DMS / DMS Intermediate

The dynamic, angle-adjustable barrel plate system

KLS martin GROUP

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DMS

Dynamic, angle-adjustable barrel plate system

DMS
Coxal-femoral fractures

First acceptable results following femoral neck and pertrochanteric femur osteosynthesis were reported by Smith-Petersen (1931), using a 3-lamellae pin with three-star cross section. Further developments included the implants according to Thornton (1937), Jewett (1941) and McLaughlin (1947), which are rigidly connected to a plate applied laterally to the femur. Systematic further developments were the angle plates designed by Schneider and Müller (1957).

E. Pohl (1951) can claim credit for having developed the first non-interlocking connection between an intra-medullary force carrier and a lateral anchoring plate. The principle consists of a dynamic connection between a lag screw and a femoral "barrel plate" that allows self-compression (sliding barrel principle).

This brilliant idea made it possible to avoid many of the previous complications (head perforation, pseudarthrosis, secondary dislocation). Modified implants were introduced in the United States by Callender (1967) as "Sliding Hip Screws" and by Richards (1971) as "Compression Screws". An optimized follow-up model was developed by the AO (1979) on the basis of Pohl's system. While maintaining the „sliding barrel principle", additional rotational stability is ensured by form-fit (i.e. by using a hexagonal screw instead of a round one and flattening the barrel on two sides to provide corresponding sliding surfaces).

Also based on Pohl's system, we have now newly developed a dynamic, infinitely adjustable, variangle barrel plate for stabilizing proximal femoral fractures. If required, the KLS Martin implant (DMS) allows valgisation of the femoral head fragment after fixation of the fracture and before compressing the pertrochanteric fracture surfaces, particularly in the case of unstable fractures.

The greatest advantage of this implant lies in the fact that the required valgisation angle can be adjusted to the individual patient's needs by means of a worm gear.

K. K. Dittel

DMS Intermediate

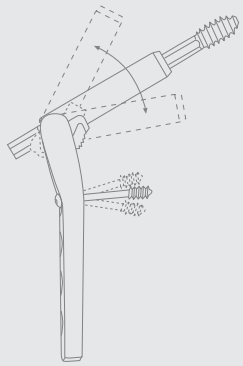
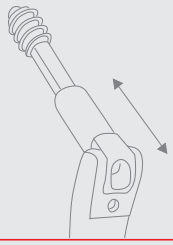
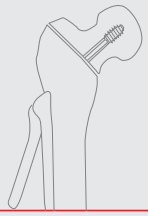
The DMS Intermediate is a third smaller than the DMS standard plate and therefore better suited for the anatomy of children and short adults. At the same time, the advantages of intraoperative adjustment of the angle of the implant are fully retained.

Feature, function
and benefit

The Dynamic Martin Screw (DMS) was specially designed to stabilize proximal femoral fractures. The dynamic, angle-adjustable barrel plate offers perfect shaft congruence for patient-specific adaptation. The “sliding barrel” principle of the implant enables full weight bearing at an early stage. And thanks to the universal applicability of the plate, stockkeeping needs and corresponding costs are significantly reduced.

Alternatively to the DMS standard plate there is available the DMS Intermediate which is well suited for the anatomy of the child and small adults as well.

DMS – simple and dynamic!

Plate	*Features*	*Benefit*
	■ Dynamic ■ Infinitely adjustable ■ Angle-adjustable	■ Ideal shaft congruence ■ Patient-specific adaptation → low complication rates → increased safety ■ Intraoperative flexibility ■ Secondary varus or valgus correction possible
	■ Can be inserted with maximum precision ■ Optimal adaptation of the plate to the bone	■ Good biomechanical conditions ■ Excellent and reliable stability under load even in difficult cases ■ Compression and reduction after plate fixation
	■ “Sliding barrel” principle	■ Fast restoration of full weight-bearing capacity
	■ One barrel plate replaces up to 6 fixed-angle plates ■ Universal application	■ Cuts stockkeeping costs significantly

Lag screw

	■ DMS Intermediate: forward and backward cutting lag screw	■ Easy implantation and safe explantation

Step by step
to optimal fixation

DMS indications

Medial femoral neck fractures
DMS 2-hole plate

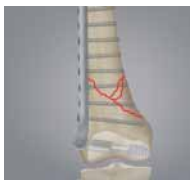
Pertrochanteric femoral fractures
DMS 4-hole plate

Intertrochanteric reversed fractures
DMS 4-hole plate

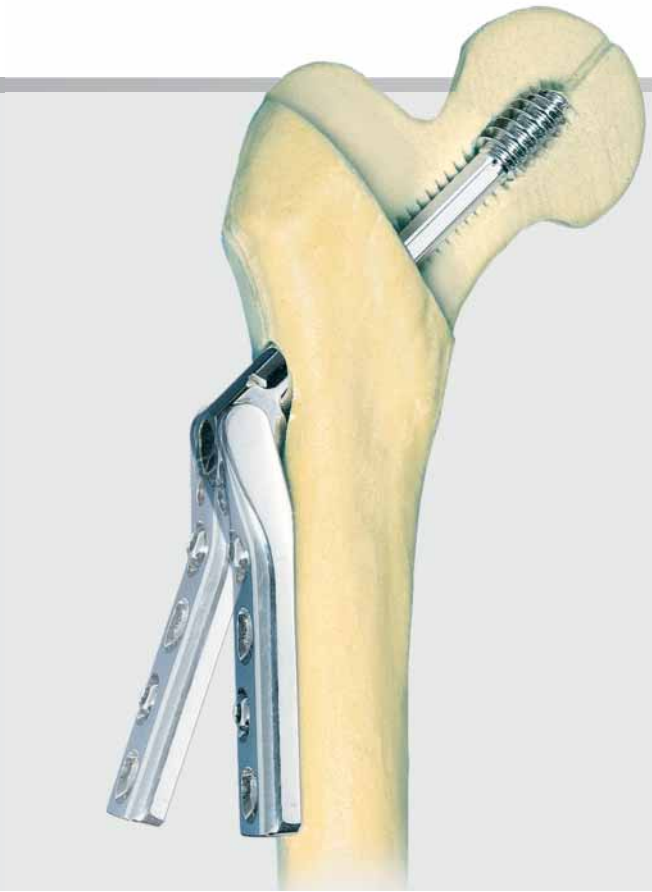
Subtrochanteric fractures
DMS 4-hole plate

DMC indications

Condylar femoral fractures



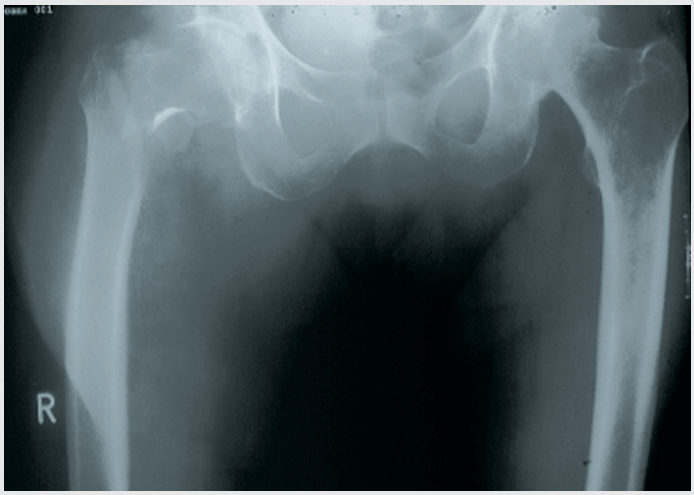
Supracondylar femoral fractures



Surgical technique

DMS surgical technique

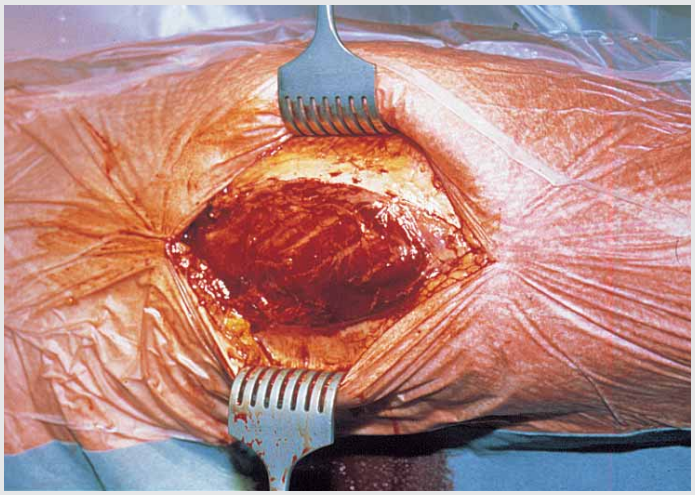
Pertrochanteric femoral fracture *Pages 10-17*



