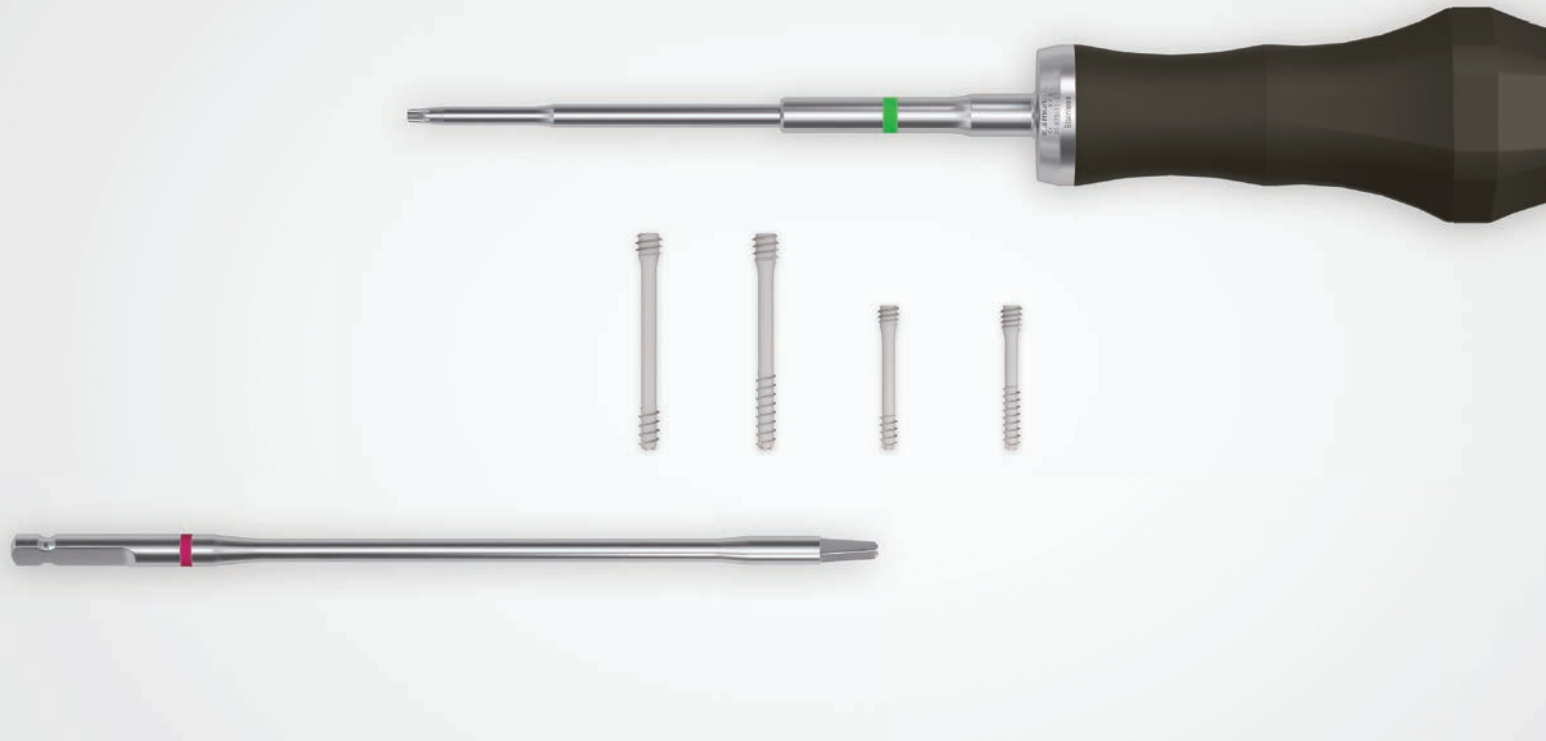
KLS martin GROUP



HBS 2 Resorb Mg

Headless cannulated compression screws – resorbable

www.klsmartin.com

Osteosyntheses are our passion!
It is our ambition to advance these together with our clinical partners. Every day we work on developing innovative products and services which meet the highest demands on quality, and which contribute to the wellbeing of the patient.

