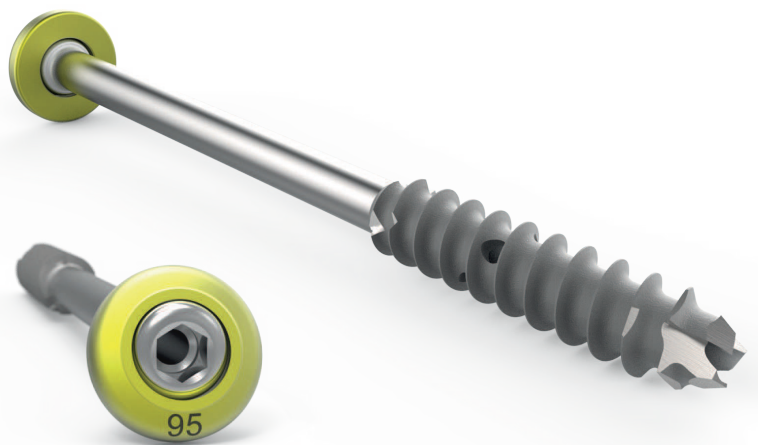


ISG

Screw System



► **Table of Contents**

Introduction	System Characteristics	2
	Indication	2
Surgical Technique	Positioning	3
	Access	3
	Insertion of the Guide Wire	3
	Determination of the Screw Length	4
	Insertion of the Screw	4
	Preparation for Sement Application	5
	Cement Application	6
Product Informations	Implants	7
	Instruments	8

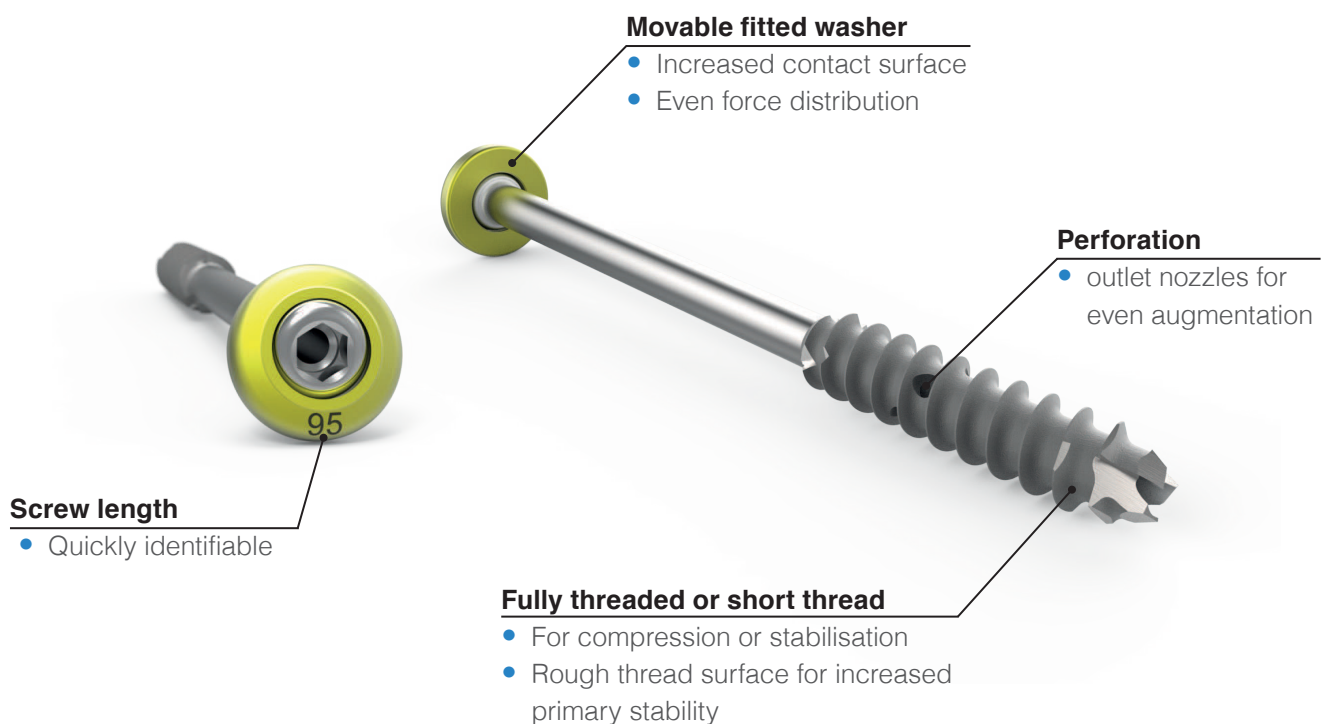
Note:

The surgical technique outlined below reflects the surgical procedure usually chosen by the clinical advisor. However, each surgeon must decide which surgical method and which approach is the most successful for his patient.