Preoperative X-ray

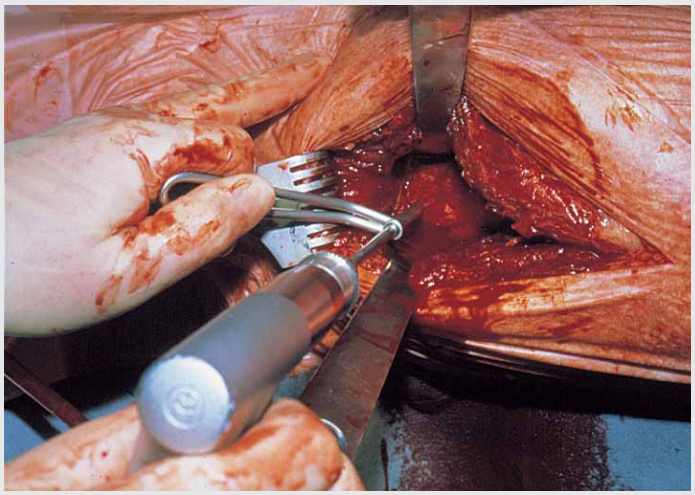
Positioning the patient

The patient is placed on a radiolucent operating table in dorsal decubitus position.



1. Lateral surgical approach acc. to Bauer

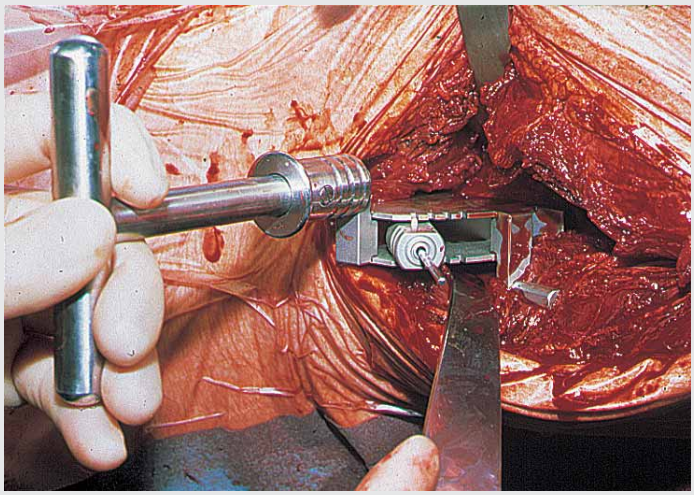
Starting two finger widths proximally to the tip of the trochanter major, a straight, lateral skin incision is made, length 15 cm.



2. Countersinking the cortex of the femur

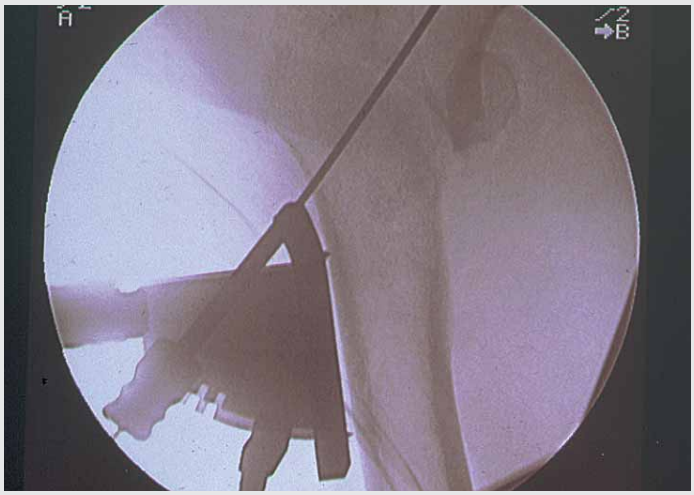
The 4.5-mm drill bit is used to countersink the femoral cortex.

4.5-mm drill bit



3. Positioning the guide wire

The guide wire is positioned using the aiming device, which can be adjusted between 135° and 150°.



4. Inserting the guide wire

The guide wire is then inserted under image intensifier control, making sure that it lies centrally in the mid-axis of the femoral head.

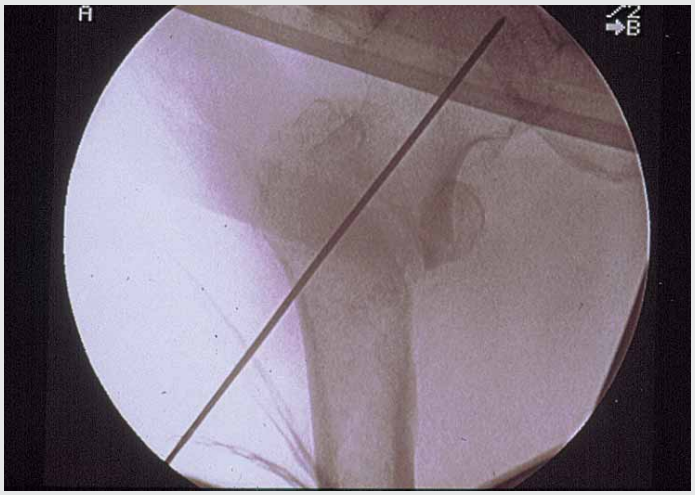
Notice:
Alternatively, the guide wire can be inserted free-hand using an appropriate soft-tissue sleeve.

Guide wire

Aiming device

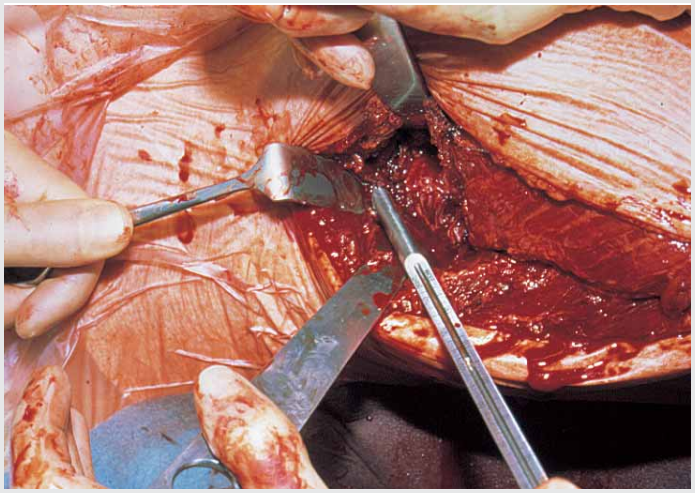
Guide wire

Soft tissue sleeve



5. Image intensifier control

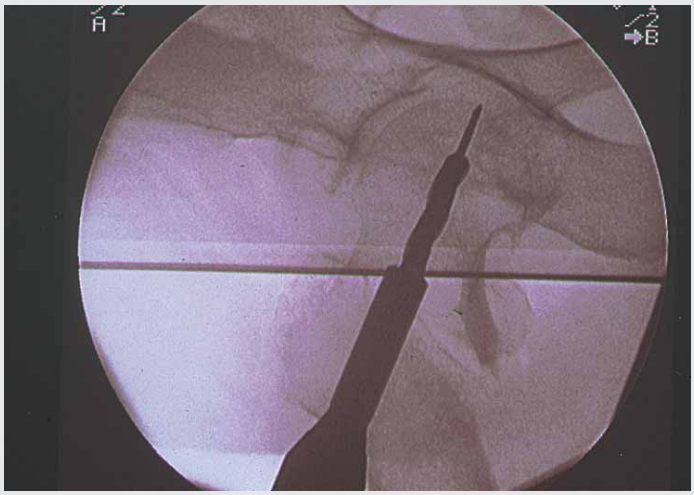
Correct placement of the guide wire is checked with the image intensifier.

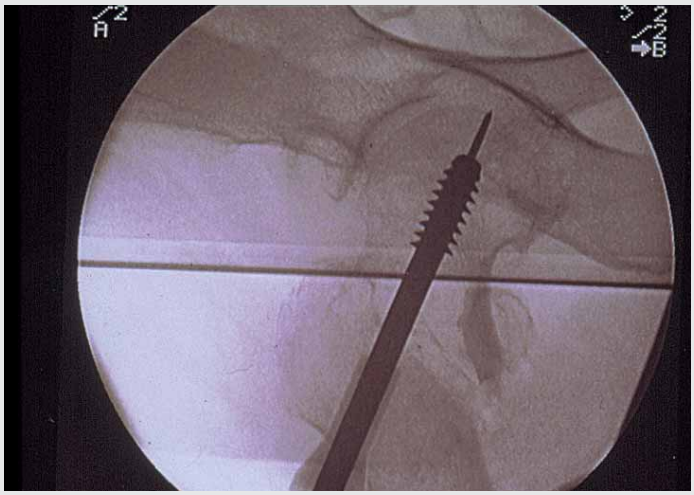


6. Determining guide wire length

Once the guide wire has been correctly positioned, its length can be conveniently read off the scale of the measuring sleeve.