Table of contents

HBS 2 Resorb Mg
Metal and yet resorbable

After more than 100,000 successful implantations with HBS and HBS 2 screws, the next generation was introduced: The HBS 2 Resorb Mg, a resorbable compression screw made of a special magnesium alloy. It retains the proven geometry of the HBS 2, so that existing instruments and accessories can continue to be used.

The resorbable implants enable optimal patient care, as no metal needs to be removed and therefore no second surgical procedure is necessary. A modified surface slows down resorption and reduces the formation of hydrogen gas, thus leading to faster restoration of the original bone structure. The system offers advanced treatment options and can be seamlessly integrated into existing surgical protocols due to its established ergonomics.

Feature, function and benefitit

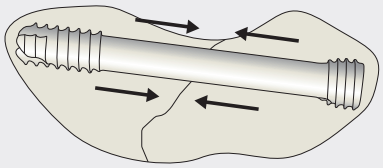
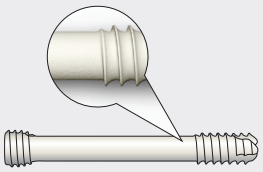
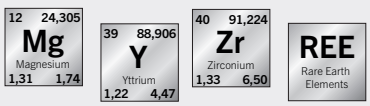
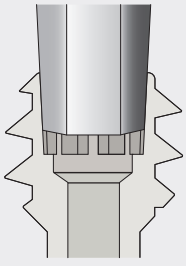
HBS 2 Resorb Mg screws are available in the following dimensions in sterile packaging:

	Total length	Length of thread, proximal	Length of thread, distal
HBS 2 Resorb Mg Ø 2.5 short thread **HBS 2** Resorb Mg Ø 2.5 long thread	10 - 30 mm (1-mm steps) 20 - 40 mm (2-mm- steps)	2.6 mm 3.7 mm	4 - 6 mm 9 -13 mm
HBS 2 Resorb Mg Ø 3.0 short thread **HBS 2** Resorb Mg Ø 3.0 long thread	10 - 30 mm (1-mm steps) 20 - 40 mm (2-mm- steps)	3.5 mm 5.0 mm	4 - 6 mm 9 -13 mm

All screw variants are made of the magnesium alloy WE43, with an additional surface modification. This leads to improved mechanical stability compared to pure magnesium or other magnesium alloys. In addition, this allows for slower and more controlled degradation, thus providing fractures or osteotomies with sufficient mechanical support until consolidation.

During the resorption process, hydrogen gas may be released, which appears as a shadow around the implant when imaging. This is a normal part of the process and should not be confused with signs of the implant becoming loose. To realistically assess the position and volume of the released gas, we recommend viewing postoperative X-rays from several planes.

HBS 2 Resorb Mg – implants

	Feature and function	benefits
	■ Compression screw, cannulated, made of a resorbable magnesium alloy. ■ With the proven HBS 2 geometry.	■ Easy placement of the screw due to cannulation. ■ Can be implanted flush with the bone surface, including defined and reproducible compression. ■ Greater stability compared to resorbable polymers. ■ Biocompatibility according to international standards. ■ Visible on X-ray imaging and CT for intra- and postoperative monitoring. ■ No removal of metal/second surgery necessary.
	■ Surgical technique for HBS 2 and HBS 2 Resorb Mg is largely identical.	■ Continued use of HBS 2 instruments. ■ Intuitive application.
	■ Ceramized surface (surface modification).	■ Retarded resorption for optimized bone healing and integration in the bone tissue. ■ Minimized formation of hydrogen gas.
	■ Resorption process (approx. 24 to 36 months, depending on the implant size and the patient's specific metabolism).	■ Controlled and bony remodeling of the screw. ■ Formation of new and compact bone material.
	■ Magnesium alloy (magnesium, yttrium, zirconium, rare earths).	■ Rare earths as an alloy component ensure increased mechanical stability when compared to pure magnesium.
	■ T7/T8 with self-retaining function.	■ Easy pick-up, insertion and removal of the screw.

