LINK®

MP Reconstruction System

Uncemented & Cemented A

Surgical Technique

CE 0482

Explanation of Pictograms			
	Manufacturer	REF	Article number
MAT	Material number	CE	Product meets the applicable requirements, which are regulated in the EU harmonization legislation for the affixing of the CE marking.

MP Reconstruction System
Uncemented & Cemented A

02 **System Overview**

Surgical Technique
03 Preoperative Planning
05 Surgical Technique, uncemented
15 Surgical Technique, cemented

Implants
18 Hip Prosthesis Stems, uncemented
19 Hip Prosthesis Stems, cemented
20 Neck Segments
21 Proximal Spacers and Expansion Bolts
22 Compatibility between Neck Segments, Proximal Spacers and Expansion Bolts

Instruments
23 Complete Instrument Set
24 MP General Instruments
25 MP Modular Basic Instruments
26 Instrument Trays 3-10
31 MP Modular 160 mm

Additional Instruments
32 Upgrade Kit
33 Extraction Instruments

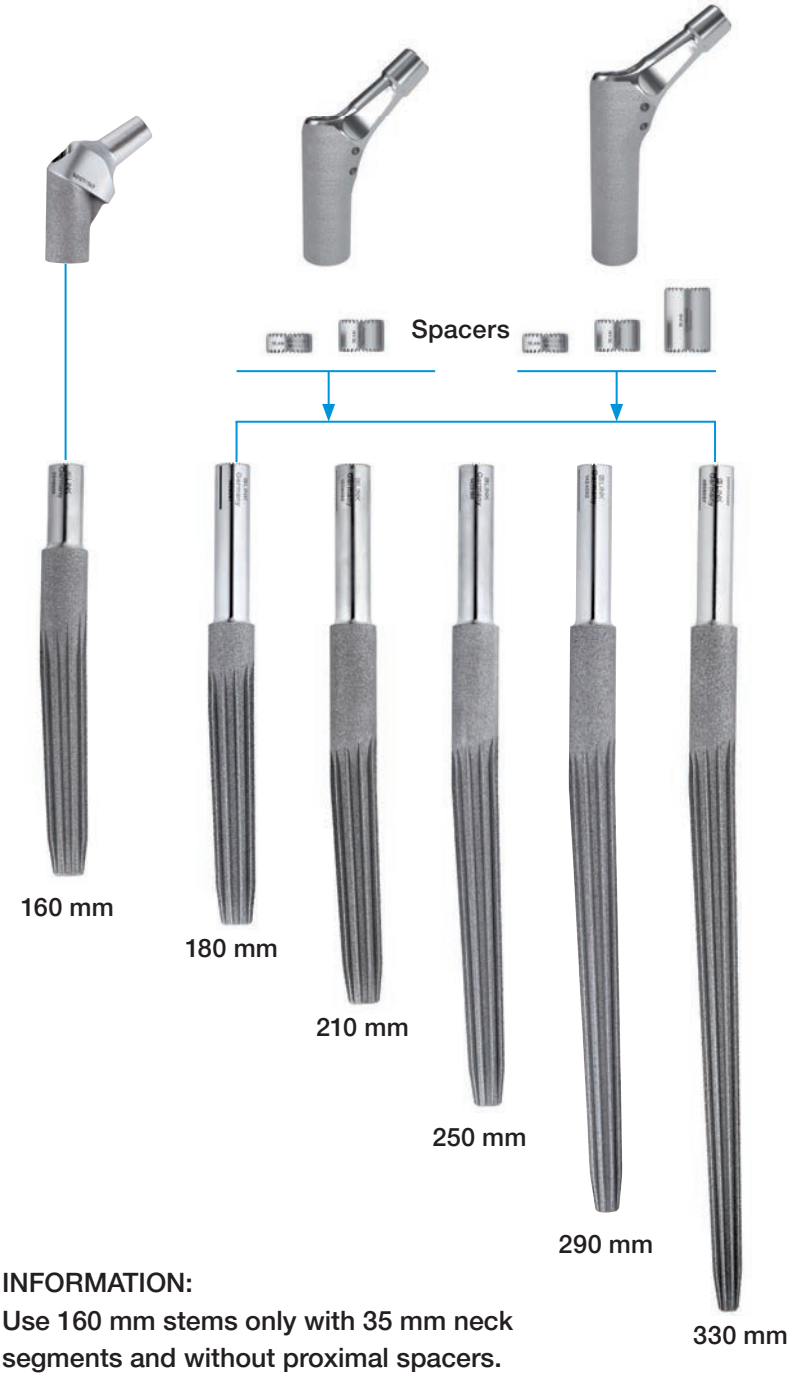
Accessories
34 X-ray Templates, Cleaning and Care Instructions

Literature
35 Reprints, Additional Information

Important Information

Hip Prosthesis Stems, uncemented
MAT Tilastan-S (TiAl6V4 alloy)
160 - 210 mm - Ø12 mm
160 - 330 mm - Ø14, 16, 18, 20, 22.5, 25 mm

Expansion bolts
41 mm and 61 mm



Neck segments

Standard
35 mm: CCD 126° and 135°

Slim
45 mm and 65 mm:
CCD 126°, 131° and 136°

Defect Reconstruction
45 mm and 65 mm: CCD 126° and 131°

with suture holes Standard
35 mm: CCD 126°

35 mm neck segments cannot be used with proximal spacers

Hip Prosthesis Stems, cemented
MAT EndoDur-S (CoCrMo alloy)

INFORMATION:
Use 160 mm stems only with 35 mm neck segments and without proximal spacers.

Do not use 210 mm / Ø12 mm stems with proximal spacers.

The MP Reconstruction System is for uncemented use. Only cemented labeled modular stems are indicated for cemented use.

Preoperative Planning

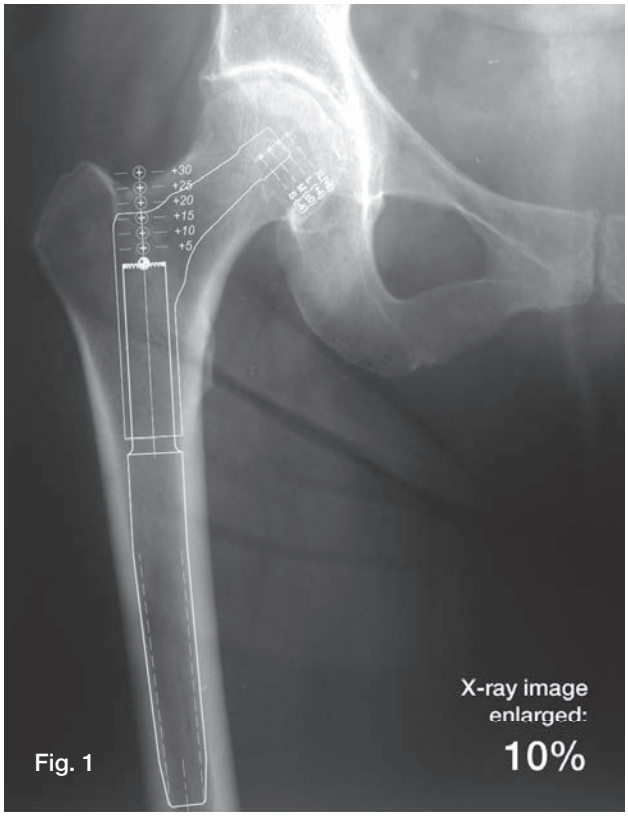


Fig. 1

Templating aids as a first orientation in terms of implant choice and implant positioning. Planning templates are available for this purpose (Fig. 1).

The templating should be performed using high-quality AP and ML X-rays. Each X-ray should be large enough to apply the whole template.

Choice of implant sizes and types

As general rule, the prosthesis stem should be measured in such a way that positive-fit anchoring of the prosthesis is created over a sufficient length in vital bone. To this end, it is necessary to make allowance for reaming of the cortical bone. The reduction of the cortical wall thickness caused by reaming should not exceed 1.5 mm in the planning. In order to restore the proper offset and center of rotation, the acetabular cup center of rotation is matched with the desired head center of rotation of the neck segment.
The MP Reconstruction System offers three offsets with different CCD angles. This combined with femoral heads with up to four head-neck lengths, allows the surgeon great flexibility.

In-situ implants and the bone cement must be completely removed before implanting a MP Reconstruction System.

Preoperative planning supports optimal surgical outcomes by ensuring the most appropriate implants are selected for the patient. The key objectives are to correctly position the central rotational point of the hip, to achieve the correct leg length and finally preserve or restore sufficient soft tissue tension by avoiding medialization of the femur.

INFORMATION:
Templating is an important element of the preoperative planning. However, final decisions regarding implant choice and fit should be made intra-operatively to ensure appropriate leg length and joint stability.

Standing, weight bearing X-rays are recommended.

Both an AP and a lateral X-rays should be used to determine the required implant sizes.

Account for pelvic tilt to ensure correct positioning of the implants.

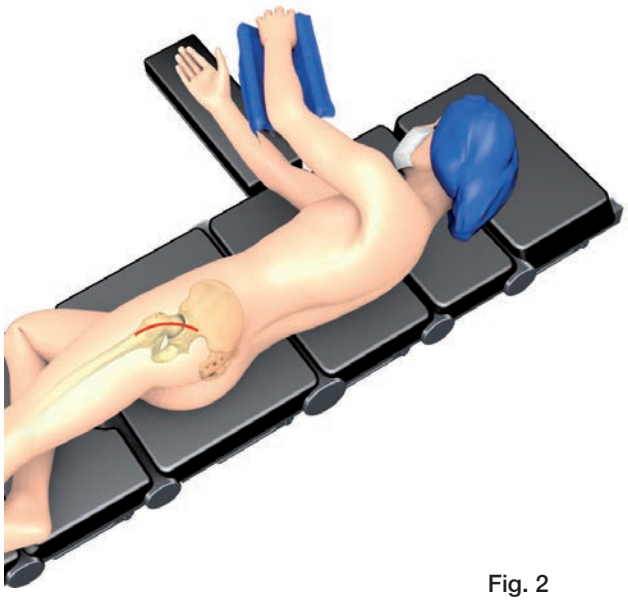


Fig. 2

Patient positioning / Surgical approaches

The surgeon is free to choose the surgical approach on the basis of their experience and judgment, and according to the specific situation. The following illustration shows the visualization with a posterior approach and with the patient in the lateral position (Fig. 2).

The surgical instructions below for restoring a damaged hip joint using the MP Reconstruction System depict an idealized surgical situation.
However, every procedure has individual particularities, and the surgeon decides during the surgery which method can be expected to achieve the most success in each case.