Measuring sleeve





7. Drilling the hole

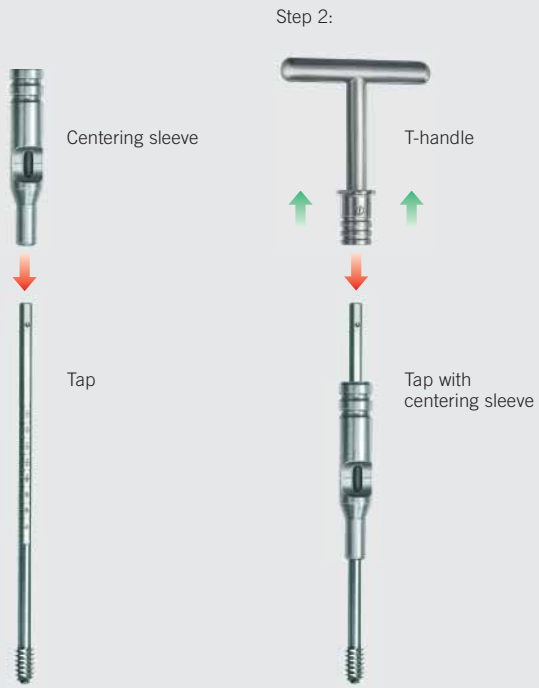
After setting it to the measured value (-10 mm), the DMS combo reamer is drilled into the bone along the guide wire under image intensifier control until the cone of the third stage has fully entered the lateral cortex.

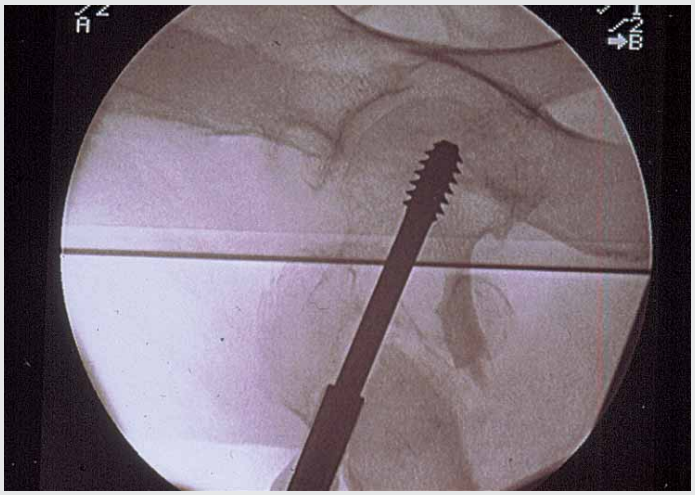
8. Tapping

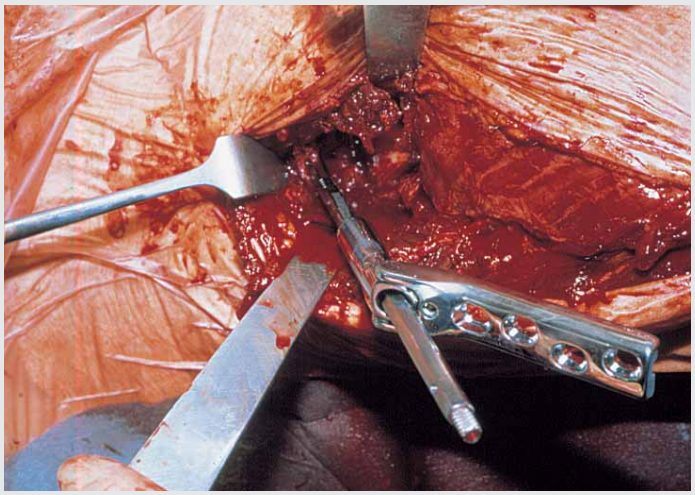
Optionally using the centering sleeve and the T-handle, the tap is now screwed in to a point 10 mm away from the cortex.

The depth of the thread can be directly read off the mark on the centering sleeve.

Combo reamer





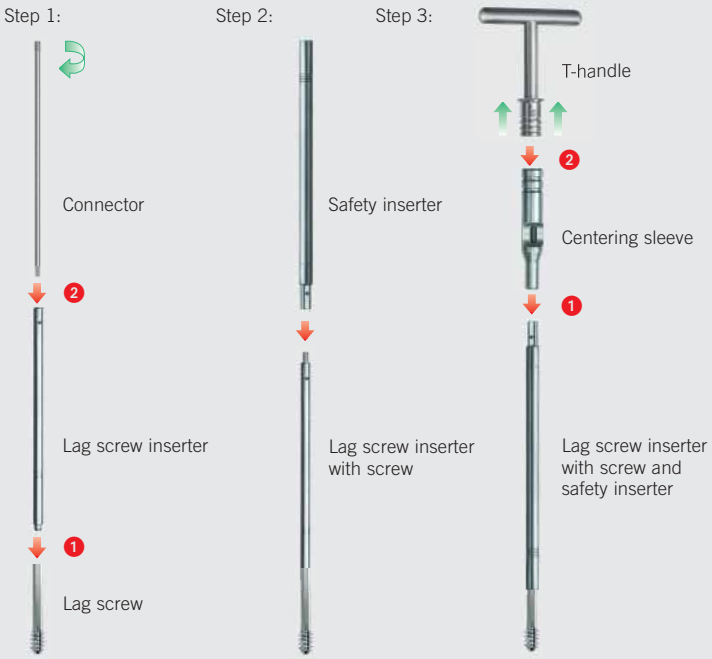


9. Inserting the lag screw

The length of the lag screw is identical with the set drilling depth.

To insert the lag screw, it is first attached to the screwdriver and the connector before it is screwed in with the safety inserter, the 11-mm centering sleeve and the T-handle.

Notice: In hard bone, the lag screw is inserted up to the first mark, in osteoporotic bone up to the last mark.

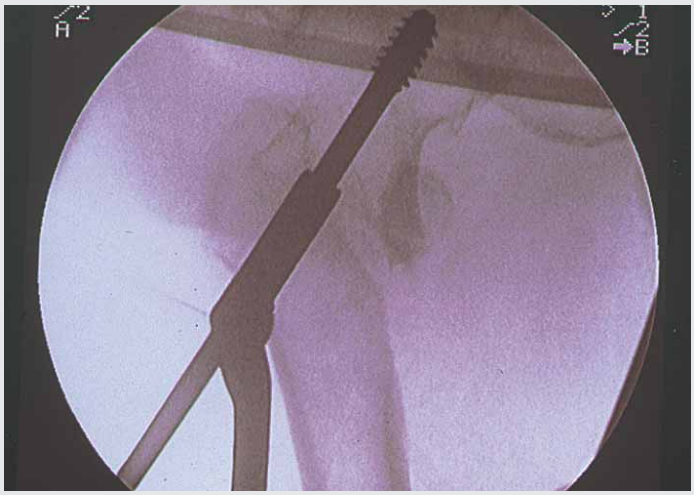


10. Inserting the plate

Once the lag screw has been positioned correctly, the handle with the safety inserter and the centering sleeve can be removed.

Now a plate of correct length can be passed over the screwdriver onto the lag screw.

Notice:
If the plate is not parallel to the longitudinal axis of the femur, the T-handle can be applied again to fine-adjust the screw by turning it clockwise.

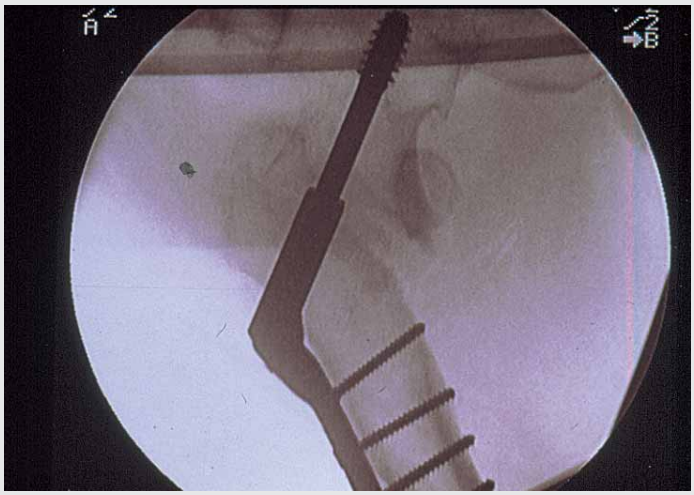


11. Adjusting the plate

Once the plate is in the correct position relative to the femoral axis, it is adjusted with the worm gear as required for proper valgus or varus correction.