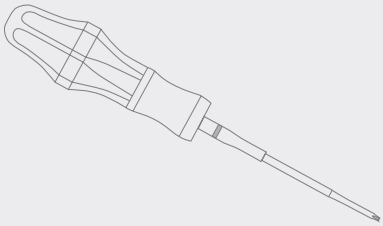
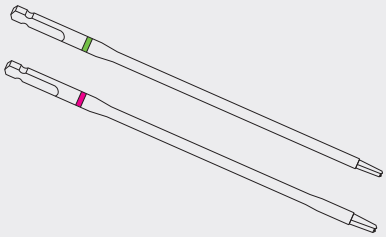
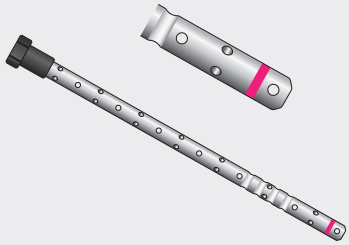
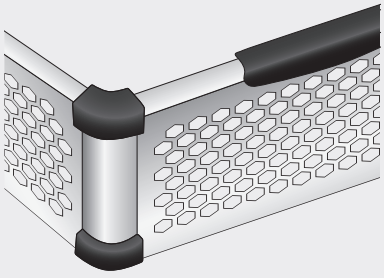
Feature, function and benefit

The instruments are color-coded for easy and efficient handling. Only a few instruments are required for treatment.

Given the mechanical features of the magnesium screws, it is necessary to open the cortex prior to implantation. For this purpose, the existing HBS 2 instrument set was supplemented with a countersink. The twist drill already included in the HBS 2 set is suitable for pre-drilling as required for the magnesium screws.

This provides the option of treating indications with both HBS 2 and HBS 2 Resorb Mg using just a single instrument set.

HBS 2 Resorb Mg – instruments and storage

	Feature and function	Benefits
	■ Single-piece instruments with ergonomically shaped silicone handles.	■ Good tactile feedback. ■ No couplings that could lead to mix-ups. ■ No parts that can get lost.
	■ Countersink for opening the cortex. ■ The countersink is the only addition to the existing HBS 2 set of instruments.	■ Reduced torque for implanting the screws. ■ Titanium and magnesium screws can be implanted using virtually the same instruments and the same storage unit.
	■ Color-coded instruments: - HBS 2 Resorb Mg Ø 2.5 - HBS 2 Resorb Mg Ø 3.0	■ Easier identification of the respective instruments.
	■ Stainless steel storage unit in reprocessing-optimized design combined with high-performance plastic.	■ High strength, light weight. ■ Large openings ensure excellent rinsing capability. ■ No water residues. ■ Good ergonomics.

Step by step to optimal treatment

Fields of use

HBS 2 Resorb Mg

The HBS 2 Resorb Mg is used for the treatment of intra-articular and extra-articular fractures and pseudarthroses of small bones and bone fragments, as well as for arthrodeses on small joints.