Fig. 3

Opening

After careful removal of the previous implant and any associated cement, the greater trochanter and proximal femur are cleared with the Proximal Start Reamer, in order to allow easy, axial access into the femoral canal (Fig. 3).

Reaming of Medullary Canal

Reaming of the femoral canal begins with a **tapered reamer** corresponding to the planned prosthesis stem length (A), but with a diameter 1-2 sizes smaller than the planned stem diameter; this does not apply when using the smallest diameter (Ø12 mm 160-210 mm).

The reaming depth is determined by the position of the ring markings on the shaft of the tapered reamer. The ring markings refer to the stem length. The marking should be in relation to an anatomical landmark on the bone, determined during the preoperative planning.

If no proximal spacers are used, the position of the lower marking ring should be at the medial level of the original femoral neck resection (Fig. 4). This landmark can be easily identified on the X-ray, enabling a reference marking to be determined for the surgery.

INFORMATION:
The fourth ring is approximately at the level of the tip of the greater trochanter, and the lower ring a thumb's breadth above the lesser trochanter – always without the use of proximal spacers.

The tapered reamers should only ever be driven into the femoral canal as far as indicated by the position of the marking ring to the specified landmark.

Reaming must be performed carefully. The tapered reamer must not become hot to the touch. Reaming must be performed by hand.

The last tapered reamer is used to prepare the medullary canal until contact is made with the endosteal cortical bone until adequate endosteal engagement is achieved (Fig. 4).

The surgeon can check whether the contact surface is sufficiently large when the last tapered reamer is carefully removed clockwise. Bone particles on the tapered reamer shaft can provide information on the reaming distance.

The last reaming step must always be performed with a diameter identical to that of the implant stem. For example, if an implant with Ø18 mm is used, the last reaming step must be performed with a Ø18 mm tapered reamer.

If a 160 mm stem is used, please consider page 13 ‚Implantation of 160 mm stems'.

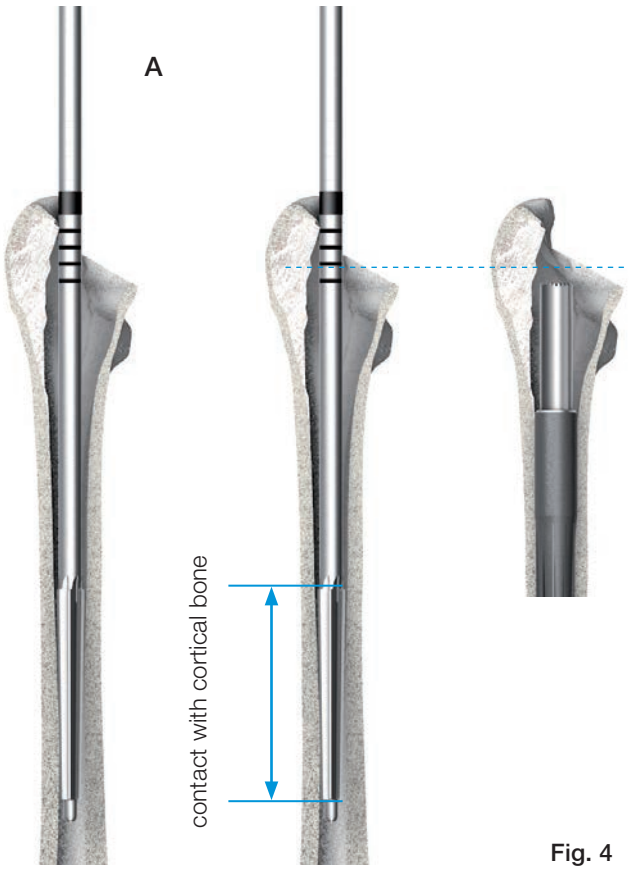


Fig. 4

Reaming depth without proximal spacer(s)

Insertion of the Prosthesis Stem

The selected **MP stem** (Fig. 6, B), which corresponds to the size of the last tapered reamer used, is screwed tightly to the **inserter for stems** by using the hex screwdriver (Fig. 6, C).

The line marking on the stem marks the 3° kink. The orientation of the marking is used for a better positioning when inserting the stem. The arrow on the striking surface indicates where the kink of the stem is. This allows inserting the MP stem into the femoral canal precisely aligned to the natural curvature of the femur (Fig. 6/with curvature).

The stem is then carefully driven in to the final depth using a mallet. The final position must be verified by means of radioscopic control (Figs. 7 and 8).

The stem must not be driven in deeper than intended in the preoperative planning.
Should it prove impossible to achieve stable fixation of the stem at the intended depth due to poor bone quality, any shortening of the leg that results from driving the stem in deeper can be compensated by using proximal spacers of up to 30 mm (5 - 30 mm in 5 mm steps).
Intentional lengthening of the leg is also possible with a proximal spacer (see Fig. 5).

Secure fixation of the stem in the medullary canal is always given utmost priority.

Use of proximal spacers:

Leg length:	± 0 mm	± 0 mm	± 0 mm	+ 10 mm

Fig. 5

Fig. 6

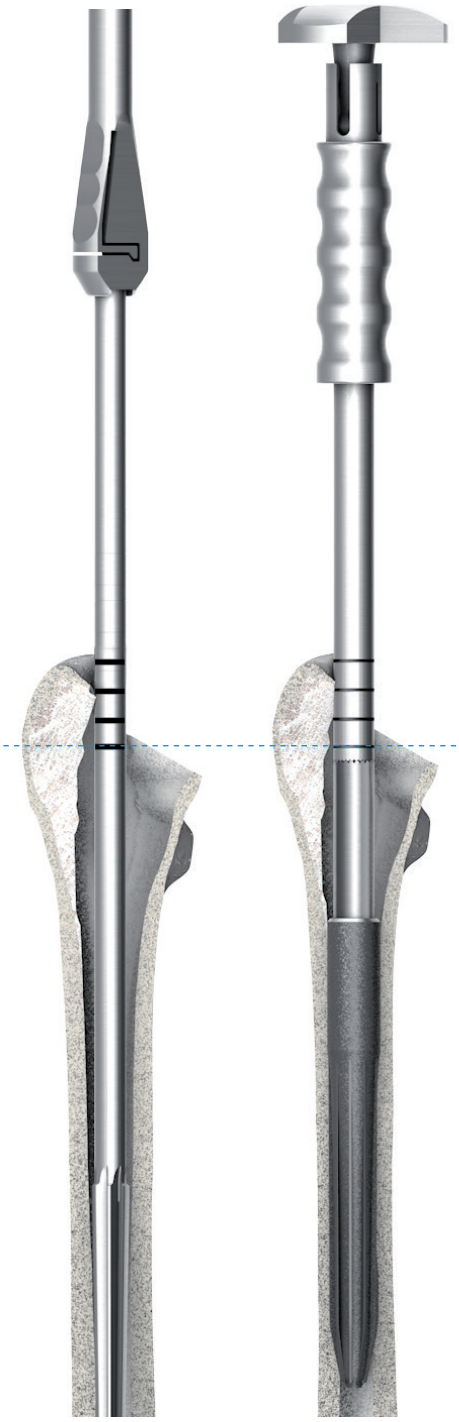


Fig. 7

Fig. 8

Preparation of the proximal femur

If required, the tubular reamer is used to prepare the implant bed for the neck segment (Fig. 10).

There are **two reaming guides** available for positioning the reamer on the in-situ stem. Their length must be selected according to the neck segment being used (Fig. 9).

Neck segment	Reaming guide
short (45 mm)	long - gold (y)
long (65 mm)	short - silver (x)

The reamer guide can be screwed into the stem by hand or using the hex screwdriver.

The reamer guide also serves as a stop to avoid the teeth of the tubular reamer from coming into contact with the edge of the lower part of the stem.

Irrigation is recommended to avoid overheating of the bone.

If a 160 mm stem is used, please consider page 13 ‚Implantation of 160 mm stems‘.