► Introduction

System Characteristics

- The **ISG - Screw System** can be used for iliosacral screw fixation.
- The screws are fitted with a movable washer and are optionally available fully threaded or with a short thread.
- The washers fitted ensure an even distribution of force on the bone.
- The osteosynthesis stability of the ISG screw can be increased with the use of bone cement, as necessary.



Indication

- Fixation of osteoporotic and non-osteoporotic fractures of the pelvis.
- Arthrosis or dislocation in the sacroiliac joint.

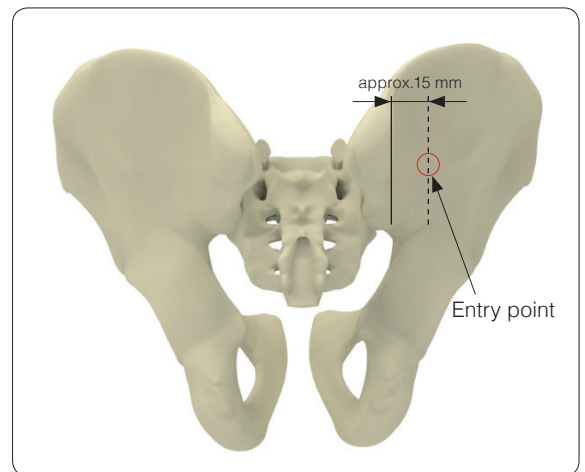
► Surgical Technique

1. Positioning

- The operation is performed in the supine position on an X-ray permeable operating table.
- The C-arm should be positioned such that anteroposterior, inlet and outlet X-rays can be taken.
- With medial padding of the pelvis, the guide wire can be correctly placed in the dorsoventral/lateromedial direction.
- Movable covering of the leg on the side to be operated.

2. Access

- Access is obtained with a stab incision above the planned screw insertion point on S1.
- This should be located in the middle of the parallel - to the linea glutea posterior - offset by approx. 15 mm.

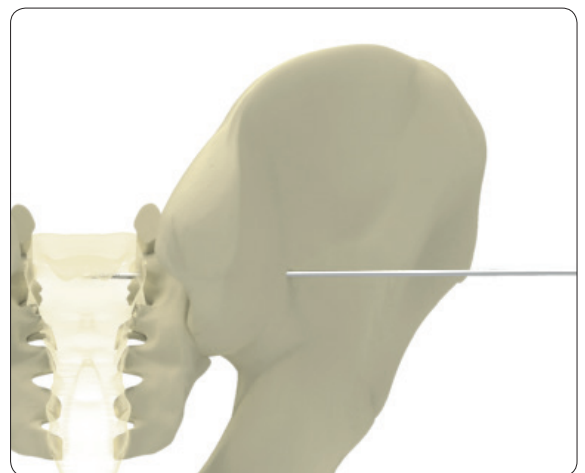


3. Insertion of the Guide Wire

Instruments

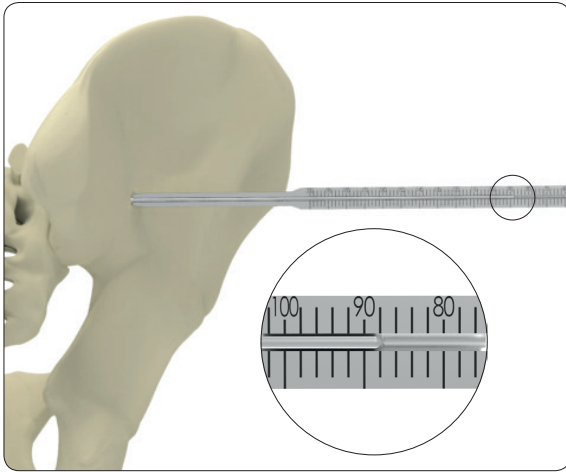
REF 11.90228.300 Kirschner Wire Ø 2.8 mm

- The first sacral vertebral body S1 is localised with the help of an image converter.
- The K-wire is inserted along the lateral beam path according to the anatomical conditions through to the ilium cortex.
- Inlet and outlet X-rays are taken and the K-wire position is corrected, as necessary.
- Given the correct positioning, the K-wire is placed through the S1 corridor in the vertebral body.
- The correct position of the K-wire is verified by means of a 3D scan.