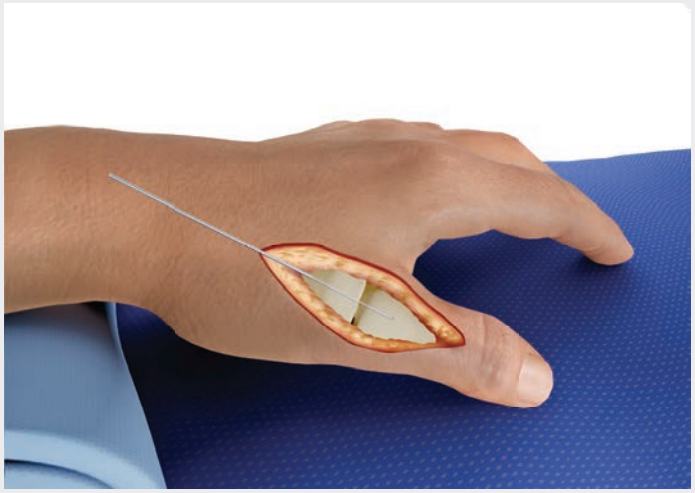
Surgical technique

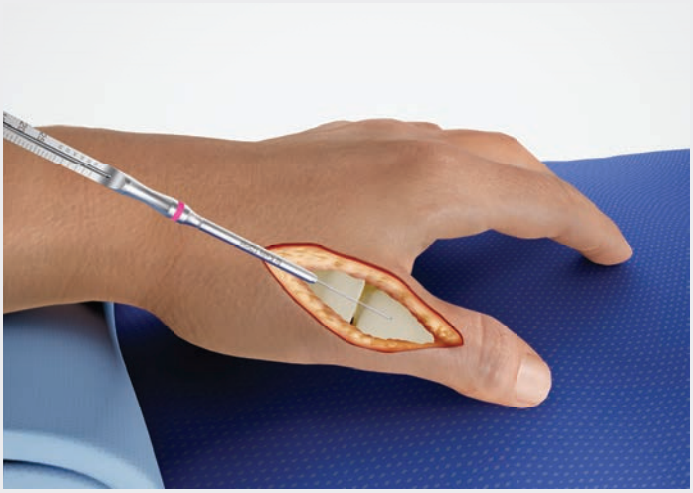
1. Dorsal approach

A dorsal, longitudinal skin incision is made above the MCP-I joint. The tendons of the extensor pollicis longus (EPL) and extensor pollicis brevis (EPB) muscles are carefully identified and separated from each other to provide an approach to the underlying joint. Next, the joint capsule is opened and the MCP-I joint is fully exposed.

2. Preparation of the joint

To prepare the fusion surfaces, the metacarpal head and the base of the proximal phalanx are resected using a sagittal saw. The aim is to expose the cancellous bone and create flat, congruent contact surfaces. The incision at the proximal phalanx is performed perpendicular to the longitudinal axis, while the metacarpal head is resected at an angle to enable a functional fusion position of approximately 20° flexion. If necessary, the surfaces can also be freshened with a K-wire.





3. Repositioning and temporary fixation

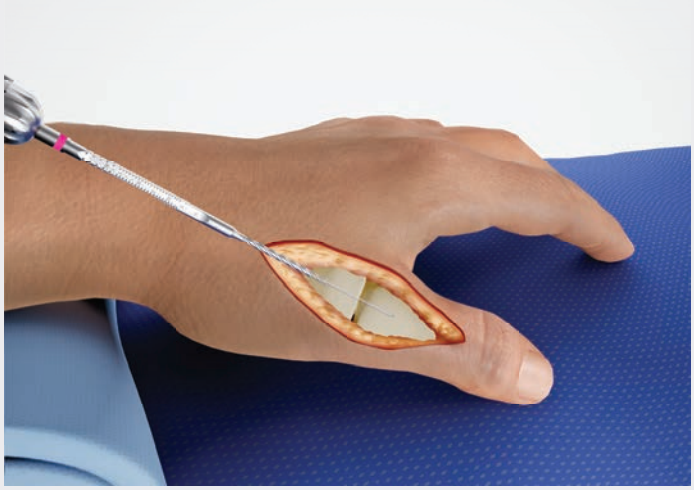
A guide wire (Ø 1.1 mm × 125 mm) is inserted centrally from distal to proximal into the metacarpal head. After aligning the joint in the desired fusion position, the wire is advanced into the proximal phalanx to temporarily stabilize the position. Fluoroscopy is used to confirm the correct alignment and position of the wire.

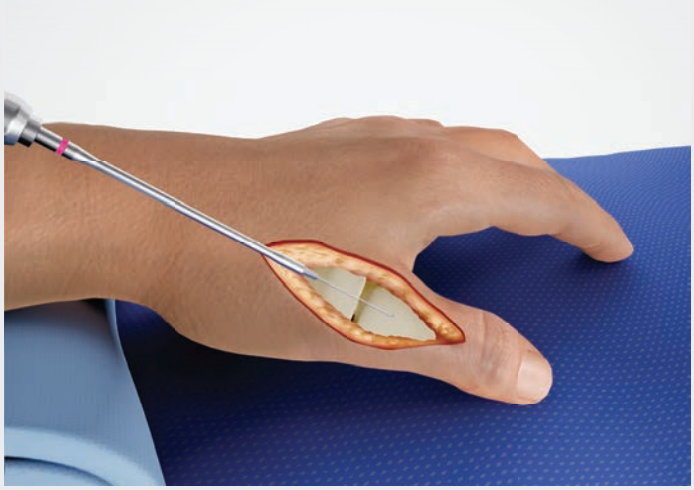
4. Length measurement

The cannulated depth gauge is used to measure the appropriate screw length via the guide wire. The gauge is advanced until it touches the bone surface, and the required screw length can then be read directly from the integrated scale.
After determining the correct screw length, the K-wire should be advanced further into the phalanx to prevent the wire from jamming during drilling.