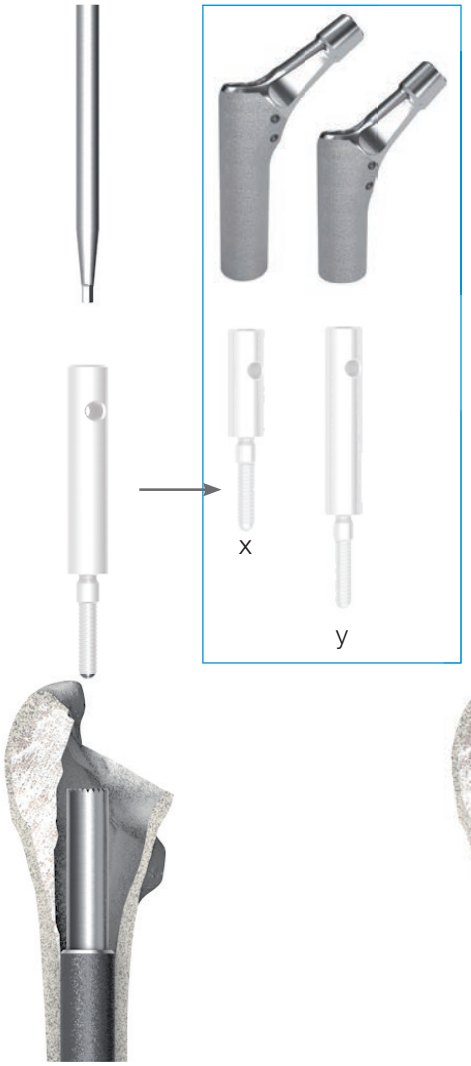


Fig. 9

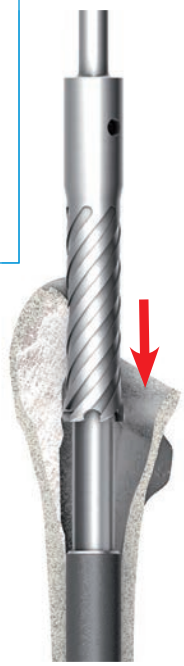


Fig. 10

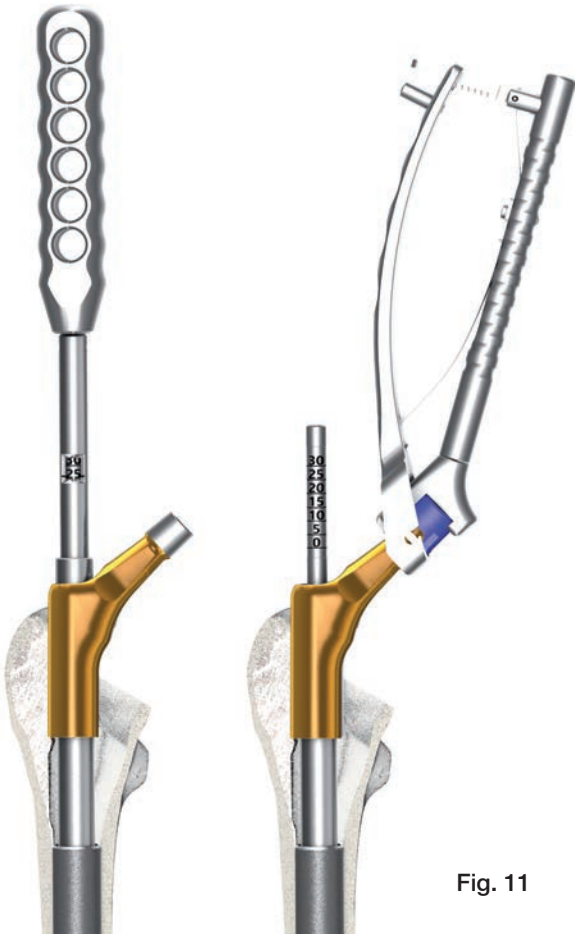


Fig. 11

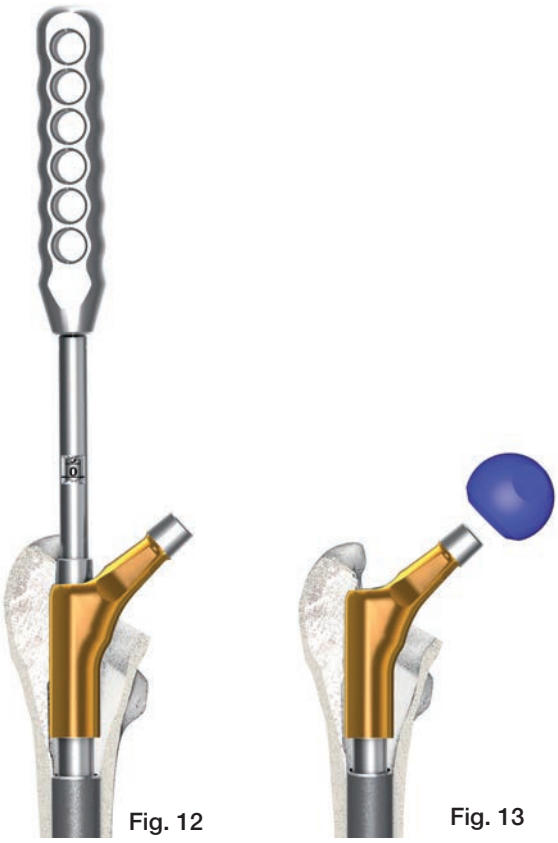


Fig. 12

Fig. 13

Trial Reduction

Insert the guide rod into the stem using the hex screwdriver. The trial neck segment is then slid over the guide rod onto the stem either by hand or insertion forceps (Fig. 11 right). The neck can be driven into its final position with gentle hammer strokes, using the neck inserter / screwdriver (Fig. 11 left). If spacers are used, trial spacers are slid over the guide rod before inserting the neck segment.

The final position of the neck segments is indicated by the scale within the window of the neck inserter. If the markings of the guide rod and neck inserter **touch**, the window displays the spacer height (Fig. 12):
- if no spacer is used, the reference is the „0“ line.

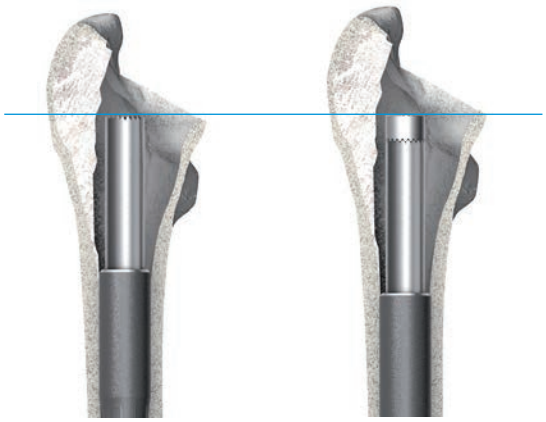
- if spacers are used, the total spacer height is the reference line (e.g., for 5 mm + 10 mm spacers, the reference line is „15“).

The guide rod is removed and the neck fixed with a trial screw using the hex screwdriver.
Use the short screw with no spacers or up to +10 mm.
Use the long screw with spacers between +15 mm and +30 mm.

Various Trial Heads are used to check for optimal offset, correct leg length and adequate stability. The range of motion is also checked in order to exclude any impingement of bone or implant with the acetabular cup, and to prevent any instability (Fig. 13).

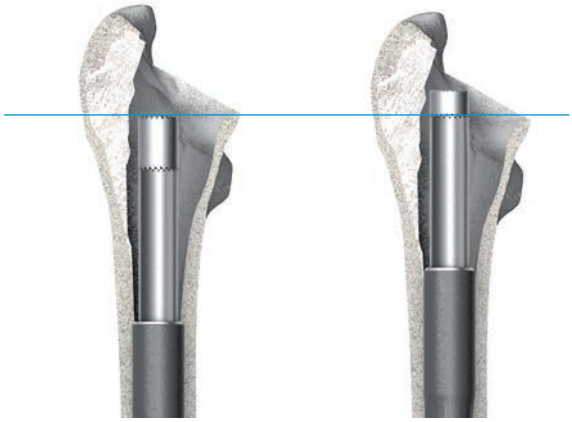
The trial components are removed.

Use of proximal spacers:



Leg length: ± 0 mm **± 0 mm**

Fig. 14



± 0 mm **+ 10 mm**

Fig. 15

Leg length and lateralization

Leg length can be corrected by 5 mm, 10 mm, 15 mm, 20 mm, 25 mm or 30 mm (or combination of any, but no more than two proximal spacers) by using trial proximal spacers.

Fine tuning of the leg length and different lateralization of the prosthesis stem can be achieved by selecting:

- Neck segment with low (32 mm), standard (38 mm) or high (46 mm) offset with no change in leg length or
- Trial head with suitable head-neck length; changing both leg length and offset

INFORMATION:
Short trial neck segments (45 mm) must not be used with more than +10 mm proximal spacers (Fig. 16).

Anteversion of the neck segment

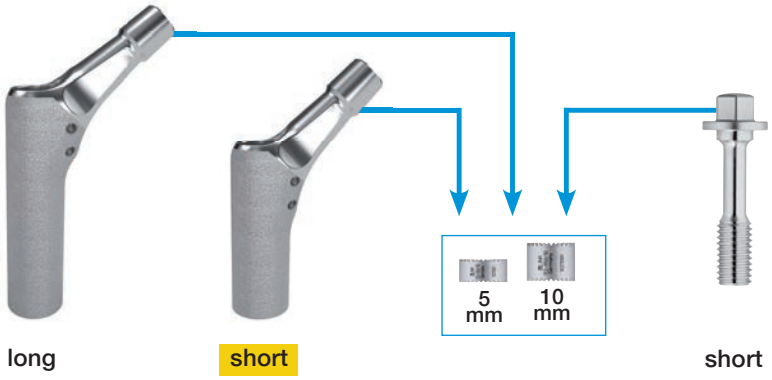
The anteversion can be adjusted by turning the trial neck segment after loosening the fixation screw. The desired position should then be marked on the bone so that the final neck segment can be positioned correctly.

INFORMATION:
Use a short trial fixation screw with no, 5 mm or 10 mm proximal spacers. Use a long trial fixation screw with any spacer combination longer than 10 mm. (Fig. 16).

INFORMATION:
In case the 45 mm neck segment is replaced with 65 mm neck segment, the reaming with tubular reamer may be required, due to the longer distal neck part.

Once the leg length, anteversion and joint stability have been checked, the trial prosthesis can be removed.

Combinations of Expansion bolts and Proximal spacers



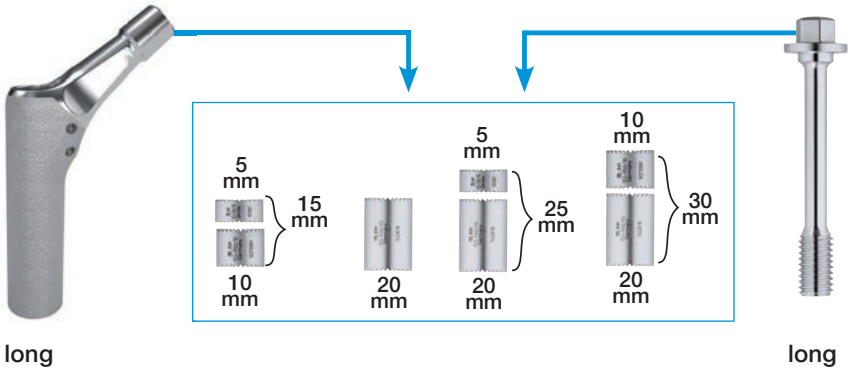


Fig. 16

Fig. 17

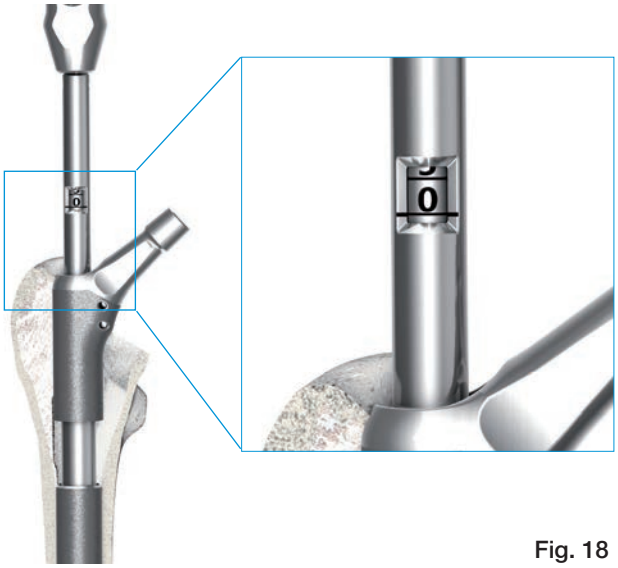


Fig. 18

Implantation of neck segment

> **INFORMATION:**
> **All components and interfaces must be clean before assembly.**

Insert the guide rod into the stem using the hex screwdriver. The neck segment is then slid over the guide rod onto the stem either by hand or insertion forceps (Fig. 17 right). The neck segment can be driven into its final position with gentle hammer strokes, using the neck inserter (Fig. 17 left).
If spacers are used, they are slid over the guide rod before inserting the neck segment.

The final position of the neck segments is indicated by the scale in the neck inserter / screwdriver‘s window (Fig. 18). If the markings of the guide rod and neck inserter **touch**, the window displays the spacer height:
- if no spacer is used, the reference is the „0“ line (Fig. 15b).