Using the screwdriver, the worm gear is operated until the plate attaches perfectly to the femur.

To ensure a secure seat, the plate impactor is used to precision-adjust the DMS plate on the femur.



12. Fixing the plate

To fix the DMS plate in position on the femur, 4.5-mm cortical screws are used.

For the plate hole located directly underneath the worm gear, a 6.5-mm cancellous screw can also be used for fixation of the lesser trochanter.

Screwdriver

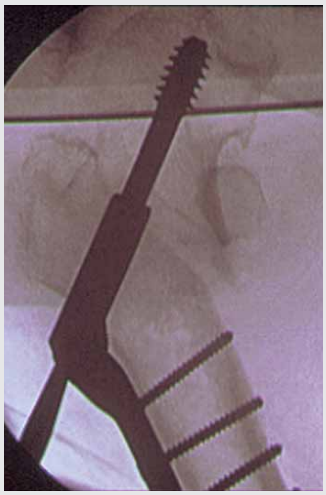
Plate impactor

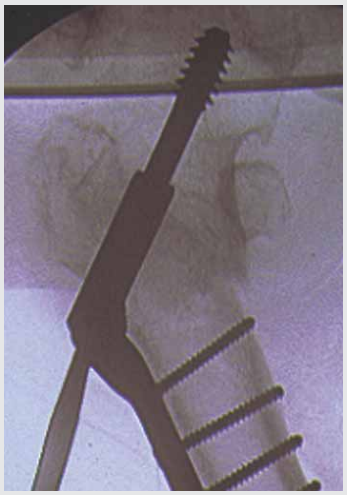
Screwdriver

Drill bit for 4.5-mm cortical screws

Depth gauge

Drill bit guide



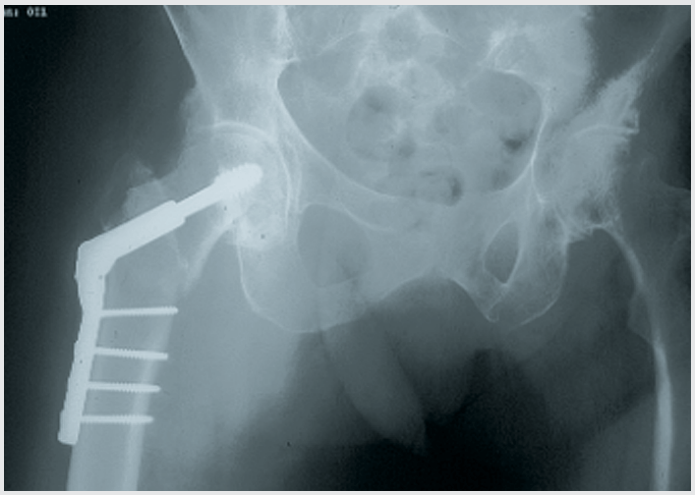


13. Inserting the compression screw

In a last step, the fracture is compressed by inserting the DMS compression screw. In osteoporotic bone, compression paths of up to 6 mm can occur.

Following compression, the compression screw is removed.

Left picture: Fracture without compression
Right picture: Compressed fracture



Postoperative X-ray check

Screwdriver

DMS Intermediate – step by step
to optimal fixation

DMS Intermediate indications

Proximal femoral fractures in short adults

Medial femoral neck fracture
DMS Intermediate 2-hole plate

Pertrochanteric femoral fracture
DMS Intermediate 4-hole plate

Intertrochanteric reversed fracture
DMS Intermediate 4-hole plate

Subtrochanteric fracture
DMS Intermediate 4-hole plate

Displacement osteotomy for coxa valga correction

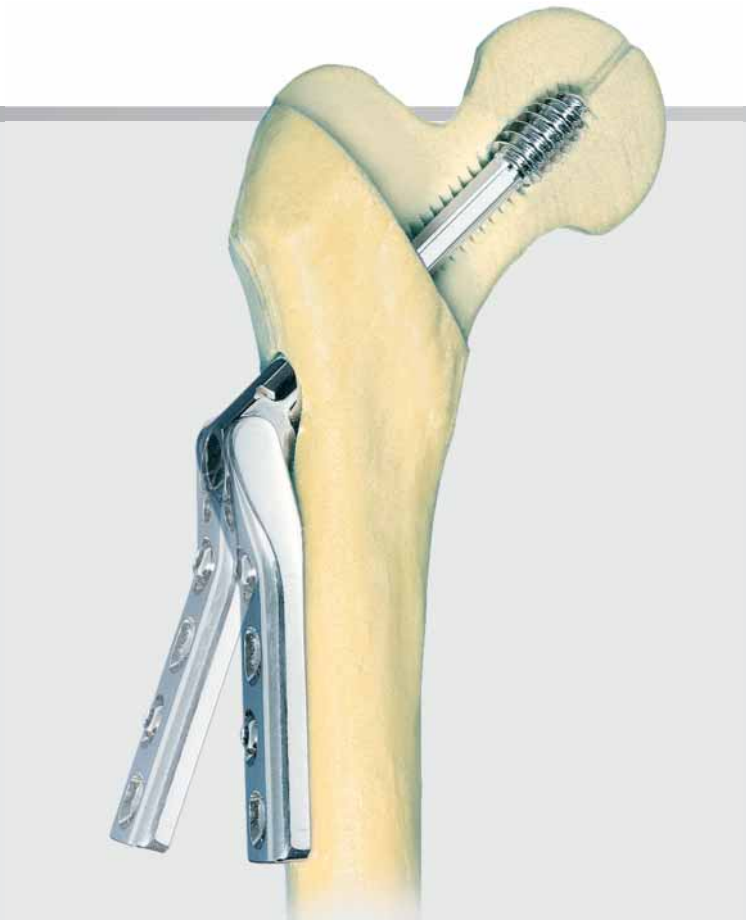
preoperative

postoperative, correction approx. 10°
Fixation with DMS Intermediate

Displacement osteotomy for coxa vara correction

preoperative

postoperative, correction approx. 20°
Fixation with DMS Intermediate

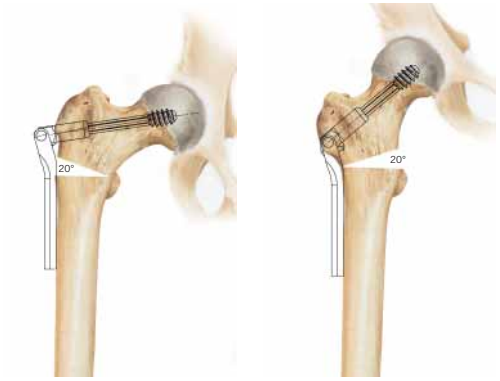


Surgical technique

DMS Intermediate surgical technique

Intertrochanteric varisation osteotomy with a correction angle of 20°
Prof. Meiß

Pages 20-29



20° varisation

20° valgisation

Preoperative planning

As part of the preoperative planning, the scope of the varus correction needs to be determined with precision.

On this basis, the DMS Intermediate plate with the correct angulation is then selected.

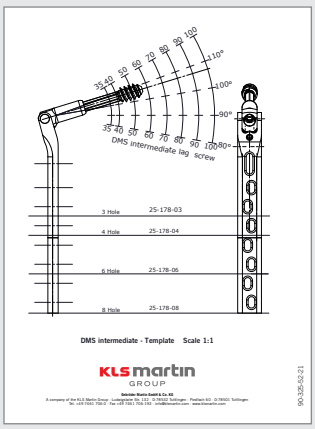
Detailed planning requires a pelvic X-ray view or an AP X-ray of the hip.