26-850-00-05
Guide wire
125 mm
Ø 1.1 mm

26-850-06-07
Gauge





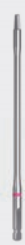
5. Pre-drilling

The guide wire is over-drilled to the predetermined depth using a 2.3 mm drill. It is important to avoid excess overdrilling, as this can lead to the wire jamming in the drill. However, if jamming does occur, the wire must be repositioned before proceeding to the next step.

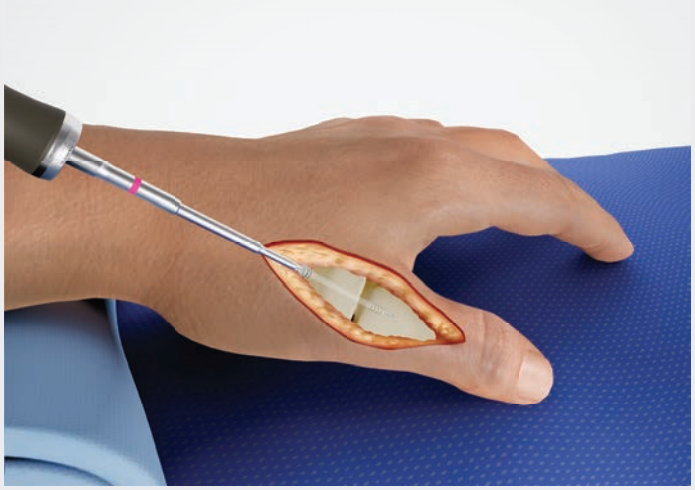
6. Countersinking

In the case of hard bone, the cortex can be opened via the guide wire using a cannulated countersink. The instrument is pushed forward to the stop to make room for the screw head and reduce the tightening torque.

26-850-20-09
Twist drill, cannulated,
Ø 2.3 / 1.1 mm

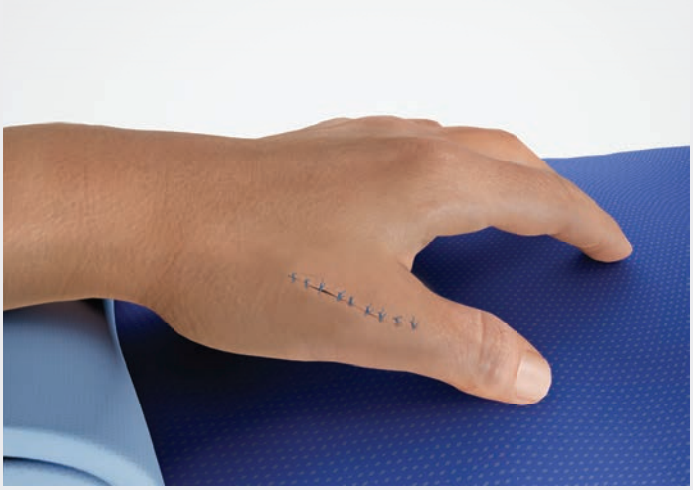


53-876-50-07
Countersink for HBS2 Mg
Ø 3.0 / midi AO



7. Placement of the screw

An HBS 2 Resorb Mg screw (Ø 3.0 mm) of a previously determined length is inserted into the prepared drill hole using a screwdriver via the guide wire. Here, it is important to ensure correct axial alignment as well as even pressure when tightening the screw. Once the screw is fully engaged, the guide wire is removed and the final screw position is checked using imaging control.
A slight protrusion of the screw head above the bone surface can be tolerated as long as the proximal thread of the screw is securely anchored in the cortex.