- if spacers are used, the total spacer height is the reference line (e.g., for 5 mm + 10 mm spacers, the reference line is „15“).

Once the neck segment is in the final position, the guide rod is removed and the neck fixed with the expansion bolt, using the neck inserter.
Use the short expansion bolt with no spacers or up to +10 mm. Use the long expansion bolt with spacers between +15 mm and +30 mm (Fig. 16).

A final trial reduction can be achieved using a plastic trial head. If necessary, the anteversion can now be adjusted by loosening the expansion bolt again. Reinsert the guide rod into the stem, then lift the neck slightly to rotate it. Then the alignment steps are repeated as described above.

Final assembly of the implant

After the expansion bolt is hand tighened with the neck inserter / screwdriver, the expansion bolt is tighened with the torque wrench. When tightening the expansion bolt with the torque wrench, the insertion forceps are used as a counter torque by gripping the neck segment over the trunnion. Once the necessary torque is reached, the torque wrench emits a loud snap (Fig. 19).

INFORMATION:
The taper caps of the insertion forceps must be checked for damage before use.

CAUTION:
Expansion bolts can only be used once. It is not possible to reuse them because no expansion occurs when the bolt is tightened a second time. The torque wrench must never be used to loosen screw connections, as this could have a negative effect on its function.

Fig. 19

Attaching the prosthesis head

The taper of the neck segment is carefully cleaned and dried. This is particularly important with ceramic heads. Then the head is attached by hand with a rotational movement, applying axial pressure. To finish, the driver is used to tap the prosthesis head into position (Fig. 20).

Fig. 20

Final reduction of the joint

After cleaning the joint surfaces, the joint is reduced. The wound is closed in layers.

Implantation of 160 mm stems

160 mm stems are only combined with 35 mm neck segments without proximal spacers.
In this case, the Instruments for MP Modular 160 mm are necessary.
All surgical steps are identical to the surgical technique described above for uncemented stems.
For the proximal femur preparation, the long silver reaming guide 134-204/65 is used.
When using the insertion forceps, replace taper cap 179-122/01 with 131-830/04.

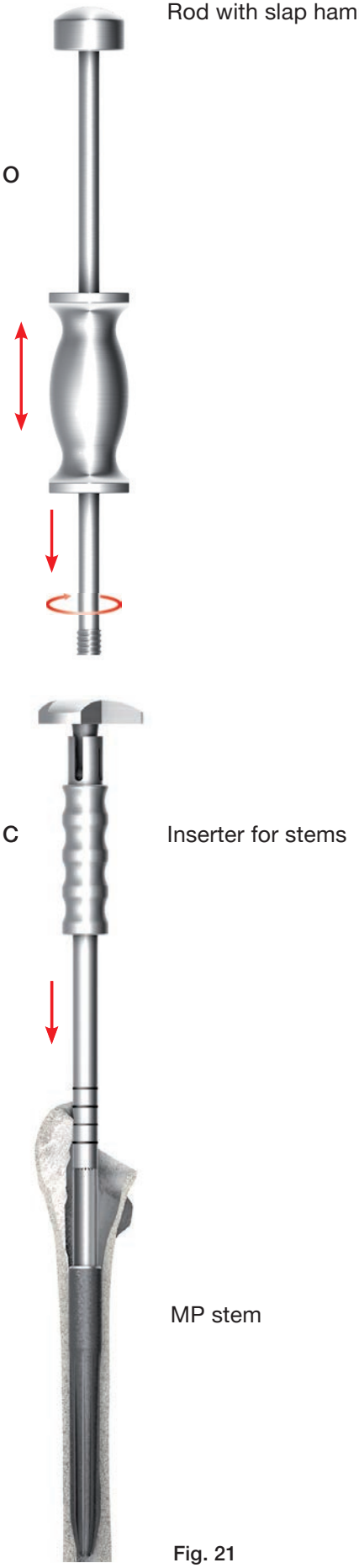


Fig. 21

Stem Extraction

Should it prove necessary to remove the MP stem during the surgery or later revision, the **inserter (C)** is mounted on the in-situ **stem** and screwed to the **rod with slap hammer (O)** (Fig. 21).

The MP stem can be driven out of the medullary canal safely by applying measured blows to the upper stop with the slap hammer.

Procedure

For cemented stem implantation, the 180 mm MP trial stems (134-070/00), the additional instrument set for the cemented surgical technique (134-110/00), and a UHMWPE insertion sleeve (134-212/00) are required in addition to the basic instrument set.

The medullary canal is prepared with standard reamers. It is recommended to start with the smallest diameter and open up the medullary canal millimeter by millimeter until contact with the cortical bone is reached distally around the circumference.

For a 1 mm cement coating, the medullary cavity must be reamed at least 2 mm wider than the stem diameter.

Fig. 22

It might be necessary to clear the proximal femur to insert the plastic sleeve. If this can‘t be achieved using the start reamer, please proceed with the following steps.

Once the medullary canal has been prepared to the required diameter, select a 180 mm trial stem corresponding to the last reamer diameter.

The Trial Stem is secured on the inserter (C) as described previously and then inserted up to the planned proximal marking.

CAUTION:
Do not exert too much pressure, as the trial stem is not intended to achieve a press fit, and can thus be driven further into the femur than planned.

The short reamer guide is screwed onto the trial stem as described on page 09, and then the proximal bone reamed for the cemented preparation with the tubular reamer (134-211/00) (Fig. 23).

Fig. 23

Remove the reamer guide, stem adapter and take out the trial stem using the inserter. If needed, use the slap hammer.

The plastic sleeves must be checked for damage before use.

The plastic sleeve is screwed to the insertion sleeve, pushed onto the proximal section of the implant stem, and then screwed to the inserter (Fig. 24).

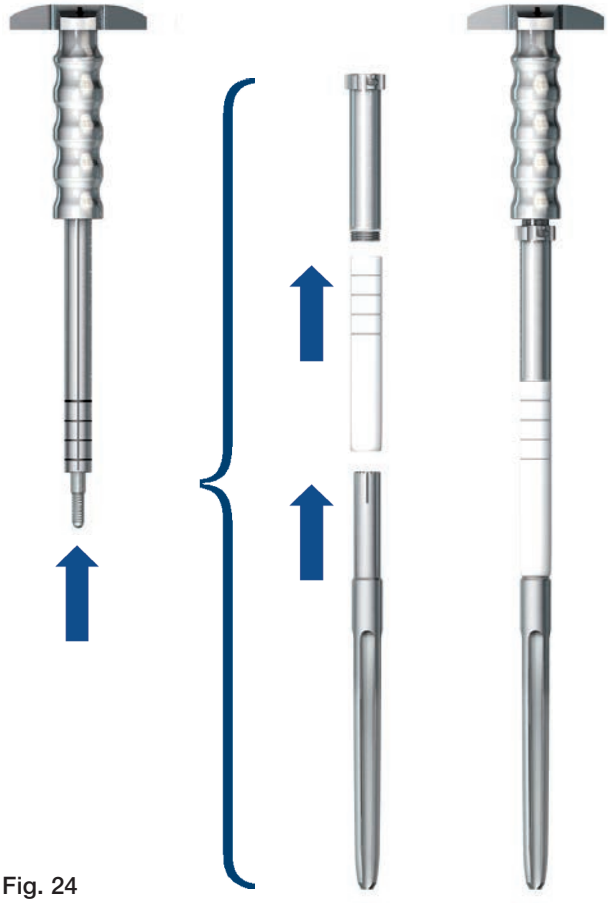


Fig. 24

The medullary cavity is then sealed with a bone dowel or a medullary plug a little below the intended position of the stem tip. Following application of the cement, the prosthesis stem is introduced into the medullary space. The markings on the plastic sleeve correspond to the markings on the inserter used in the uncemented surgical technique. As such, the lowest line marks the proximal end of the stem.

CAUTION:
When applying the cement, it is essential to ensure secure fixation of the distal end of the stem. Proximal oozing of the cement should be avoided and any escaping cement removed before it sets.

The stem is held in the required position with the inserter until the cement sets. The plastic sleeve prevents excess cement from coming into contact with the proximal portion of the stem (Fig. 25). Once the cement has completely set, the inserter is disconnected from the implant and removed along with the plastic sleeve.

Fig. 25

Fig. 26

To remove the plastic sleeve, the extractor is inserted in the sleeve and the bayonet mount is locked. The plastic sleeve can now be twisted free from the cement and removed (Fig. 26).

The reamer guide is screwed onto the prosthesis stem again and further preparation of the proximal femur can continue (Page 09).

Any excess cement is then removed from the proximal femur at the next reaming stage with the tubular reamer (134-200/00).

INFORMATION:
Radioscopic control is recommended to check the cement application and prosthesis positioning.

Hip Prosthesis Stems, uncemented

MAT Tilastan-S (Ti6Al4V)

INFORMATION:
Use 160 mm stems only with 35 mm neck segments and without proximal spacers.

Do not use 210 mm / Ø12 mm stems with proximal spacers.

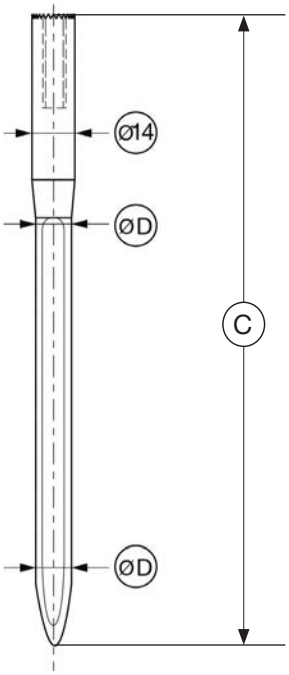
*** CAUTION:**
Stems with a neck/head combination exceeding 40 mm offset could not be proven meet mechanical normatives.