Please note:

- The K-wire should run at an angle of approx. 90° to the fracture gap.
- The ventral and dorsal cortical bone of the sacrum should not be injured.
- Alternatively, the K-wire can be inserted under 3D navigation.



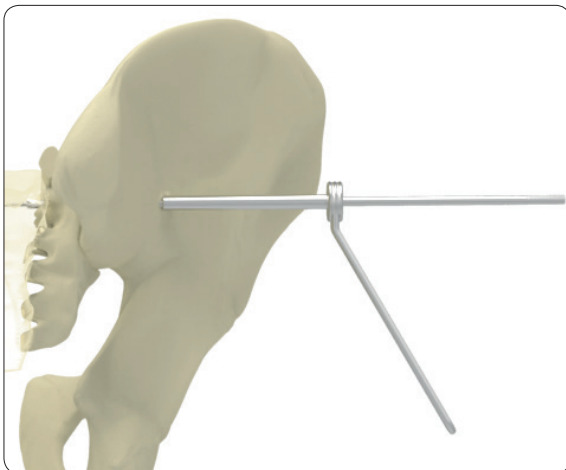
3. Determination of the Screw Length

Instruments

REF 08.20100.073

Direct Measuring Device

- The direct measuring device is pushed over the K-wire through to the bone.
- The screw length is read off at the end of the K-wire.



Instruments

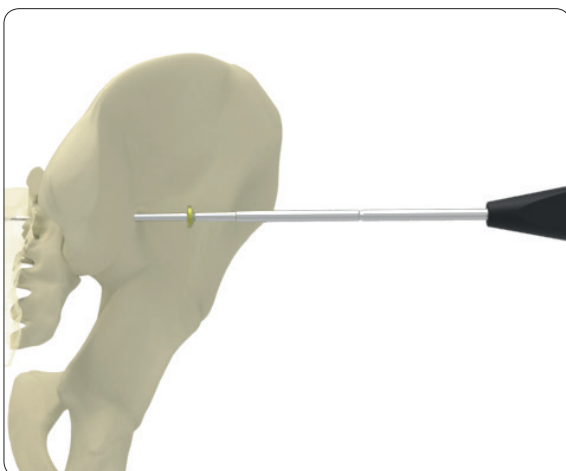
REF 08.20010.150

Drill Bit Ø 5.0 mm

REF 08.20120.075

Drill Sleeve Ø 5.0 mm

- Using the cannulated drill bit Ø 5.0 mm, the cortical bone is drilled above the K-wire, through the drill sleeve.
- Ensure under image intensification that the drill bit is not advanced further than the tip of the K-wire to prevent loosening of the K-wire.



4. Insertion of the Screw

Instruments

REF 08.20040.173

Screwdriver

- The screw is inserted over the K-wire using the cannulated screwdriver.

Please note:

- The screw must be tightened until the washer rests on the bone.

Optional

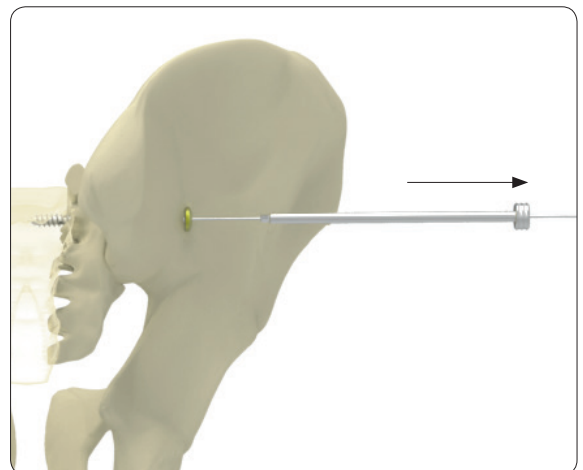
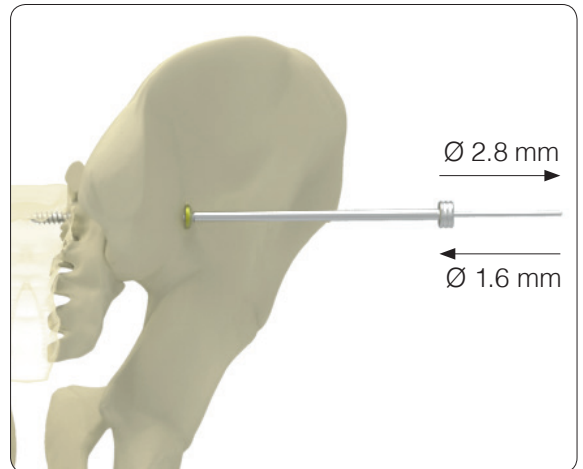
Given reduced bone quality, the implant anchoring may optionally be improved by cement augmentation.