Preoperative planning

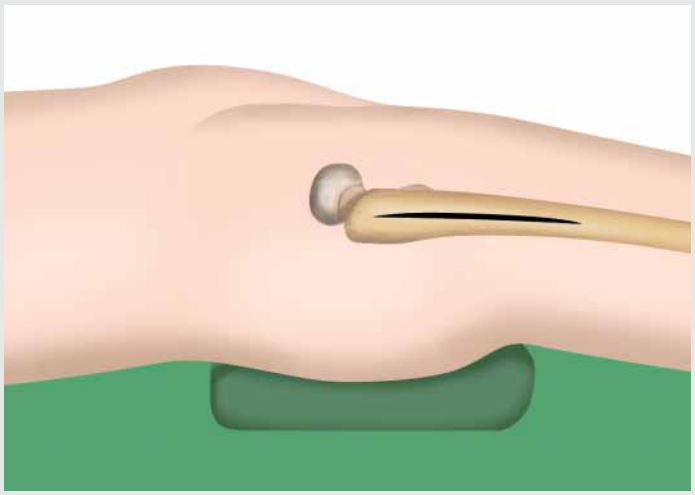
A paper tracing is made from the X-ray image. The femur is then cut out and the desired correction set after dissection in the osteotomy region.

This can be done with or without wedge removal (i.e. lateral opening or medial closing).

In addition, the prospective position of the DMS Intermediate plate before and after “osteotomy” is sketched in as well, using an X-ray template.



X-ray template

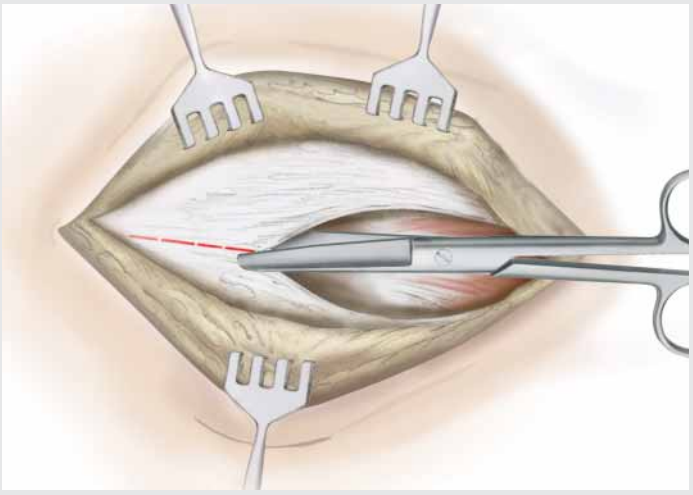


Positioning the patient

The patient is placed in dorsal decubitus position on a radiolucent operating table. Both legs are covered so that they are easily movable.

Besides, it is advisable to place a radiolucent cushion or folded towel underneath the sacrum in order to lift the pelvis and thighs a little.

If pelvic osteotomy is additionally planned for the same session, the iliac crest is covered as well up to costal arch level.

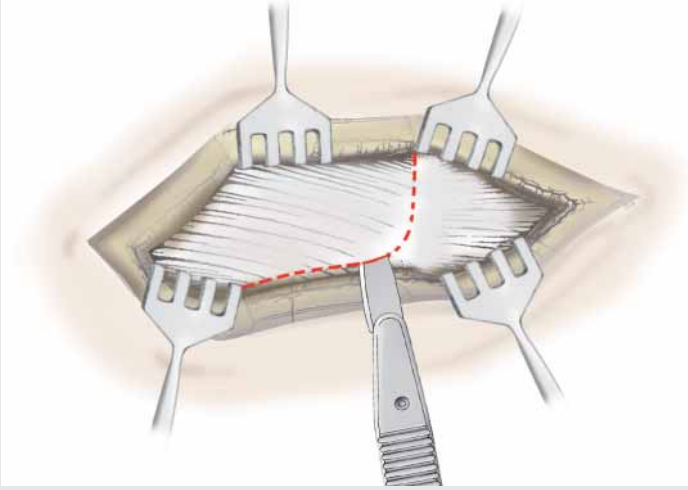


1. Approach – opening

Surgical access is made by means of a lateral longitudinal thigh incision from a point slightly distally of the tip of the trochanter to the proximal shaft of the femur.

The fascia is split along the course of the fibers, with the leg kept in a slightly abducted position to reduce fascia tension.

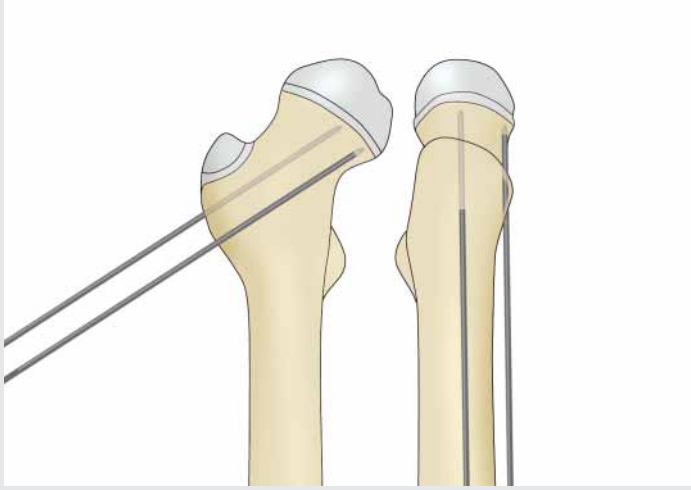
Thereafter, the trochanteric bursa is opened and the tissue retracted ventrally and dorsally.



2. Approach – opening

The intertrochanteric femoral region must now be exposed.

Notice:
To ensure good orientation, subperiosteal exposure of the trochanter is recommended until the proximal end of the femoral neck is ventrally palpable or visible.



3. Placing the guide wire

To mark the femoral neck antetorsion, a 2-mm-thick Kirschner wire is inserted into the femoral neck as centrally as possible under image intensifier control.

Notice:
It is important to maintain the predetermined angle to the shaft. The entry point of the guide wire should be located approx. 1 cm distally of the trochanteric apophyseal growth plate.

Guide wire

4. Placing the guide wire

The angle to the shaft must be set so that the intended varus correction can be achieved with the selected DMS Intermediate plate by reducing the angulation.

The guide wire is not pushed up to the subchondral lamella of the femoral head, but to a point just short of the epiphyseal plate of the femoral head.

Notice:
Image intensifier control in two planes is essential!

5. Setting the drill

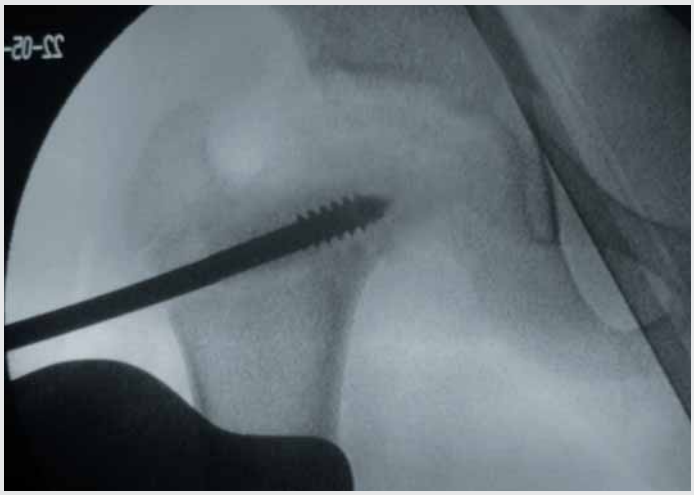
Once positioned correctly, the length of the guide wire inside the bone is determined with the measuring sleeve.

The (3-stage) combo reamer is then set to the measured value minus 5 mm.

Notice:
When loosening the knurled nut, please note that this is a left-hand thread (to be turned clockwise!) and that the nut must be removed completely.

Measuring sleeve

Combo reamer



6. Pre-drilling

Pre-drilling is done via the guide wire under irrigation until the cone of the third stage is fully immersed in the lateral cortex.

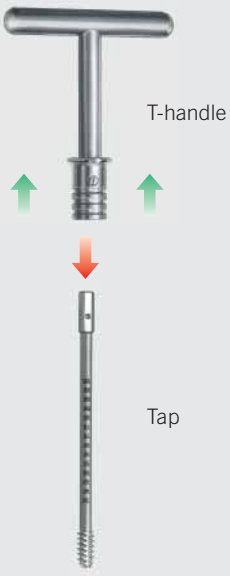
Notice:
In any case, it is important to do the pre-drilling under image intensifier control to prevent the guide wire from being inadvertently pushed forward into the growth plate.