**** CAUTION:**
Do not use proximal spacers with L or XL heads if the neck offset is 40 mm or more.

REF microporous	Prox. stem-Ø mm	Dist. stem-Ø mm	Length mm
172-916/14	14.0	12.0	160
172-916/16	16.0	14.0	160
172-916/18	18.0	16.0	160
172-916/20	20.0	18.0	160
172-916/22	22.5	21.0	160
172-916/25	25.0	23.0	160
172-918/12	12.0	10.0	180
172-918/14	14.0	12.0	180
172-918/16	16.0	14.0	180
172-918/18	18.0	16.0	180
172-918/20	20.0	18.0	180
172-918/22	22.5	21.0	180
172-918/25	25.0	23.0	180
172-921/12	12.0	10.0	210
172-921/14**	14.0	12.0	210
172-921/16	16.0	14.0	210
172-921/18	18.0	16.0	210
172-921/20	20.0	18.0	210
172-921/22	22.5	21.0	210
172-921/25	25.0	23.0	210
172-925/14*	14.0	11.0	250
172-925/16	16.0	13.0	250
172-925/18	18.0	15.0	250
172-925/20	20.0	17.0	250
172-925/22	22.5	19.0	250
172-925/25	25.0	22.0	250
172-929/14*	14.0	9.0	290
172-929/16	16.0	11.0	290
172-929/18	18.0	13.0	290
172-929/20	20.0	15.0	290
172-929/22	22.5	18.0	290
172-929/25	25.0	20.0	290
172-930/14*	14.0	8.0	330
172-930/16	16.0	10.0	330
172-930/18	18.0	12.0	330
172-930/20	20.0	14.0	330
172-930/22	22.5	16.0	330
172-930/25	25.0	19.0	330

Hip Prosthesis Stems, cemented

MAT EndoDur-S (CoCrMo alloy)



REF	for stem length (C) mm	Stem Ø (D) mm
172-900/12	200	12
172-900/14	200	14
172-900/16	200	16
172-901/12	240	12
172-901/14	240	14
172-901/16	240	16
172-902/12	280	12
172-902/14	280	14
172-902/16	280	16
172-903/12	320	12
172-903/14	320	14
172-903/16	320	16

CAUTION:
Stems 240 mm or longer with a neck/head offset over 43.2 mm could not be proven meet mechanical normatives.

Neck Segments

MAT Tiastan, Taper 12/14 mm

REF	Description	Length mm	Version	CCD angle	Offset mm
172-965/26	**Neck Segment, standard**	35	short	126°	31
172-965/35	**Neck Segment, standard**	35	short	135°	29
172-981/26*	**Neck Segment, XXL**	35	short	126°	40
172-981/35*	**Neck Segment, XXL**	35	short	135°	40

REF	Description	Length mm	Version	CCD angle	Offset mm
99-0984/32	**Neck Segment with suture holes, standard**	35	short	126°	31
99-0984/28*	**Neck Segment with suture holes, XXL**	35	short	126°	40

REF	Description		Length mm	Version	CCD angle	Offset mm
137-045/32	**Neck Segment, low offset**	Slim	45	short	136°	32
137-045/38	**Neck Segment, standard**	Slim	45	short	131°	38
137-065/38	**Neck Segment, standard**	Slim	65	long	131°	38
137-065/46*	**Neck Segment, lateralized**	Slim	65	long	126°	46
137-145/38	**Neck Segment, standard**	Defect Reconstruction	45	short	131°	38
137-165/38	**Neck Segment, standard**	Defect Reconstruction	65	long	131°	38
137-165/46*	**Neck Segment, lateralized**	Defect Reconstruction	65	long	126°	46

*** CAUTION:**
Do NOT use with L or XL heads together with stems 250 mm / Ø14 mm, 290 mm / Ø14 mm or 330 mm / Ø14 mm

Proximal Spacers

MAT EndoDur-S (CoCrMo alloy)

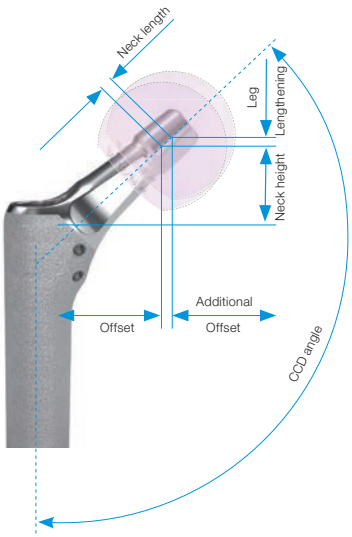
REF	Description	Length mm
172-950/05	**Proximal spacer**	5
172-950/10	**Proximal spacer**	10
172-950/20	**Proximal spacer**	20

Expansion Bolts

MAT EndoDur-S (CoCrMo alloy)

REF	Description	SW mm	Length mm
172-947/38	**Expansion bolt**	8	41
172-947/58	**Expansion bolt**	8	61

Offset- and length values using different neck segments and heads



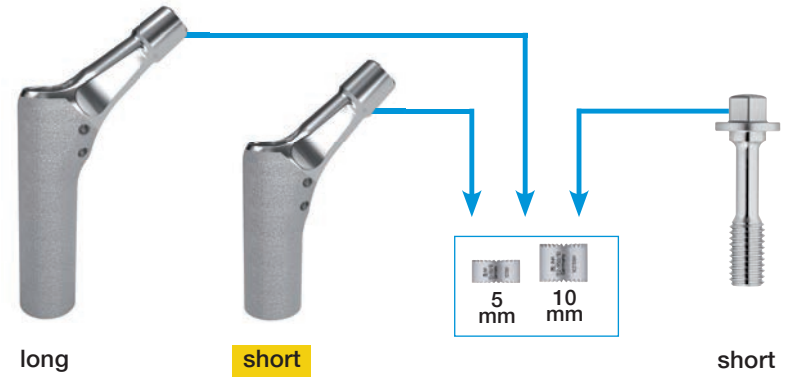
	CCD angle 136°	CCD angle 131°	CCD angle 126°
	Head Ø 28 - 40 mm size M	Head Ø 28 - 40 mm size M	Head Ø 28 - 40 mm size M
Offset	32 mm	38 mm	46 mm
Neck height	33 mm	33 mm	33 mm

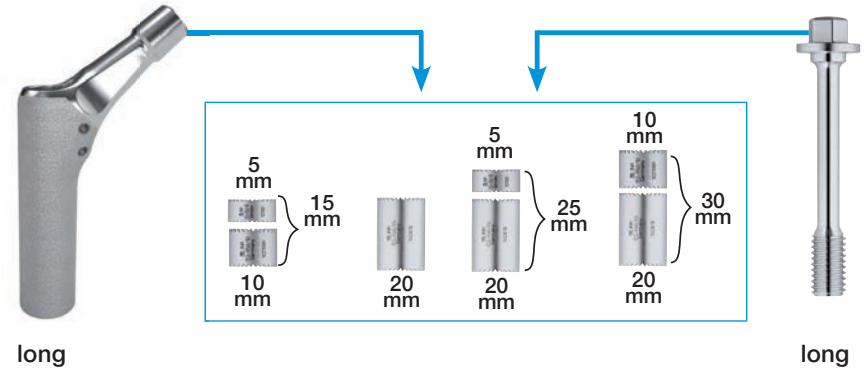
	CCD angle 136° Offset 32 mm				CCD angle 131° Offset 38 mm				CCD angle 126° Offset 46 mm			
	Head Ø 28 mm				Head Ø 28 mm				Head Ø 28 mm			
	S	M	L	XL	S	M	L	XL	S	M	L	XL
	-3.5	0	+3.5	+10.5	-3.5	0	+3.5	+10.5	-3.5	0	+3.5	+10.5
Additional offset	-2.4	0	2.4	7.3	-2.6	0	2.6	7.9	-2.8	0	2.8	8.5
	29.6	32	34.4	39.3	35.4	38	40.6	45.9	43.2	46	48.8	54.5
Leg lengthening	-2.5	0	2.5	7.5	-2.3	0	2.3	6.9	-2.1	0	2.1	6.2

	CCD angle 136° Offset 32 mm				CCD angle 131° Offset 38 mm				CCD angle 126° Offset 46 mm			
	Head Ø 32-36 mm				Head Ø 32-36 mm				Head Ø 32-36 mm			
	S	M	L	XL	S	M	L	XL	S	M	L	XL
	-4	0	+4	+8	-4	0	+4	+8	-4	0	+4	+8
Additional offset	-2.8	0	2.8	5.6	-3.0	0	3.0	6.0	-3.2	0	3.2	6.5
	29.2	32	34.8	37.6	35.0	0	41.0	44.0	42.8	46	49.2	52.5
Leg lengthening	-2.9	0	2.9	5.8	-2.6	0	2.6	5.3	-2.4	0	2.4	4.7

Compatibility between neck segments, proximal spacers and expansion bolts

Spacer mm	Expansion bolt	Neck segment	Offset options mm
0	short	short (45 mm) or long (65 mm)	32, 38, 46
5	short	short (45 mm) or long (65 mm)	32, 38, 46
10	short	short (45 mm) or long (65 mm)	32, 38, 46
15	long	long (65 mm)	38, 46
20	long	long (65 mm)	38, 46
25	long	long (65 mm)	38, 46
30	long	long (65 mm)	38, 46





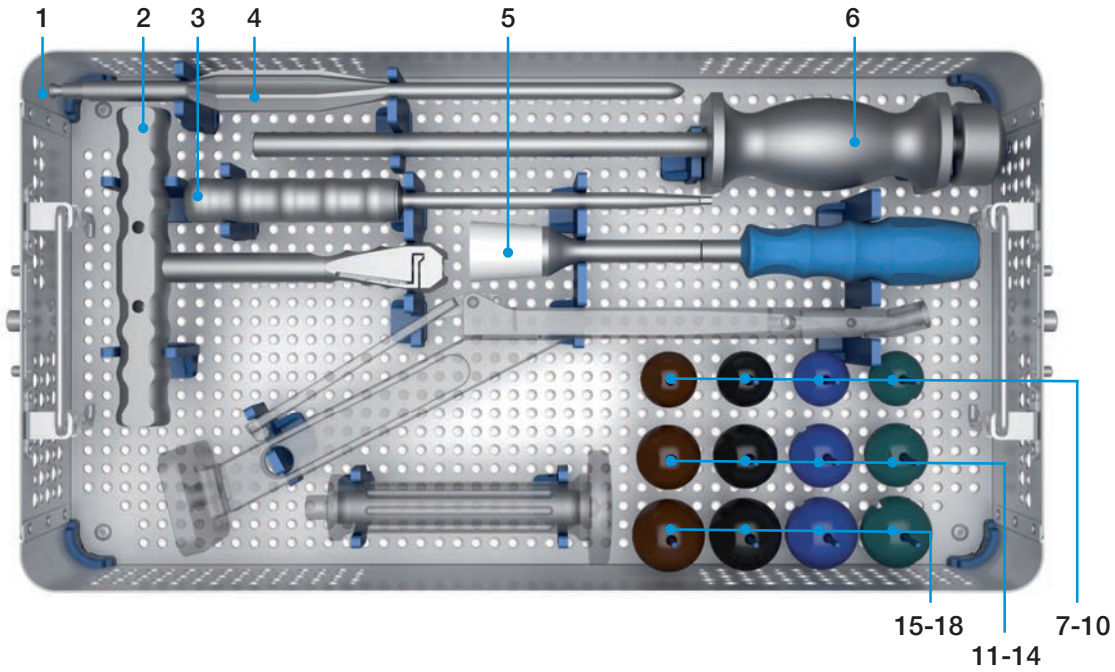
Neck segment	Reaming guide
short (35 mm)	long - silver
short (45 mm)	long - gold
long (65 mm)	short - silver

INFORMATION:
Use 160 mm stems only with 35 mm neck segments and without proximal spacers.