5. Preparation for Cement Application

Instruments

REF 08.20120.421(S) Guide Wire Ø 1.6 mm
REF 08.20120.422 Exchange Tube Ø 2.8 mm

- Removing the screwdriver, the K-wire Ø 2.8 mm should not come out of the screw head.
 - Next, the exchange tube is advanced over the Ø 2.8 mm K-wire into the screw head.
 - Then the Ø 2.8 mm K-wire is exchange through the Ø 1.6 mm guide wire and pushed forward until the tip of the screw.
-
- When removing the exchange tube, the Ø 1.6 mm guide wire should not be pulled out of the screw. To prevent this, the Ø 2.8 mm K-wire can be held against it.



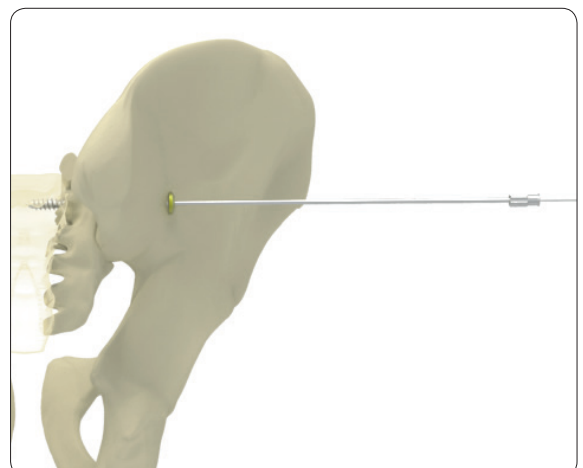
Instruments

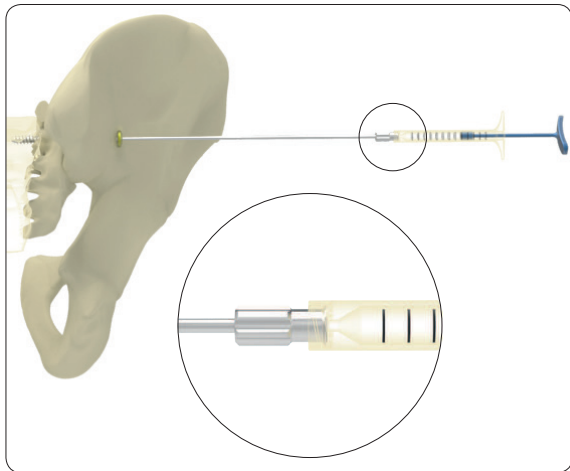
REF 08.20120.420(S) Cement Cannula Ø 2.8 mm with Luer Lock

- The cement cannula is advanced over the Ø 1.6 mm guide wire up to the screw tip.
- The Ø 1.6 mm guide wire is then removed.

Please note:

- The information from the respective manufacturer must be observed in the preparation and use of the bone cement.



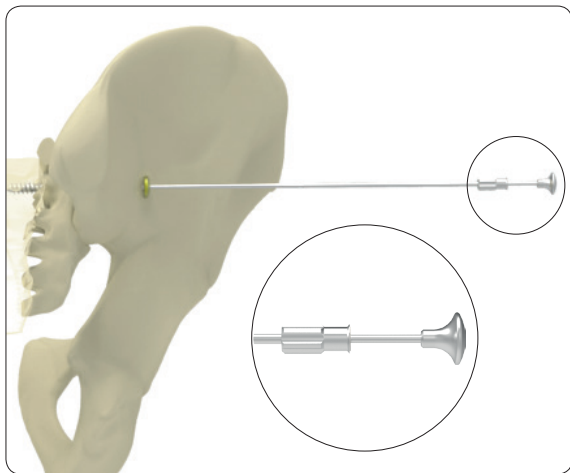


6. Cement Application

Instruments

REF 08.20120.423(S) Tappet Ø 2.2 mm for Cement Cannula

- Prior to augmentation, a contrast agent is applied through the cement cannula while monitoring with the image converter and the distribution in the bone and the outflow via presacral veins is verified.
- If the contrast agent test is inconspicuous, augmentation can be performed via the Luer port of the cement cannula.
- The filling volume of the cement cannula is 1.5 ml.
- A volume of approx. 2-3 ml is usually sufficient to enclose the screw tip with a cloud shape.
- During augmentation, the distribution of the bone cement should be monitored with the image converter.
- Using the tappet, the bone cement can be completely expelled from the cannula into the screw.