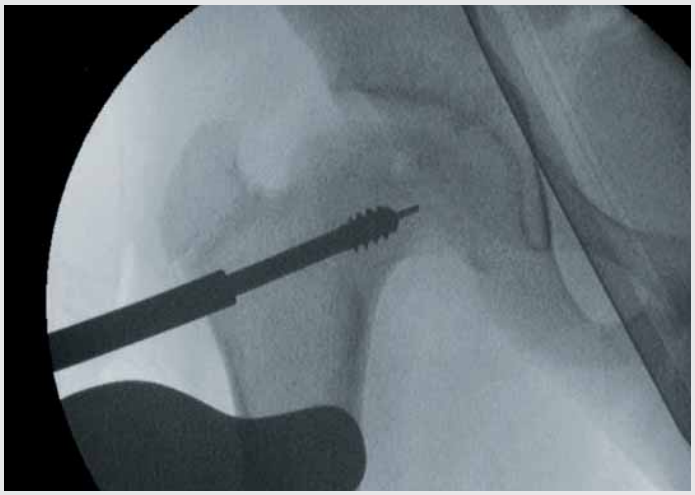
7. Tapping

The tap is inserted to the true drilling depth. This can be checked via the scale marks at the level of the lateral cortex.

Notice:
When screwing in the tap, be sure not to overturn it, as stripping (destroying) the thread inside the bone would jeopardize proper lag screw anchorage.

Combo reamer

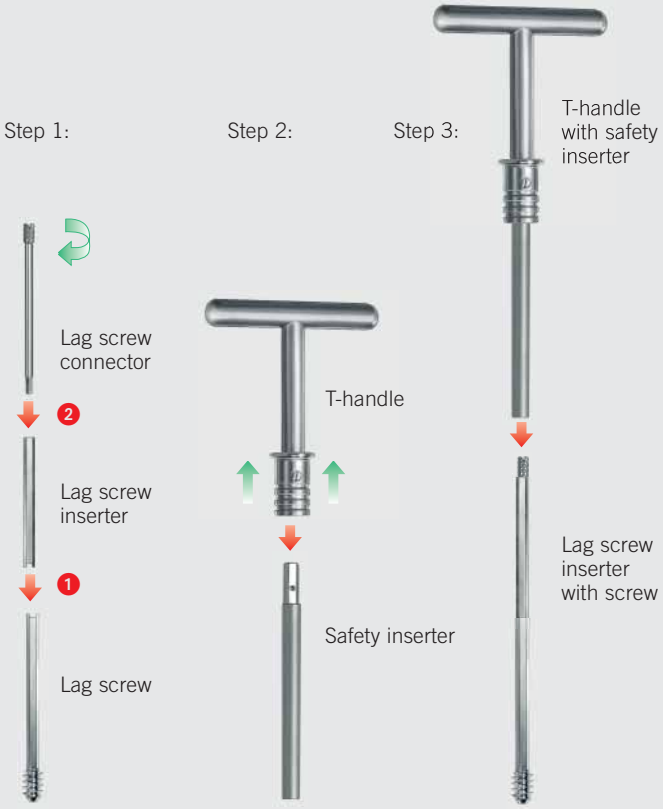




8. Inserting the lag screw

The length of the selected lag screw must match the drilling depth set on the combo reamer.

Using the lag screw connector, the screw is first fitted with the lag screw inserter sleeve before it is finally screwed in with the safety inserter for lag screw inserters and the T-handle.



9. Trial insertion of the plate

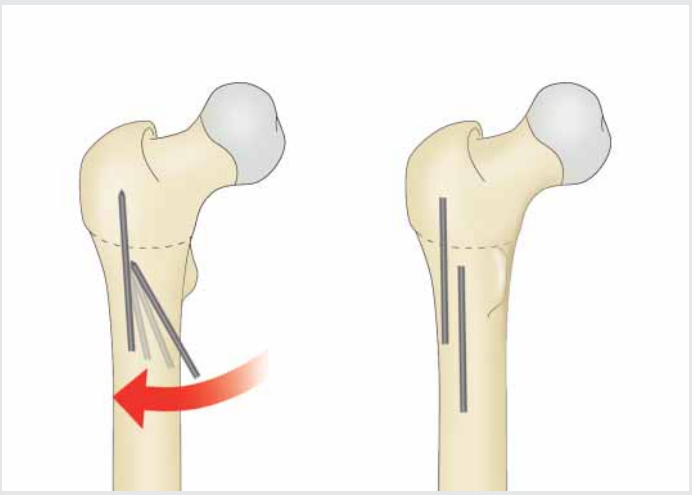
Now the appropriate DMS Intermediate plate can be inserted for testing purposes. This is done by pushing the cylindrical (barrel) part of the plate over the lag screw inserter onto the lag screw and attaching the plate to the shaft of the femur.

Notice:
Due to the hexagonal design of the lag screw, the plate may initially be out of line with the femoral shaft. In this case, attach the T-handle with the safety inserter again and adjust the lag screw by rotating it a little forward or backward.

10. Adjusting the plate

The plate must now be adapted accurately to the femoral shaft. This is done by adjusting its angulation via the adjusting screw, using the 2.5-mm Allen screwdriver.

To perform the osteotomy, the barrel plate is removed again while leaving the angular position unchanged for the time being. The lag screw remains in its final position.

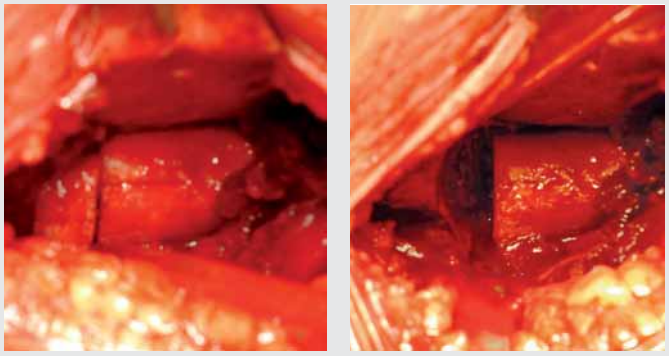


11. Osteotomy

To mark the rotation, or plan the rotational correction, two Kirschner wires with a thickness of approx. 2.5 mm are inserted into the femur ventrally or ventrolaterally, proximally and distally of the planned osteotomy.

Screwdriver

Guide wire



12. Osteotomy

Starting just distally of the lag screw insertion hole, the osteotomy is performed towards medial in such a way that the largest part of the lesser trochanter is left in place.

Preplacement of a Kirschner wire that can be used as a guide for the distal saw cut has proved useful.

Completion of the saw cut is followed by a marked widening of the osteotomy gap using a bone spreader in order to release the soft tissues.

Then the fragments are put in position according to the planned varus correction.

13. Inserting the plate

Now the plate can be inserted. This may require slight correction with the plate impactor.

Thereafter, the compression screw is inserted and slightly tightened.

The angulation is reduced as appropriate by rotating the adjusting screw clockwise (1 turn = 7.5°).

Plate impactor

Screwdriver

14. Fixing the plate

The plate is finally fixed in place with self-tapping 3.5-mm cortical screws.

If possible, the first screw should be inserted into the proximal sliding hole in compression position so the fragments are impacted a little.

When performing an opening osteotomy, it is recommended to fill the lateral gap by using a spongiosaplasty.

The compression screw is usually removed again to achieve optimal dynamization.

Finally, the result is documented in two planes by image intensifier.

Screwdriver

Drill bit for 3.5-mm cortical screws

Depth gauge

Drill bit guide

15. Wound closure

Thorough irrigation of the wound.

Good refixation of the vastus lateralis muscle if it has been detached by an L-shaped incision.

Then layer-by-layer wound closure with loose suturing of the trochanteric bursa. If necessary, use of 1 or 2 drains. Application of a long-leg (pelvis-leg-foot) spica cast is required only in exceptional cases, because correct implantation of the DMS Intermediate plate provides solid fixation allowing early range-of-motion exercises if not partial weight bearing.

Follow-up-treatment

On the 2nd or 3rd postoperative day, radiographic assessment: AP pelvic view and axial view of the hip (Lauenstein position).

Begin with mobilization on about the 3rd postoperative day with range-of-motion exercises including use of a continuous passive motion device and transfer in a wheelchair in recumbent position. Alternatively, mobilization with a walking frame or forearm crutches (as a rule with partial weight bearing).

Discharge on the 5th to 7th postoperative day.

After six weeks, radiographic follow-up and decision about full weight bearing.

Implant removal after three to four months.