Complete Instrument Set

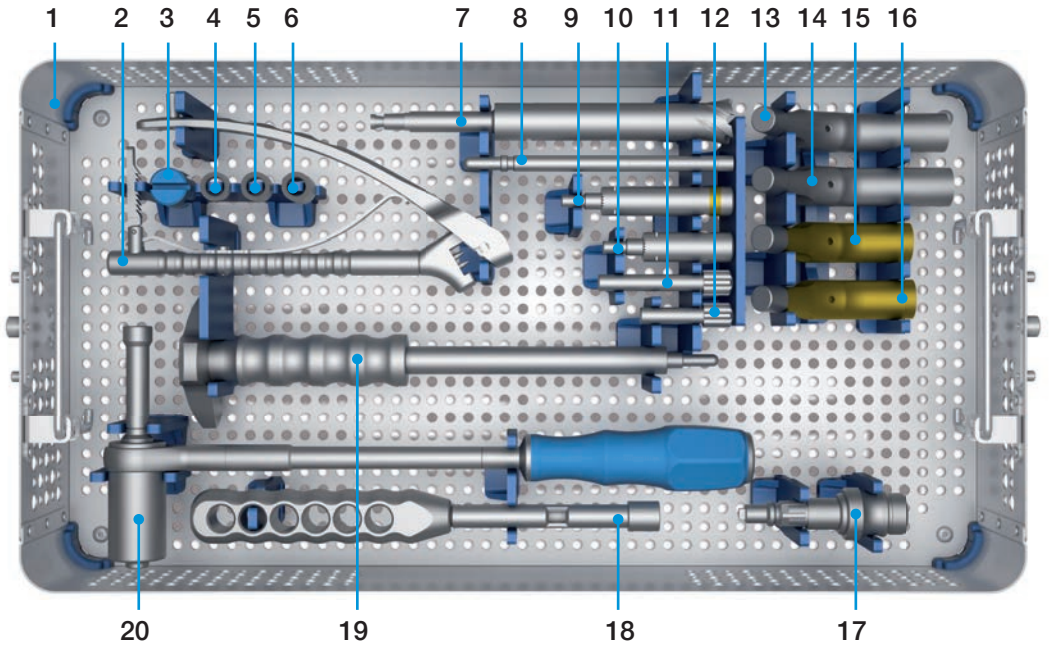
REF	Description
134-341/02	MP General Instruments
134-349/00	MP Modular Basic Instruments
134-030/00	Instrument Tray 3, 160 - 250 mm
134-040/00	Instrument Tray 4, 290 - 330 mm
134-050/00	Instrument Tray 5, odd sizes
134-060/00	Instrument Tray 6, odd sizes
134-070/00	Instrument Tray 7, Trial stems, 160 - 180 mm
134-080/00	Instrument Tray 8, Trial stems, 210 - 250 mm
134-090/00	Instrument Tray 9, Trial stems, 290 - 330 mm
134-110/00	Instrument Tray 10, cemented
134-347/00	Upgrade Kit
134-350/00	Extraction Instruments
134-348/00	Modular 160 mm

134-341/02 MP General Instruments



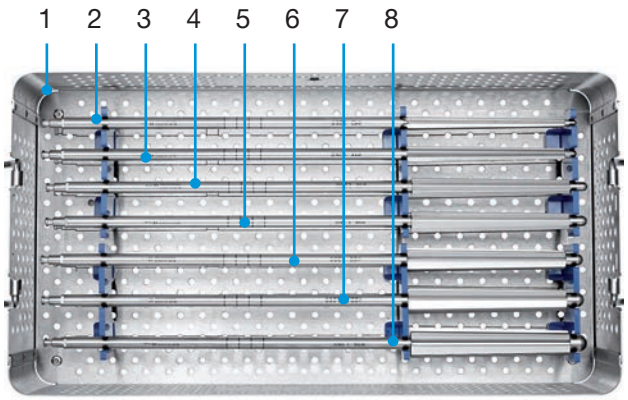
	REF	Description		
1	134-341/01	**MP General Instruments**, empty		
2	15-6053/00	**T-handle**		
3	136-203/00	**Hex Screwdriver**, size 3.5 mm		
4	136-200/00	**Proximal Start Reamer**		
5	175-360	**Head Impactor**		
6	317-661	**Slap hammer**		
7	175-928/11	**Trial Head**	28 mm	s
8	175-928/12	**Trial Head**	28 mm	m
9	175-928/13	**Trial Head**	28 mm	l
10	175-928/14	**Trial Head**	28 mm	xl
11	175-932/11	**Trial Head**	32 mm	s
12	175-932/12	**Trial Head**	32 mm	m
13	175-932/13	**Trial Head**	32 mm	l
14	175-932/14	**Trial Head**	32 mm	xl
15	175-936/11	**Trial Head**	36 mm	s
16	175-936/12	**Trial Head**	36 mm	m
17	175-936/13	**Trial Head**	36 mm	l
18	175-936/14	**Trial Head**	36 mm	xl

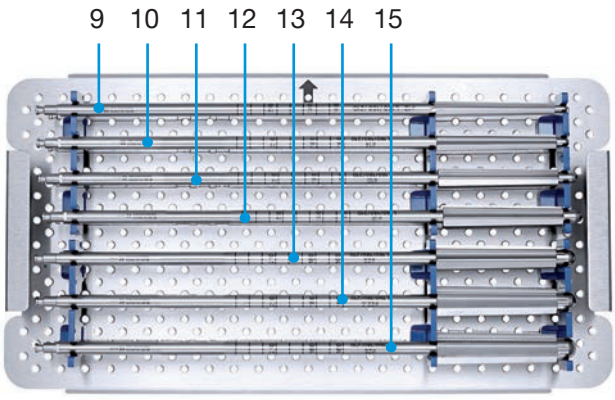
134-349/00 MP Modular Basic Instruments



	REF	Description		
1	134-349/01	**MP Modular Basic Instruments**, empty		
2	179-122	**Insertion Forceps**		
3	179-122/01	**Taper Cap**		
4	131-398/05	**Trial Spacer**	5 mm	
5	131-398/10	**Trial Spacer**	10 mm	
6	131-398/20	**Trial Spacer**	20 mm	
7	134-217/00	**Tubular Reamer**	Ø 22 mm	
8	134-215/00	**Guide Rod**		
9	134-204/45	**Reaming Guide** for 45 mm neck segments		
10	134-204/35	**Reaming Guide** for 65 mm neck segments		
11	134-100/61	**Trial Screw**	short	
12	134-100/41	**Trial Screw**	long	
13	134-219/38	**Trial Neck**	standard	long
14	134-219/46	**Trial Neck**	lateralized	long
15	134-218/32	**Trial Neck**	low offset	short
16	134-218/38	**Trial Neck**	standard	short
17		**Adapter, optional**		
	16-3283/01 or	**Adapter Hudson female / Jacobs male**		
	16-3284/00 or	**Adapter Hudson female / AO male**		
	16-3286/00	**Adapter Hudson female / Harris male**		
18	134-216/00	**Screwdriver / Neck Inserter**	hex 8 mm	
19	134-210/00	**Stem Impactor**	hex 8 mm	
20	134-140/00	**Torque Wrench**	hex 8 mm	

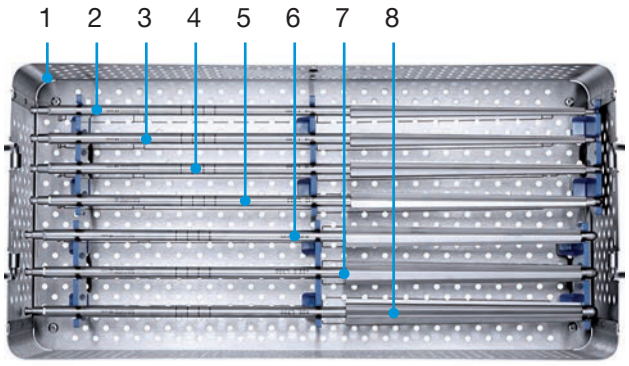
134-030/00 Instrument Tray 3, 160-250 mm

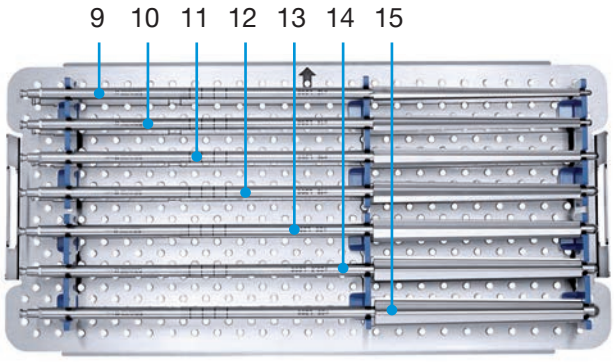




	REF	Description
1	134-031/00	**Instrument tray 3**, empty
2	134-600/00	**Tapered Reamer**, Ø 12 mm, for stem size 250 mm
3	134-600/01	**Tapered Reamer**, Ø 14 mm, for stem size 250 mm
4	134-600/02	**Tapered Reamer**, Ø 16 mm, for stem size 250 mm
5	134-600/03	**Tapered Reamer**, Ø 18 mm, for stem size 250 mm
6	134-600/04	**Tapered Reamer**, Ø 20 mm, for stem size 250 mm
7	134-600/05	**Tapered Reamer**, Ø 22.5 mm, for stem size 250 mm
8	134-600/06	**Tapered Reamer**, Ø 25 mm, for stem size 250 mm
9	134-500/00	**Tapered Reamer**, Ø 12 mm, for stem size 160-210 mm
10	134-500/01	**Tapered Reamer**, Ø 14 mm, for stem size 160-210 mm
11	134-500/02	**Tapered Reamer**, Ø 16 mm, for stem size 160-210 mm
12	134-500/03	**Tapered Reamer**, Ø 18 mm, for stem size 160-210 mm
13	134-500/04	**Tapered Reamer**, Ø 20 mm, for stem size 160-210 mm
14	134-500/05	**Tapered Reamer**, Ø 22.5 mm, for stem size 160-210 mm
15	134-500/06	**Tapered Reamer**, Ø 25 mm, for stem size 160-210 mm