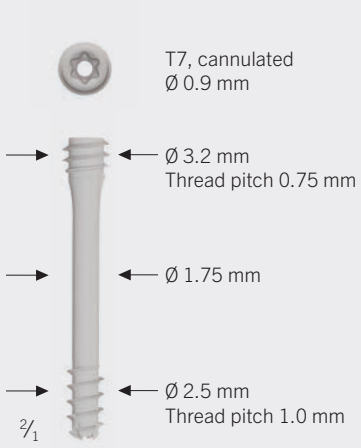


8. Wound closure

Wound closure is performed layer by layer according to the standard protocol. Postoperatively, immobilization of the hand in a cast for two weeks is recommended, followed by further immobilization with a splint for approximately four weeks.

26-850-17-07
Screwdriver T8,
cannulated

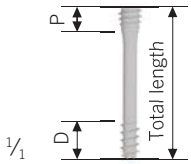
Implants **HBS** 2 Resorb Mg



HBS 2 Resorb Mg Ø 2.5 mm

HBS 2 Resorb Mg Ø 2.5 short thread

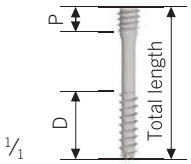
Length of thread, proximal
P = 2.6 mm



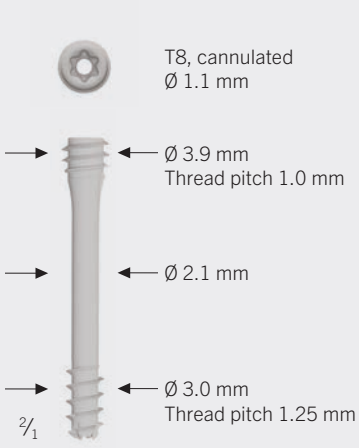
Total length (mm)	STERILE EO	length of thread, distal D (mm)
10	53-800-10-04	4.0
11	53-800-11-04	4.0
12	53-800-12-04	4.0
13	53-800-13-04	4.0
14	53-800-14-04	5.0
15	53-800-15-04	5.0
16	53-800-16-04	5.0
17	53-800-17-04	5.0
18	53-800-18-04	5.0
19	53-800-19-04	5.0
20	53-800-20-04	5.0
21	53-800-21-04	6.0
22	53-800-22-04	6.0
23	53-800-23-04	6.0
24	53-800-24-04	6.0
25	53-800-25-04	6.0
26	53-800-26-04	6.0
27	53-800-27-04	6.0
28	53-800-28-04	6.0
29	53-800-29-04	6.0
30	53-800-30-04	6.0

HBS 2 Resorb Mg Ø 2.5 long thread

Length of thread, proximal
P = 3.75 mm



Total length (mm)	STERILE EO	length of thread, distal D (mm)
20	53-801-20-04	9.0
22	53-801-22-04	9.0
24	53-801-24-04	9.0
26	53-801-26-04	10.0
28	53-801-28-04	10.0
30	53-801-30-04	11.0
32	53-801-32-04	11.0
34	53-801-34-04	12.0
36	53-801-36-04	12.0
38	53-801-38-04	13.0
40	53-801-40-04	13.0



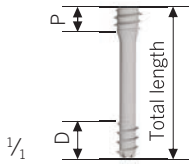
HBS 2 Resorb Mg Ø 3.0 mm

Explanation of icons

- Mg — Magnesium
- T-Drive, cannulated
- 1 unit(s) — Packaging unit
- STERILE EO — Sterile packaged implants

HBS 2 Resorb Mg Ø 3.0 short thread

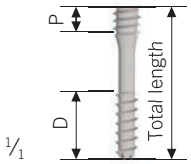
Length of thread, proximal
P = 3.5 mm



Total length (mm)	STERILE EO	length of thread, distal D (mm)
10	53-802-10-04	4.0
11	53-802-11-04	4.0
12	53-802-12-04	4.0
13	53-802-13-04	4.0
14	53-802-14-04	5.0
15	53-802-15-04	5.0
16	53-802-16-04	5.0
17	53-802-17-04	5.0
18	53-802-18-04	5.0
19	53-802-19-04	5.0
20	53-802-20-04	5.0
21	53-802-21-04	6.0
22	53-802-22-04	6.0
23	53-802-23-04	6.0
24	53-802-24-04	6.0
25	53-802-25-04	6.0
26	53-802-26-04	6.0
27	53-802-27-04	6.0
28	53-802-28-04	6.0
29	53-802-29-04	6.0
30	53-802-30-04	6.0