DMS product range
Implants

DMS plate

Angulation
85°-145°

34 mm
Barrel length

St 1 unit(s)

Holes	Item No.
1	25-181-01-05
2	**25-181-02-05**
4	**25-181-04-05**
5	**25-181-05-05**
6	**25-181-06-05**
8	25-181-08-05
10	25-181-10-05
12	25-181-12-05
14	25-181-14-05
16	25-181-16-05
18	25-181-18-05

DMS plate

Angulation
85°-145°

24 mm
Barrel length

St 1 unit(s)

Holes	Item No.
4	25-182-04-05
6	25-182-06-05
8	25-182-08-05

DMC plate

Angulation
95°-115°

24 mm
Barrel length

St 1 unit(s)

Holes	Item No.
2	25-183-02-05
4	25-183-04-05
6	25-183-06-05
8	25-183-08-05
10	25-183-10-05
12	25-183-12-05
14	25-183-14-05
16	25-183-16-05

The products with boldfaced item numbers are included in the set.

Icon explanations

St Steel

1 unit(s) Packaging unit

Hexagon head

Lag screws

Ø 12.7 mm

St 1 unit(s)

Lag screws	Item No.
50 mm	25-180-50-05
55 mm	25-180-55-05
60 mm	**25-180-60-05**
65 mm	25-180-65-05
70 mm	**25-180-70-05**
75 mm	25-180-75-05
80 mm	**25-180-80-05**
85 mm	**25-180-85-05**
90 mm	**25-180-90-05**
95 mm	**25-180-95-05**
100 mm	**25-180-00-05**
105 mm	25-180-05-05
110 mm	**25-180-10-05**
115 mm	25-180-15-05
120 mm	25-180-20-05

Cortical screws

Ø 4.5 mm

St 5 unit(s)

Lag screws	Item No.
30 mm	25-114-30-05
32 mm	25-114-32-05
34 mm	25-114-34-05
36 mm	25-114-36-05
38 mm	25-114-38-05
40 mm	25-114-40-05
42 mm	25-114-42-05
44 mm	25-114-44-05
46 mm	25-114-46-05
48 mm	25-114-48-05
50 mm	25-114-50-05
52 mm	25-114-52-05
56 mm	25-114-56-05
60 mm	25-114-60-05
64 mm	25-114-64-05
70 mm	25-114-70-05

Compression screw

25-180-99-05
Ø 4.5 mm
Lag screws 37 mm

St 1 unit(s)

The products with boldfaced item numbers are included in the set.

DMS product range
Instruments

½

25-238-00-05
Guide wire
22.5 cm / 8 7/8"
Ø 2.5 mm
St 5 unit(s)

½

25-238-05-07
Measuring sleeve
20.5 cm / 8 1/8"
St 1 unit(s)

½

25-238-13-07
Combo reamer
for lag screw and 34-mm barrel
22 cm / 8 5/8"
St 1 unit(s)

25-238-12-07
Combo reamer
for lag screw and 24-mm barrel
St 1 unit(s)

½

25-238-18-04
Centering sleeve
(11 mm) for 25-238-21-07
11 cm / 4 3/8"
Al 1 unit(s)

25-238-19-04
Centering sleeve
for 25-238-06-07
Al 1 unit(s)

The products with boldfaced item numbers are included in the set.

Icon explanations

St Steel

Al Aluminum

1 unit(s) Packaging unit

1/2

25-238-17-07

Tap

23 cm / 9"

St 1 unit(s)

1/2

25-238-06-07

Lag screw inserter

21.5 cm / 8 4/8"

St 1 unit(s)

1/2

25-238-20-07

Lag screw connector

20 cm / 7 7/8"

St 1 unit(s)

1/2

25-238-21-07

Safety inserter for screwdriver

24 cm / 9 4/8"

St 1 unit(s)

The products with boldfaced item numbers are included in the set.

DMS product range
Instruments

3.5 mm

½

25-268-35-07
Screwdriver
25 cm / 9 7/8"
for worm gears and for 4.5-mm cortical screws and 6.5-mm cancellous screws
St 1 unit(s)

25-238-25-04
Spare part, alone

½

25-238-14-07
Plate impactor
20 cm / 7 7/8"
St 1 unit(s)

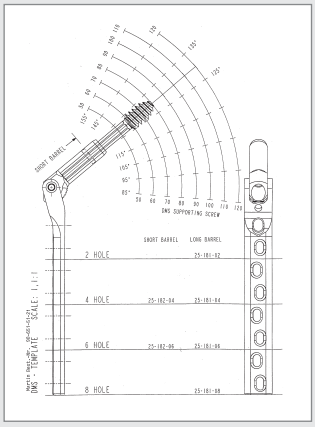
½

25-238-08-07
T-handle
6.5 cm / 2 4/8"
St 1 unit(s)

½

25-212-45-07
Soft tissue sleeve
14.5 cm / 5 6/8"
St 1 unit(s)

The products with boldfaced item numbers are included in the set.



90-651-51-21
X-ray template for preoperative planning

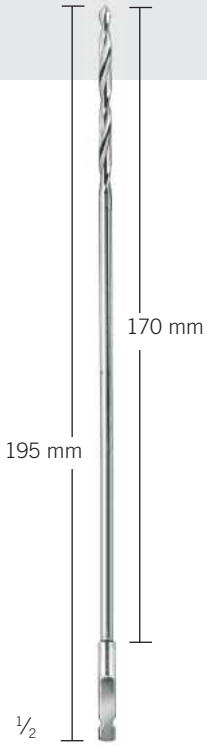
1 unit(s)

Icon explanations

- St — Steel
- 1 unit(s) — Packaging unit
- Hexagon head

25-238-01-07
Aiming device

St 1 unit(s)



25-210-30-07
Drill bit
Ø 3.2 mm
with AO attachment
for 4.5-mm cortical screws

St 1 unit(s)

25-219-05-07
Depth gauge

St 1 unit(s)

For Ø 3.2-mm drill bits

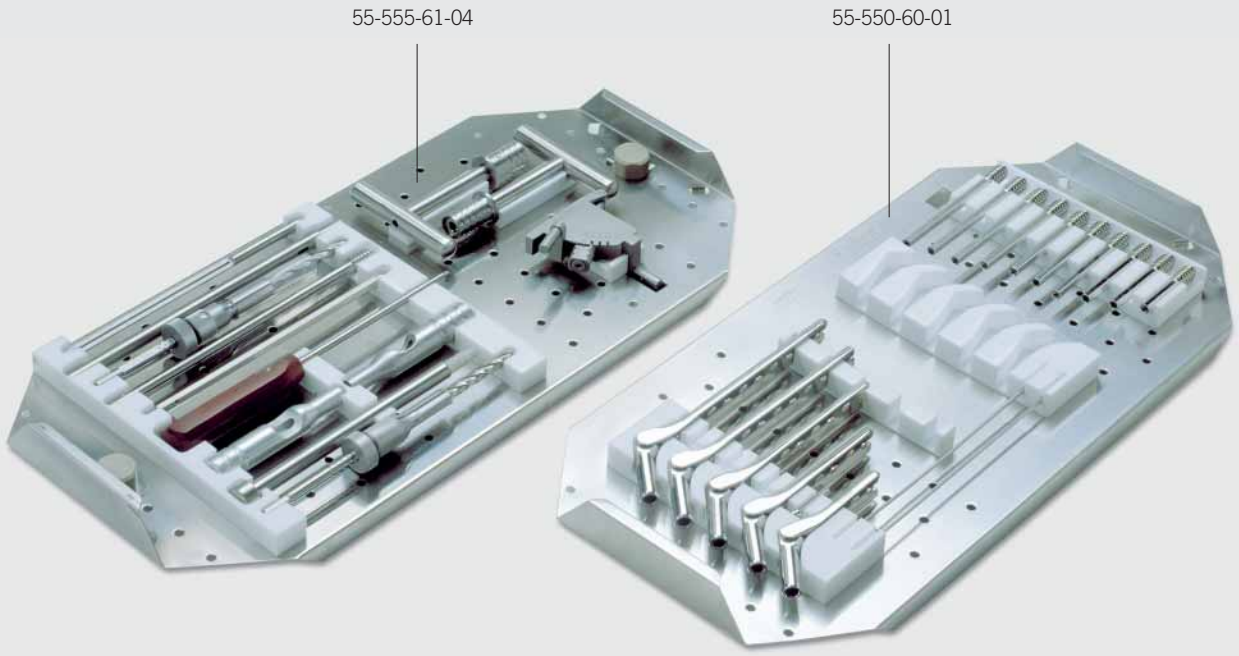
25-222-44-01
Drill bit guide
16.5 cm / 6 1/2"
for 3.2-mm drill bits

St 1 unit(s)

DMS product range

Storage trays and set list

The instrument set described as follows represents the basic equipment needed for implanting DMS plates.