134-040/00 Instrument Tray 4, 290-330 mm

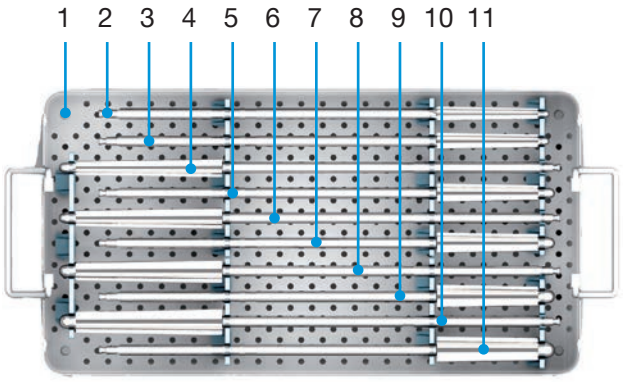




	REF	Description
1	134-041/00	**Instrument tray 4**, empty
2	134-800/00	**Tapered Reamer**, Ø 12 mm, for stem size 330 mm
3	134-800/01	**Tapered Reamer**, Ø 14 mm, for stem size 330 mm
4	134-800/02	**Tapered Reamer**, Ø 16 mm, for stem size 330 mm
5	134-800/03	**Tapered Reamer**, Ø 18 mm, for stem size 330 mm
6	134-800/04	**Tapered Reamer**, Ø 20 mm, for stem size 330 mm
7	134-800/05	**Tapered Reamer**, Ø 22.5 mm, for stem size 330 mm
8	134-800/06	**Tapered Reamer**, Ø 25 mm, for stem size 330 mm
9	134-700/00	**Tapered Reamer**, Ø 12 mm, for stem size 290 mm
10	134-700/01	**Tapered Reamer**, Ø 14 mm, for stem size 290 mm
11	134-700/02	**Tapered Reamer**, Ø 16 mm, for stem size 290 mm
12	134-700/03	**Tapered Reamer**, Ø 18 mm, for stem size 290 mm
13	134-700/04	**Tapered Reamer**, Ø 20 mm, for stem size 290 mm
14	134-700/05	**Tapered Reamer**, Ø 22.5 mm, for stem size 290 mm
15	134-700/06	**Tapered Reamer**, Ø 25 mm, for stem size 290 mm

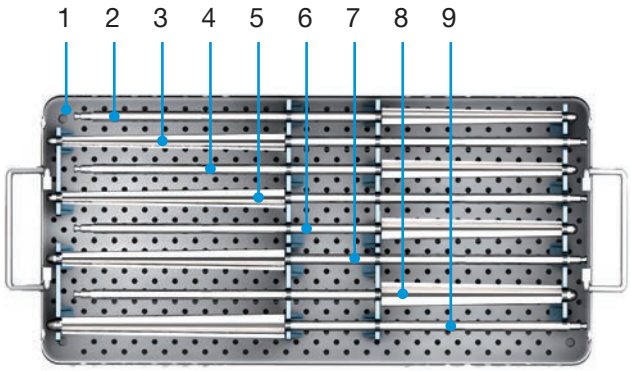
Additional Instrument Set, 5 and 6, odd sizes

134-050/00 Instrument tray 5, Odd Sizes



	REF	Description
1	134-051/00	**Instrument tray 5**, empty
2	134-500/07	**Tapered Reamer**, Ø 13 mm for stem size 160 mm-210 mm
3	134-500/08	**Tapered Reamer**, Ø 15 mm for stem size 160 mm-210 mm
5	134-500/09	**Tapered Reamer**, Ø 17 mm for stem size 160 mm-210 mm
7	134-500/10	**Tapered Reamer**, Ø 19 mm for stem size 160 mm-210 mm
9	134-500/11	**Tapered Reamer**, Ø 21 mm for stem size 160 mm-210 mm
11	134-500/12	**Tapered Reamer**, Ø 24 mm for stem size 160 mm-210 mm
4	134-600/09	**Tapered Reamer**, Ø 17 mm for stem size 250 mm
6	134-600/10	**Tapered Reamer**, Ø 19 mm for stem size 250 mm
8	134-600/11	**Tapered Reamer**, Ø 21 mm for stem size 250 mm
10	134-600/12	**Tapered Reamer**, Ø 24 mm for stem size 250 mm

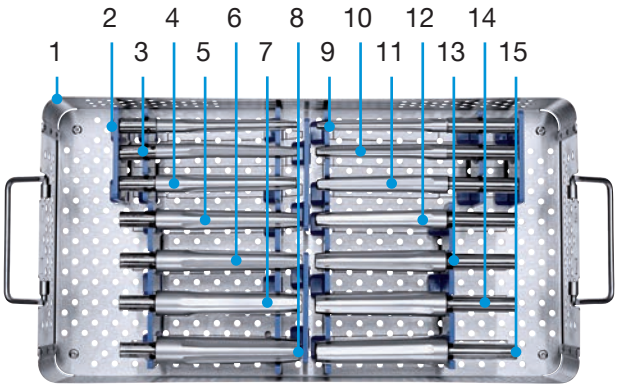
134-060/00 Instrument tray 6, Odd Sizes



	REF	Description
1	134-061/00	**Instrument tray 6**, empty
2	134-700/09	**Tapered Reamer**, Ø 17 mm for stem size 290 mm
4	134-700/10	**Tapered Reamer**, Ø 19 mm for stem size 290 mm
6	134-700/11	**Tapered Reamer**, Ø 21 mm for stem size 290 mm
8	134-700/12	**Tapered Reamer**, Ø 24 mm for stem size 290 mm
3	134-800/09	**Tapered Reamer**, Ø 17 mm for stem size 330 mm
5	134-800/10	**Tapered Reamer**, Ø 19 mm for stem size 330 mm
7	134-800/11	**Tapered Reamer**, Ø 21 mm for stem size 330 mm
9	134-800/12	**Tapered Reamer**, Ø 24 mm for stem size 330 mm

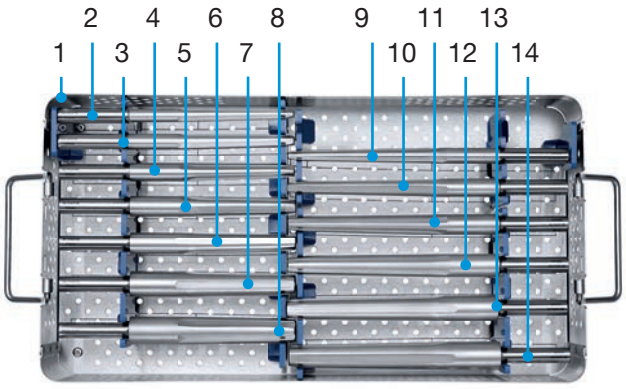
Additional Instrument Sets

134-070/00 Instrument Tray 7, Trial stems 160-180 mm



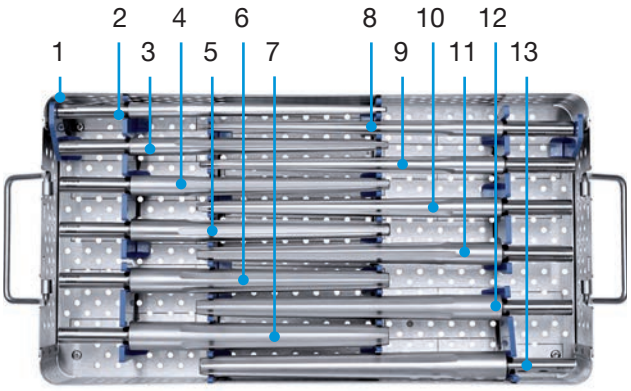
	REF	Description
1	134-071/00	**Instrument tray 7**, empty
2	134-900/12	**Trial Stem,** Ø 12 mm, 160 mm
3	134-900/14	**Trial Stem,** Ø 14 mm, 160 mm
4	134-900/16	**Trial Stem,** Ø 16 mm, 160 mm
5	134-900/18	**Trial Stem,** Ø 18 mm, 160 mm
6	134-900/20	**Trial Stem,** Ø 20 mm, 160 mm
7	134-900/22	**Trial Stem,** Ø 22.5 mm, 160 mm
8	134-900/25	**Trial Stem,** Ø 25 mm, 160 mm
9	99-0155/12	**Trial Stem,** Ø 12 mm, 180 mm
10	99-0155/14	**Trial Stem,** Ø 14 mm, 180 mm
11	99-0155/16	**Trial Stem,** Ø 16 mm, 180 mm
12	99-0155/18	**Trial Stem,** Ø 18 mm, 180 mm
13	99-0155/20	**Trial Stem,** Ø 20 mm, 180 mm
14	99-0155/22	**Trial Stem,** Ø 22.5 mm, 180 mm
15	99-0155/25	**Trial Stem,** Ø 25 mm, 180 mm

134-080/00 Instrument Tray 8, Trial stems 210-250 mm



	REF	Description
1	134-081/00	**Instrument tray 8**, empty
2	99-0142/12	**Trial Stem**, Ø 12 mm, 210 mm
3	99-0142/14	**Trial Stem**, Ø 14 mm, 210 mm
4	99-0142/16	**Trial Stem**, Ø 16 mm, 210 mm
5	99-0142/18	**Trial Stem**, Ø 18 mm, 210 mm
6	99-0142/20	**Trial Stem**, Ø 20 mm, 210 mm
7	99-0142/22	**Trial Stem**, Ø 22.5 mm, 210 mm
8	99-0142/25	**Trial Stem**, Ø 25 mm, 210 mm
9	99-0143/14	**Trial Stem**, Ø 14 mm, 250 mm
10	99-0143/16	**Trial Stem**, Ø 16 mm, 250 mm
11	99-0143/18	**Trial Stem**, Ø 18 mm, 250 mm
12	99-0143/20	**Trial Stem**, Ø 20 mm, 250 mm
13	99-0143/22	**Trial Stem**, Ø 22.5 mm, 250 mm
14	99-0143/25	**Trial Stem**, Ø 25 mm, 250 mm

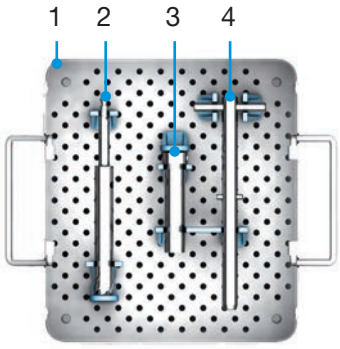
134-090/00 Instrument Tray 9, Trial stems 290-330 mm



