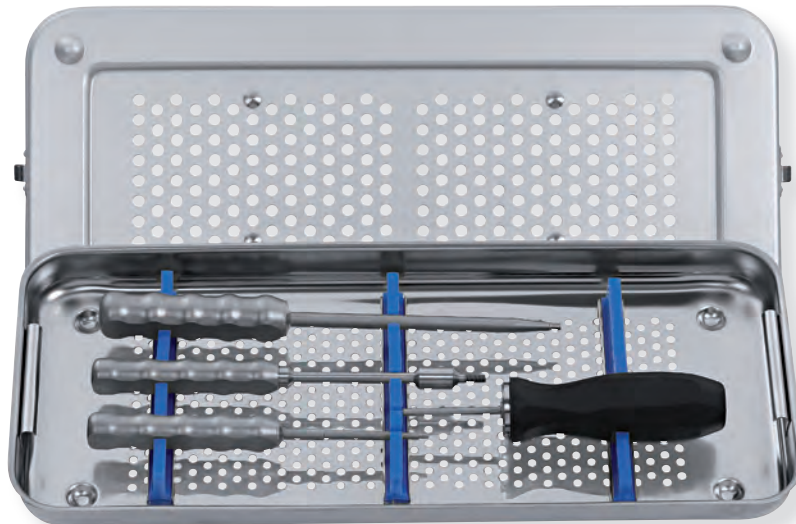
Each package contains:

- PE plateau and plateau anchoring screw

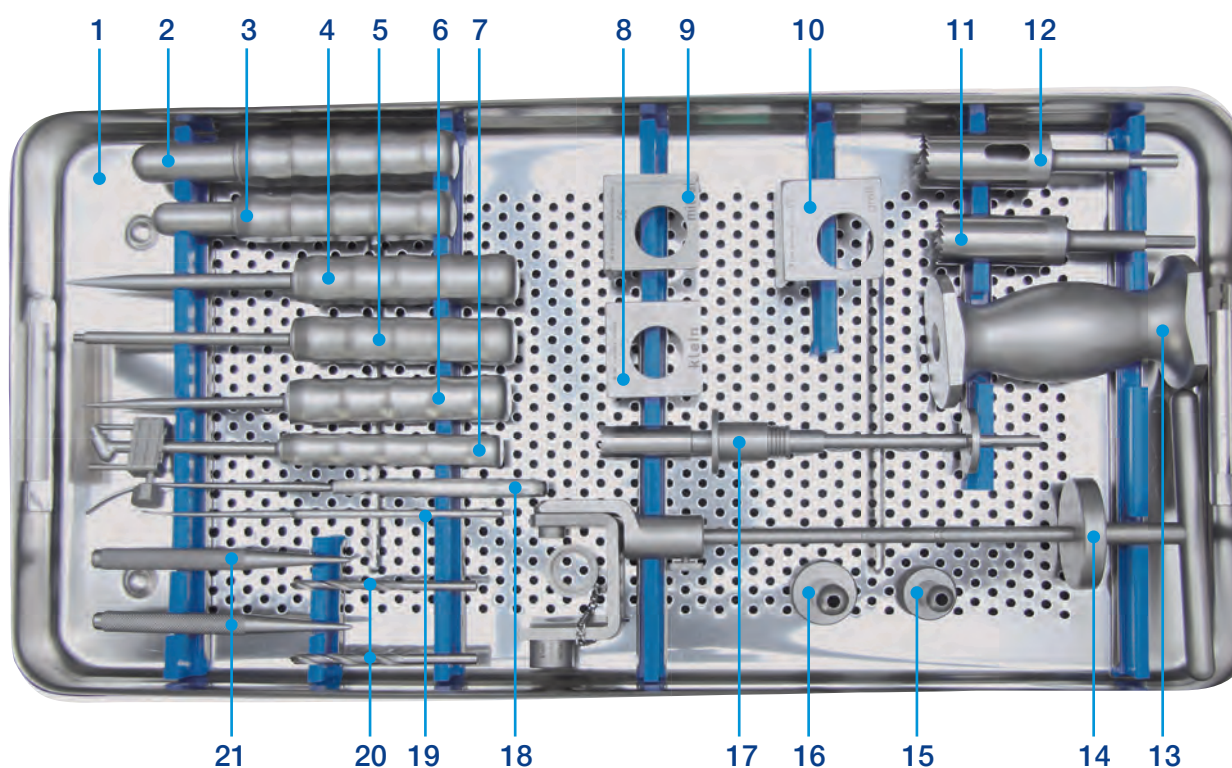


\* LINK PorEx: TiNbN = Titanium-Niobium-Nitride; surface modification (gold color).