Set including options

KLS Martin DMS Set

consisting of:

Item No.	Quantity	Description
25-400-00-04		KLS Martin DMS Set
		Implants
25-180-60-05	1	Lag screw, 60 mm
25-180-70-05	1	Lag screw, 70 mm
25-180-80-05	1	Lag screw, 80 mm
25-180-85-05	1	Lag screw, 85 mm
25-180-90-05	1	Lag screw, 90 mm
25-180-95-05	1	Lag screw, 95 mm
25-180-00-05	1	Lag screw, 100 mm
25-180-10-05	1	Lag screw, 110 mm
25-180-99-05	3	Compression screws
25-181-02-05	1	Plate, 2-hole
25-181-04-05	1	Plate, 4-hole
25-181-05-05	1	Plate, 5-hole
25-181-06-05	1	Plate, 6-hole
		Instruments
25-238-00-05	1	Guide wire, 5 pcs.
25-238-05-07	1	Measuring sleeve
25-238-06-07	1	Lag screw inserter
25-238-08-07	1	T-handle
25-238-13-07	1	Combo reamer
25-238-14-07	1	Plate impactor
25-238-17-07	1	Tap
25-238-18-04	1	Centering sleeve (11 mm) 25-238-21-07
25-238-20-07	1	Lag screw connector
25-238-21-07	1	Safety inserter for lag screw inserter
22-368-35-07	1	Screwdriver, 3.5 mm, Allen
		Storage
55-550-60-01	1	Perforated tray for implants
55-555-61-04	1	Perforated tray for instruments
55-443-22-04	2	Coding labels, lettered, w/o hole
55-443-12-04	2	Logistics framelets, red
55-442-13-04	1	Container, 600 x 300 x 140 mm

DMS Intermediate product range
Implants

DMS Intermediate plate

Angulation
80°-110°

19 mm
Barrel length

St 1 unit(s)

STERILE

Holes	Item No.
3	25-178-03-05
4	25-178-04-05
6	25-178-06-05
8	25-178-08-05

DMS Intermediate plate

Angulation
110°-145°

19 mm
Barrel length

St 1 unit(s)

STERILE

Holes	Item No.
3	25-179-03-05
4	25-179-04-05
6	25-179-06-05
8	25-179-08-05

The products with boldfaced item numbers are included in the set.

Icon explanations

- St — Steel
- 1 unit(s) — Packaging unit
- Hexagon head
- STERILE — steam-sterilized

Lag screws

Ø 9.5 mm

St · 1 unit(s)

STERILE

Lag screws	Item No.
35 mm	25-170-35-05
40 mm	25-170-40-05
45 mm	25-170-45-05
50 mm	25-170-50-05
55 mm	25-170-55-05
60 mm	25-170-60-05
65 mm	25-170-65-05
70 mm	25-170-70-05
75 mm	25-170-75-05
80 mm	25-170-80-05
85 mm	25-170-85-05
90 mm	25-170-90-05

Cortical screws

Ø 3.5 mm

St · 5 unit(s) · Hexagon head

STERILE

Lag screws	Item No.
16 mm	**25-103-16-05**
18 mm	**25-103-18-05**
20 mm	**25-103-20-05**
22 mm	**25-103-22-05**
24 mm	**25-103-24-05**
26 mm	**25-103-26-05**
28 mm	**25-103-28-05**
30 mm	**25-103-30-05**
32 mm	**25-103-32-05**
34 mm	**25-103-34-05**
36 mm	**25-103-36-05**
38 mm	**25-103-38-05**
40 mm	**25-103-40-05**
45 mm	25-103-45-05
50 mm	25-103-50-05
55 mm	25-103-55-05
60 mm	25-103-60-05

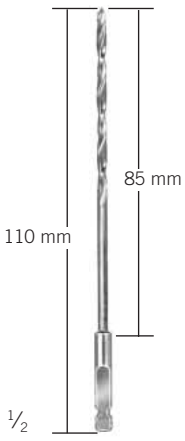
Compression screw

25-170-99-05
Ø 3.5 mm
Lag screws 25 mm

St · 1 unit(s) · Hexagon head

The products with boldfaced item numbers are included in the set.

DMS Intermediate product range
Instruments



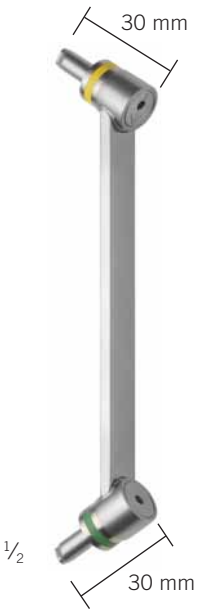
25-210-25-07
Drill bit
Ø 2.5 mm
for 3.5-mm
cortical screws

St 1 unit(s)

25-219-04-07
Depth gauge
16 cm / 6 ⅜"

St 1 unit(s)

for drill bits Ø 2.5 mm
for cortical screws Ø 3.5 mm



25-222-32-01
Drill bit guide for neutral and eccentric holes
14 cm / 5 ⅛"

St 1 unit(s)

25-228-00-05
DMS Intermediate guide wire
18 cm / 7"
Ø 2.0 mm

St 1 unit(s)

The products with boldfaced item numbers are included in the set.

Icon explanations

St Steel

1 unit(s) Packaging unit

½

25-228-05-07

DMS Intermediate measuring sleeve

15 cm / 6"

St 1 unit(s)

½

25-228-06-07

DMS Intermediate lag screw inserter

7 cm / 2 6/8"

St 1 unit(s)

½

25-228-20-07

DMS Intermediate lag screw connector

9 cm / 3 4/8"

St 1 unit(s)

½

25-228-21-07

DMS Intermediate safety inserter for lag screw inserter

12.5 cm / 5"

St 1 unit(s)

The products with boldfaced item numbers are included in the set.

DMS Intermediate product range
Instruments

½

25-228-12-07
DMS Intermediate combo reamer
16 cm / 6 2/8"
St 1 unit(s)

½

25-228-14-07
DMS Intermediate plate impactor
15 cm / 6"
St 1 unit(s)

½

25-228-17-07
DMS Intermediate tap
15 cm / 6"
St 1 unit(s)

The products with boldfaced item numbers are included in the set.

Icon explanations

St Steel

1 unit(s) Packaging unit

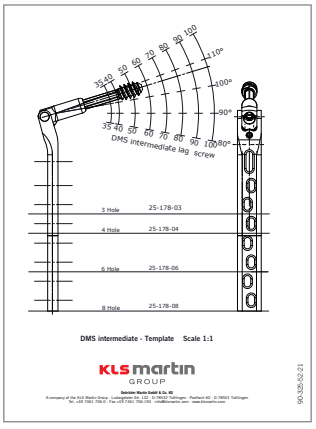
Hexagon head

Ø 2.5 mm

1/1

1/2

1/2



25-238-08-07

DMS T-handle

12 cm / 4 7/8"

St 1 unit(s)

22-368-24-07

Screwdriver, Allen

24 cm / 9 4/8"

for worm gears and for cortical screws Ø 3.5 mm and cancellous screws Ø 4.0 mm

St 1 unit(s)

25-238-01-07

X-ray template for preoperative planning

1 unit(s)

The products with boldfaced item numbers are included in the set.

DMS Intermediate product range

Storage tray and set list

The instrument set described as follows represents the basic equipment needed for implanting DMS Intermediate plates.

55-550-50-01
Storage tray

DMS Intermediate Set

consisting of:

Item No.	Quantity	Description
25-170-00-01	1	DMS Intermediate Set
		Implants
25-103-16-05 – 25-103-40-05	1	Cortical screw, 3.5 x 16-40 mm, self-tapping
		Instruments
22-368-24-07	1	Screwdriver, 2.5 mm, Allen
25-219-04-07	1	Depth gauge, small, 16 cm
25-210-25-07	1	Drill bit, 2.5 mm
25-228-00-05	1	DMS Intermediate guide wire
25-228-05-07	1	DMS Intermediate measuring sleeve
25-228-06-07	1	DMS Intermediate lag screw inserter
25-228-12-07	1	DMS Intermediate combo reamer
25-228-14-07	1	DMS Intermediate plate impactor
25-228-17-07	1	DMS Intermediate tap
25-228-20-07	1	DMS Intermediate lag screw connector
25-228-21-07	1	DMS Intermediate safety inserter for screwdriver
25-222-32-01	1	Drill bit guide for 3.5-mm screws
25-238-08-07	1	DMS T-handle
		Storage tray
55-550-50-01	1	DMS Intermediate storage tray for instruments and implants

Notice:
The DMS Intermediate plates, lag screws and – if needed – compression screws must be ordered separately for each patient.

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