HBS 2 Resorb Mg Ø 3.0 long thread

Length of thread, proximal
P = 5.0 mm



Total length (mm)	STERILE EO	length of thread, distal D (mm)
20	53-803-20-04	9.0
22	53-803-22-04	9.0
24	53-803-24-04	9.0
26	53-803-26-04	10.0
28	53-803-28-04	10.0
30	53-803-30-04	11.0
32	53-803-32-04	11.0
34	53-803-34-04	12.0
36	53-803-36-04	12.0
38	53-803-38-04	13.0
40	53-803-40-04	13.0

Instruments **HBS** 2 Resorb Mg

HBS 2 Resorb Mg Ø 2.5
Standard instruments:

½

26-875-02-07

K-wire guide
15 cm/6“

St Sic 1 unit(s)

½

26-875-13-07

K-wire dispenser
15 cm/6“
Ø 0.9 mm

St 1 unit(s)

½

26-875-00-05

Guide wire
125 mm
Ø 0.9 mm

St 10 unit(s)

½

26-875-06-07

Gauge

St 1 unit(s)

½

26-875-17-07

Screwdriver T7,
cannulated

St Sic 1 unit(s)

½

26-875-03-07

Cleaning wire

St 1 unit(s)

½

53-876-00-09

Countersink
for HBS2 Mg
Ø 2.5/mini AO

St 1 unit(s)

Explanation of icons

- HBS 2 Resorb Mg Ø 2.5
- St — Steel
- Sic — Silicone
- T-Drive, cannulated
- 1 unit(s) — Packaging unit
- STERILE — Sterile packaged implants

Twist drill, cannulated, Ø 1.9 / 0.9 mm

St · 1 unit(s)

½

Connection	non-sterile	STERILE
AO		
with stop	26-875-19-09	
without stop	26-875-20-09	26-875-20-71
cylindrical		
with stop	26-875-09-09	
without stop	26-875-10-09	26-875-10-71

Step drill for DIP arthrodesis, cannulated, Ø 1.9 / 0.9 mm, AO connection

St · 1 unit(s)

½

Length	Screw	STERILE
26 mm	22 mm	26-875-29-71
28 mm	24 mm	26-875-30-71
30 mm	26 mm	26-875-31-71

Guide wire with double tip for DIP arthrodesis, Ø 0.9 mm

St · 10 unit(s)

½

Length	Art. No.
60 mm	22-636-09-05
120 mm	22-637-09-05
140 mm	22-638-09-05
160 mm	22-639-09-05

½

26-875-01-07

Tissue protection sleeve

St · Sic · 1 unit(s)

Instruments **HBS** 2 Resorb Mg

HBS 2 Resorb Mg Ø 3.0
Standard instruments:

½

26-850-02-07

K-wire guide
15 cm/6“

St Sic 1 unit(s)

½

26-850-13-07

K-wire dispenser
15 cm/6“
Ø 1.1 mm

St 1 unit(s)

½

26-850-00-05

Guide wire
125 mm
Ø 1.1 mm

St 10 unit(s)

½

26-850-06-07

Gauge

St 1 unit(s)

½

26-850-17-07

Screwdriver T8,
cannulated

St Sic 1 unit(s)

½

26-850-03-07

Cleaning wire

St 1 unit(s)

½

53-876-50-07

Countersink
for HBS2 Mg
Ø 3.0/midi AO

St 1 unit(s)

Explanation of icons

- HBS 2 Resorb Mg Ø 3.0
- St — Steel
- Sic — Silicone
- T-Drive, cannulated
- 1 unit(s) — Packaging unit
- STERILE — Sterile packaged implants

Twist drill, cannulated, Ø 2.3 / 1.1 mm

St · 1 unit(s)

½

Connection	non-sterile	STERILE
AO		
with stop	26-850-19-09	
without stop	26-850-20-09	26-850-20-71
cylindrical		
with stop	26-850-09-09	
without stop	26-850-10-09	26-850-10-71

½

26-850-01-07

Tissue protection sleeve

St · Sic · 1 unit(s)

Storage unit **HBS** 2

The HBS 2 storage unit consists of various modules.