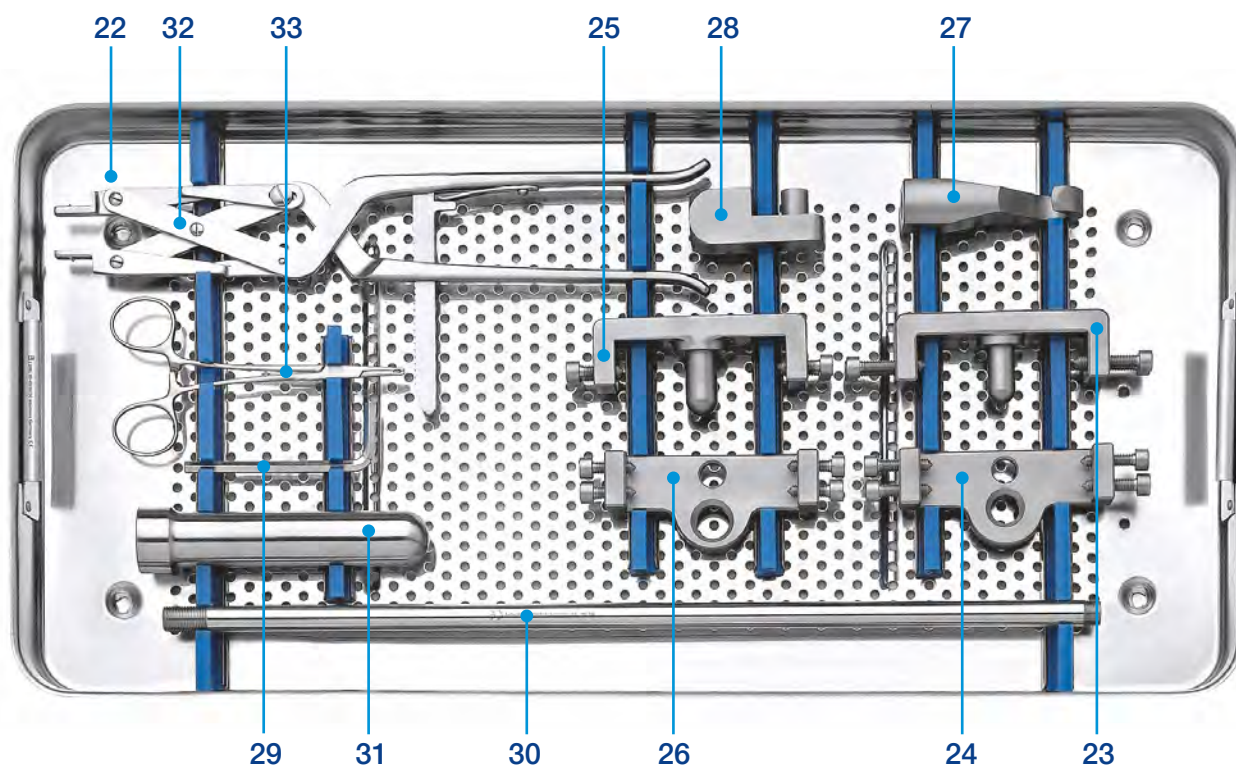
**Additional Instrument Set for V02 coupling mechanism  
for Endo-Model– M and Endo-Model Rotational Knee Prosthesis**



REF	Additional Instrument Set V02 (V02 coupling mechanism)
15-2529/90	Set complete, in 1 small container, on 1 tray with storage racks consisting of:
05-1000/01	Small Container K1, empty, 460 x 190 x 92 mm
15-2529/91	Instrument Tray, empty, stainless steel, 405 x 165 x 50 mm
64-8008/02	Hex Screwdriver, with metal handle, wrench size 3.5 mm, 250 mm
15-2544	Separate Rod, for removal of the rotating bushing version V02, Ø M5, 210 mm
10-5373/01	Hex Screwdriver, with metal handle, wrench size 2.5 mm, 180 mm
15-2545	Torque Wrench, wrench size 2.5 mm, 205 mm

**99-0027/60 Replacement of Rotational Bushing**


1	99-0036/41	<b>Instrument Tray</b> , Rotating Hinge, empty, upper tray
2	15-0036/43	<b>Alignment Spike</b> , size L
3	15-0036/42	<b>Alignment Spike</b> , size XS – M
4	322-145	<b>Screwdriver</b>
5	15-2550	<b>Screwdriver</b> for fixation screws, 198 mm
6	15-2540	<b>Separate Rod</b> for inserting the axis, 205 mm
7	15-8035	<b>Insertion Positioner</b> for tibial plateaus
8	99-0036/47	<b>Drill Guide</b> , small
9	99-0036/48	<b>Drill Guide</b> , medium
10	99-0036/49	<b>Drill Guide</b> , large
11	99-0036/50	<b>Tubular Reamer</b> , small/medium
12	99-0036/51	<b>Tubular Reamer</b> , large
13	15-1436/14	<b>Slap Hammer</b>
14	15-2581	<b>Drill Guide</b>
15	99-0036/45	<b>Drill Bushing</b> , small/medium
16	99-0036/46	<b>Drill Bushing</b> , large
17	15-2582/06	<b>Trephine</b> , for axis hole, Jacobs fitting
18	75-3725	<b>Nerve root Dissector</b> , 210 mm
19	99-0036/52	<b>Hook</b>
20	15-1436/09	<b>Metal Drill</b> , 85 mm, Ø 5 mm
21	99-0036/44	<b>Centre Punch</b>

**99-0027/60 Replacement of Rotational Bushing**


22	99-0036/30	<b>Instrument Tray</b> , Rotating Hinge, empty, lower tray
23	99-0036/31	<b>Head Segment</b> , for extraction instrument, size: small/medium
24	99-0036/32	<b>Head Segment</b> , for extraction instrument, size: small/medium
25	99-0036/33	<b>Head Segment</b> , for extraction instrument, size: large
26	99-0036/34	<b>Head Segment</b> , for extraction instrument, size: large
27	99-0036/35	<b>Head Segment</b> , for extraction instrument hinged knee, size: small/medium/large
28	99-0036/36	<b>Head Segment</b> , for extraction instrument hinged knee, size: small/medium/large
29	99-0036/37	<b>Hex Screwdriver</b> , hex. 5 mm
30	99-0036/38	<b>Stem</b>
31	15-1436/13	<b>Handle</b>
32	99-0036/40	<b>Extraction Forceps</b> for rotational bushing
33	99-0036/39	<b>Forceps</b> for axis peg



For more information please register for our Media Library ([linkorthopaedics.com](http://linkorthopaedics.com))

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!**

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