- Following application, the cement cannula with the tappet is removed and disposed of.
- Finally there is X-ray control from anteroposterior and lateral.

► Product Informations

Implants

Article Number	Length	Article Number	Length
08.03910.050S	50 mm	08.03910.110S	110 mm
08.03910.055S	55 mm	08.03910.115S	115 mm
08.03910.060S	60 mm	08.03910.120S	120 mm
08.03910.065S	65 mm	08.03910.125S	125 mm
08.03910.070S	70 mm	08.03910.130S	130 mm
08.03910.075S	75 mm	08.03910.135S	135 mm
08.03910.080S	80 mm	08.03910.140S	140 mm
08.03910.085S	85 mm	08.03910.145S	145 mm
08.03910.090S	90 mm	08.03910.150S	150 mm
08.03910.095S	95 mm	08.03910.155S	155 mm
08.03910.100S	100 mm	08.03910.160S	160 mm
08.03910.105S	105 mm	08.03910.165S	165 mm

ISG - Screw Ø 7.5 mm, Fully threaded

- Thread diameter:: Ø 7.5 mm
- Hexagon socket: SW 4.0 mm
- Washer diameter: Ø 14.0 mm
- Material: Ti6Al4V



Article Number	Length	Article Number	Length
08.03912.050S	50 mm	08.03912.110S	110 mm
08.03912.055S	55 mm	08.03912.115S	115 mm
08.03912.060S	60 mm	08.03912.120S	120 mm
08.03912.065S	65 mm	08.03912.125S	125 mm
08.03912.070S	70 mm	08.03912.130S	130 mm
08.03912.075S	75 mm	08.03912.135S	135 mm
08.03912.080S	80 mm	08.03912.140S	140 mm
08.03912.085S	85 mm	08.03912.145S	145 mm
08.03912.090S	90 mm	08.03912.150S	150 mm
08.03912.095S	95 mm	08.03912.155S	155 mm
08.03912.100S	100 mm	08.03912.160S	160 mm
08.03912.105S	105 mm	08.03912.165S	165 mm

ISG - Screw Ø 7.5 mm, Short thread

- Thread diameter: Ø 7.5 mm
- Hexagone socket: SW 4.0 mm
- Washer diamter: Ø 14.0 mm
- Material: Ti6Al4V



Instruments

11.90228.300 Kirschner Wire Ø 2.8 mm, threaded tip, L 300 mm, stainless steel

08.20010.150 Drill Bit Ø 5.0/2.9 mm, 4-flute, cannulated, calibrated, Jacobs Chuck, L 295/265 mm

08.20100.073 Direct Measuring Device for Kirschner Wires Ø 2.8 mm

08.20120.173 Cleaning Wire Ø 2.8 mm, L 270 mm

08.20040.173 Screwdriver, hex 4.0 mm, cannulated, L 295/185 mm

08.20040.373 Screwdriver shaft, hex 4.0 mm, cannulated, Jacobs Chuck, L 295/265 mm

08.20120.422 Exchange Tube Ø 2.8 mm, hex 4.0 mm

08.20120.075 Drill Sleeve Ø 5.0 mm

08.20120.425 * ISG Cement Application Set

08.20120.420 Cement Cannula Ø 2.8 mm with Luer Lock, L 315 mm

08.20120.421 Guide Wire Ø 1.6 mm, L 350 mm, stainless steel

08.20120.423 Tappet Ø 2.2 mm for Cement Cannula, L 329 mm

* Instrument is also available in sterile.
Therefor, add suffix "S" to article number.



Dieter Marquardt Medizintechnik GmbH

Robert-Bosch-Str. 1 - 78549 Spaichingen
Telefon: +49 (0) 7424 / 95810 - Telefax: +49 (0) 7424 / 501441

info@marquardt-medizintechnik.de
www.marquardt-medizintechnik.de

Release date: 17.05.2017; 08.99100.302; Rev.: 003/00