	REF	Description
1	134-091/00	**Instrument tray 9**, empty
2	99-0144/14	**Trial Stem**, Ø 14 mm, 290 mm
3	99-0144/16	**Trial Stem**, Ø 16 mm, 290 mm
4	99-0144/18	**Trial Stem**, Ø 18 mm, 290 mm
5	99-0144/20	**Trial Stem**, Ø 20 mm, 290 mm
6	99-0144/22	**Trial Stem**, Ø 22.5 mm, 290 mm
7	99-0144/25	**Trial Stem**, Ø 25 mm, 290 mm
8	99-0145/14	**Trial Stem**, Ø 14 mm, 330 mm
9	99-0145/16	**Trial Stem**, Ø 16 mm, 330 mm
10	99-0145/18	**Trial Stem**, Ø 18 mm, 330 mm
11	99-0145/20	**Trial Stem**, Ø 20 mm, 330 mm
12	99-0145/22	**Trial Stem**, Ø 22.5 mm, 330 mm
13	99-0145/25	**Trial Stem**, Ø 25 mm, 330 mm

Additional Instrument Set, cemented

134-110/00 Instrument Tray 10

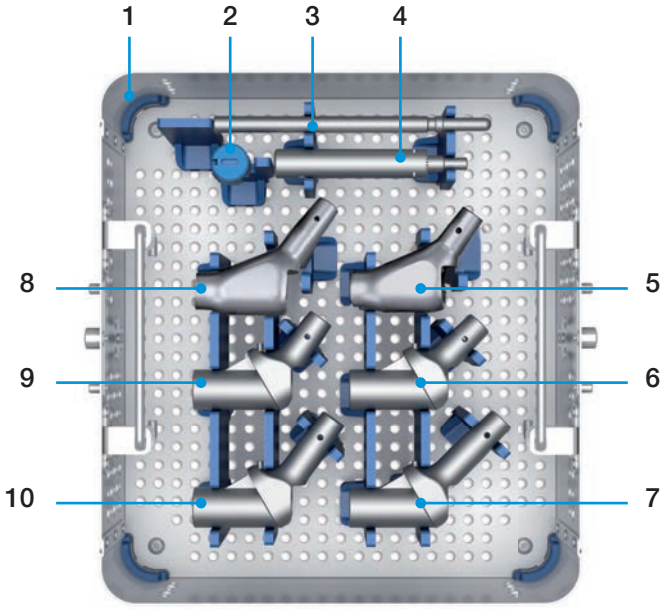


	REF	Description
1	134-111/00	**Instrument tray 10**, empty
2	134-211/00	**Tubular Reamer**, Ø 19 mm
3	134-213/00	**Insertion Sleeve**
4	134-214/00	**Extractor**

Additional Instruments

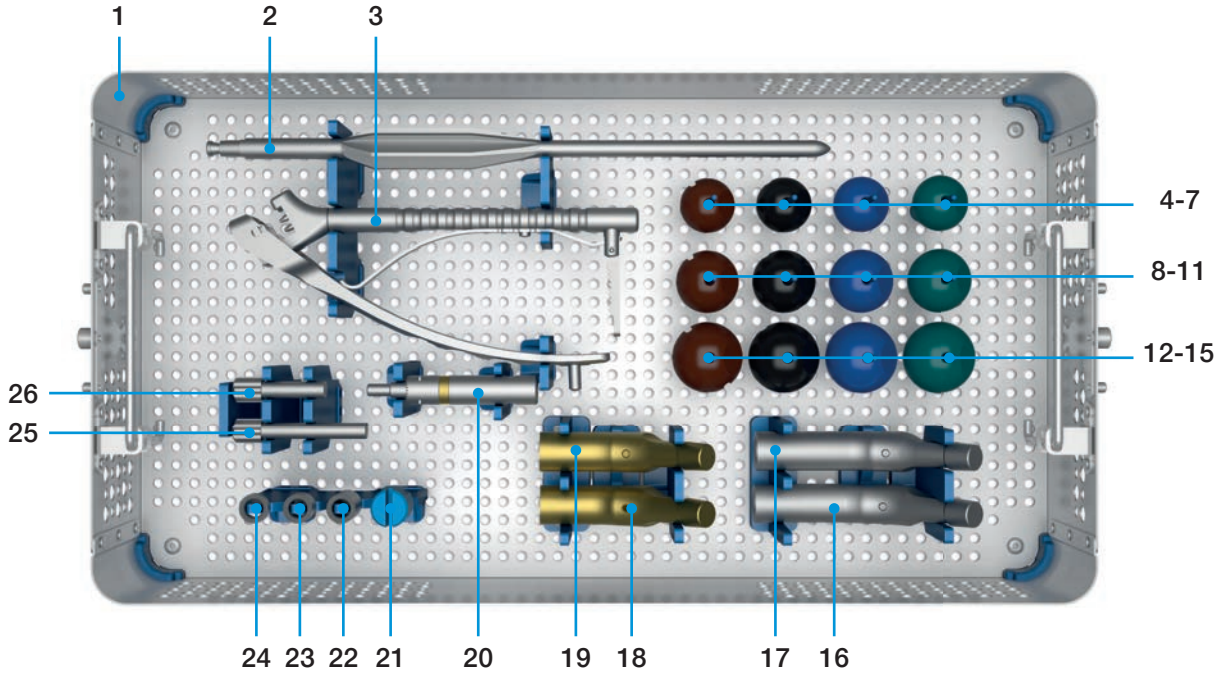
REF	Description
134-212/00	**Inserter Sleeve** for cemented stems

134-348/00 MP Modular 160 mm



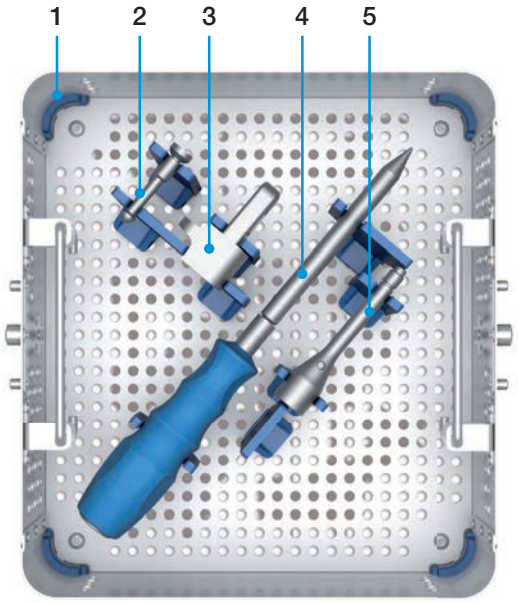
	REF	Description			
1	134-348/01	**MP Modular 160 mm**, empty			
2	131-830/04	**Taper Cap**			
3	134-215/01	**Guide Rod, short** for MP stems L160 mm D12 mm only			
4	134-204/65	**Reaming Guide** for 35 mm neck segments			
5	99-0984/33	**Trial Neck**	35 mm		126°
6	99-0984/29	**Trial Neck XXL**	35 mm		126°
7	131-395/35	**Trial Neck**	35 mm		135°
8	131-393/35	**Trial Neck XXL**	35 mm		135°
9	131-393/26	**Trial Neck XXL**	35 mm		126°
10	131-395/26	**Trial Neck**	35 mm		126°

134-347/00 **Upgrade Kit** (Addition to 134-010/00, 134-030/00, 134-040/00)



	REF	Description		
1	134-347/01	**MP Modular Upgrade Kit**, empty		
2	136-200/00	**Proximal Start Reamer**		
3	179-122	**Insertion Forceps**		
4	175-928/11	**Trial Head**	28	s
5	175-928/12	**Trial Head**	28	m
6	175-928/13	**Trial Head**	28	l
7	175-928/14	**Trial Head**	28	xl
8	175-932/11	**Trial Head**	32	s
9	175-932/12	**Trial Head**	32	m
10	175-932/13	**Trial Head**	32	l
11	175-932/14	**Trial Head**	32	xl
12	175-936/11	**Trial Head**	36	s
13	175-936/12	**Trial Head**	36	m
14	175-936/13	**Trial Head**	36	l
15	175-936/14	**Trial Head**	36	xl
16	134-219/38	**Trial Neck**	Standard	long
17	134-219/46	**Trial Neck**	Lateralized	long
18	134-218/32	**Trial Neck**	Low offset	short
19	134-218/38	**Trial Neck**	Standard	short
20	134-204/45	**Reaming Guide** for 45 mm neck segments		
21	179-122/01	**Taper Cap**		
22	131-398/20	**Trial Spacer**	20 mm	
23	131-398/10	**Trial Spacer**	10 mm	
24	131-398/05	**Trial Spacer**	5 mm	
25	134-100/61	**Trial Screw**	long	
26	134-100/41	**Trial Screw**	short	

134-350/00 Extraction Instruments



	REF	Description
1	134-350/01	**Extraction Instruments 160 mm**, empty
2	134-202/06	**Neck Extractor Bolt**
3	134-202/04	**Neck Extractor Base**
4	134-202/05	**Extraction Plunger**
5	134-202/03	**Implant Extractor**

X-ray Templates
110% natural size

(X-ray templates 120% natural size available on request)

REF	Description	Type	Offset
134-516/77	**160 mm Stems**	uncemented	
134-518/77	**180 mm Stems**	uncemented	
134-521/77	**210 mm Stems**	uncemented	
134-525/77	**250 mm Stems**	uncemented	
134-529/77	**290 mm Stems**	uncemented	
134-529/77	**330 mm Stems**	uncemented	
134-520/77	**200 mm Stems**	cemented	
134-524/77	**240 mm Stems**	cemented	
134-528/77	**280 mm Stems**	cemented	
134-532/77	**320 mm Stems**	cemented	
134-555/77	**Neck Segments**	slim	low, standard, high
134-555/78	**Neck Segments**	defect reconstruction	standard, high

Cleaning and Care Instructions

Corresponding instructions for the instrument sets are available from info@link-ortho.com on request.

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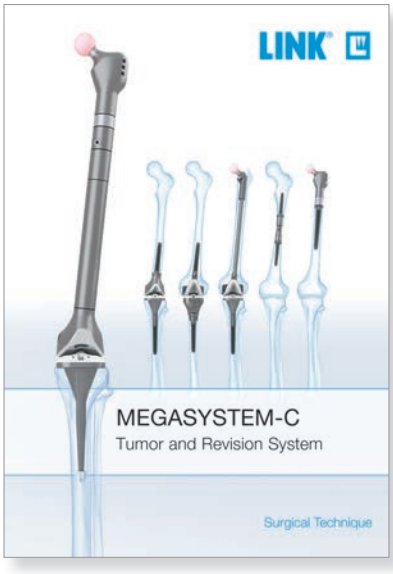

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Please note the following regarding the use of our implants:

Follow the instructions for use!
For detailed product information, including indications and contraindications, precautions and warnings, etc. please consult the product's Instructions For Use (IFU) prior to use.

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