All HBS 2 instruments which are necessary for a surgical procedure are stored individually in the instrument tray. In addition, there is a free storage space which can be used individually.

Storage system		
HBS 2 Resorb Mg Ø 2.5	**HBS** 2 Resorb Mg Ø 3.0	
55-910-59-04	55-910-59-04	Lid
55-910-58-04	55-910-58-04	Insert (without contents)
55-910-56-04	55-910-56-04	Storage cage (without contents)

Standard instruments		
HBS 2 Resorb Mg Ø 2.5	**HBS** 2 Resorb Mg Ø 3.0	
26-875-02-07	26-850-02-07	K-wire guide
26-875-13-07	26-850-13-07	K-wire dispenser
26-875-00-05	26-850-00-05	Guide wire
26-875-06-07	26-850-06-07	Gauge
26-875-01-07	26-850-01-07	Tissue protection sleeve
26-875-17-07	26-850-17-07	Screwdriver
26-875-03-07	26-850-03-07	Cleaning wire
26-875-19-09	26-850-19-09	Twist drill
53-876-00-07	53-876-50-07	Countersink

KLS Martin Group

KLS Martin Australia Pty Ltd.
Sydney · Australia
Tel. +61 2 9439 5316
australia@klsmartin.com

KLS Martin do Brasil Ltda.
São Paulo · Brazil
Tel. +55 11 3554 2299
brazil@klsmartin.com

KLS Martin Medical (Shanghai) International Trading Co., Ltd
Shanghai · China
Tel. +86 21 5820 6251
info@klsmartin.com

KLS Martin India Pvt Ltd.
Chennai · India
Tel. +91 44 66 442 300
india@klsmartin.com

KLS Martin Italia S.r.l.
Milan · Italy
Tel. +39 039 605 67 31
info@klsmartin.com

KLS Martin Japan K.K.
Tokyo · Japan
Tel. +81 3 3814 1431
info@klsmartin.com

KLS Martin SE Asia Sdn. Bhd.
Penang · Malaysia
Tel. +604 261 7060
malaysia@klsmartin.com

KLS Martin de México, S.A. de C.V.
Mexico City · Mexico
Tel. +52 55 7572 0944
mexico@klsmartin.com

KLS Martin Nederland B.V.
Huizen · Netherlands
Tel. +31 35 523 45 38
infonl@klsmartin.com

KLS Martin SE & Co. KG
Moscow · Russia
Tel. +7 499 792 76 19
russia@klsmartin.com

KLS Martin Taiwan Ltd.
Taipei · Taiwan
Tel. +886 2 2325 3169
taiwan@klsmartin.com

KLS Martin SE & Co. KG
Dubai · United Arab Emirates
Tel. +971 4 454 16 55
middleeast@klsmartin.com

KLS Martin UK Ltd.
Reading · United Kingdom
Tel. +44 118 467 1500
info.uk@klsmartin.com

KLS Martin LP
Jacksonville · Florida, USA
Tel. +1 904 641 77 46
usa@klsmartin.com

KLS Martin SE Asia Sdn. Bhd.
Hanoi · Vietnam
Tel. +49 7461 706-0
info@klsmartin.com

KLS Martin SE & Co. KG
A company of the KLS Martin Group
KLS Martin Platz 1 · 78532 Tuttlingen · Germany
PO Box 60 · 78501 Tuttlingen · Germany
Tel. +49 7461 706-0 · Fax +49 7461 706-193
info@klsmartin.com · www.klsmartin.com

Medical Magnesium GmbH
Philipsstraße 8, 52068 Aachen, Germany
Tel. +49 241 927845023
info@medical-magnesium.com
www.medical-magnesium.com