HPS – HIP PORTAL SYSTEM
Prof. Dr. med. Michael Dienst, Munich, Germany

Introduction

The interest of orthopaedic and traumatic surgeons in hip arthroscopy has increased over the last few years. Until recently, arthroscopic surgery of the hip joint was limited to diagnostic procedures and resection of loose debris, labrum and cartilage smoothing, and synovectomy. Today, new techniques for reconstructive cartilage repair, such as microfracturing and abrasion arthroplasty, for refixation of the acetabular labrum and for recontouring the femoral head-and-neck junction are performed arthroscopically.

The anatomical characteristics of the hip joint make portal placement relatively difficult. Furthermore, flexibility of the arthroscope and surgical instruments required is limited. To optimize and simplify hip arthroscopy, KARL STORZ collaborated closely with Prof. Dr. med. Michael Dienst, supported by Prof. Dr. med. Andreas Weiler, to develop a special system for performing arthroscopic procedures involving the hip joint.

The KARL STORZ system is the ideal synthesis of a cannulated system and special hand instruments. It provides a complete solution to enable surgeons to perform the most common hip arthroscopies.

Advantages

- Precise portal placement using a cannulated system and aiming device
- Versatile solutions for portal management, such as:
  a. Stable portals and secure fluid management
  b. HALF PIPE® provides better flexibility and allows rapid instrument exchanges
  c. Portal-free instrument use for maximum instrument mobility
- Increased working length of arthroscope sheaths and instruments
- Simplified instrument changes
**Special features**

- Special sheaths for hip arthroscopy, with a diameter of 5.5 and 6.0 mm, and 13.5 cm working length
- A fast, stable and reliable arthroscope and sheath connection
- Fully cannulated system
- HALF PIPE®s designed for hip arthroscopy that enable faster instrument changes and provide more flexibility for operating instruments
- Cannulated and extra-long shaver blades
- Burr adapted for axial applications

The complete system features the customary KARL STORZ quality and thus meets the highest demands.
Key Instruments and their Features

1. Arthroscope sheath with quick snap-in coupling mechanism
   • The working length of the sheath was increased by locating the rotatable stopcocks further back on the shaft. This helps to increase the working length for hip arthroscopy.
   • To simplify changes between arthroscope and instrument access, switching between the scope and sheath is performed using one quick snap-in coupling mechanism. Fast and easy handling of the coupling mechanism and its usability with a standard scope provide key benefits.
   • The modified design of the distal end allows optimal guidance of the arthroscope.
   • A new gasket adaptor ensures rapid closure of the sheath and modifies it to function as a working channel for inserting instruments.

2. Fully cannulated system
   The number of portals required for hip arthroscopy can require more frequent changes.
   The KARL STORZ cannulated system enables surgeons to perform quick instrument and access changes using a guidewire or switching stick.
   The system includes the following instruments:
   • Positioning needle and guidewire
   • Cannulated switching stick
   • Cannulated, reusable obturators with ergonomic handles
   • Transparent portal sleeves with screw thread provide a secure hold while the unthreaded distal end conserves the articular cartilage and labrum
   • Cannulated, extra-long and curved shaver blades

3. Aiming device
   Exact positioning of portals in relation to the hip joint is necessary for a complication-free surgery and determines the visibility and accessibility of intra-articular structures.
   To facilitate placement of portals, KARL STORZ worked in cooperation with Prof. Dr. med. Michael Dienst to develop an aiming device for hip arthroscopy.
   For surgeons, the aiming device facilitates triangulation within the joint and enables quicker identification of the correct position of the second and third portal.
   The new aiming device is assembled directly on the arthroscope sheath. Feed, rotation and angle are adjustable in order to find the correct entry sites and needle directions for secondary portals. The new aimer offers horizontal triangulation. In addition to standard vertical triangulation, this allows faster and more precise portal placement.
4. HALF PIPE® Hip
With the HALF PIPE®, KARL STORZ presents an insertion aid to make instrument manipulation faster, safer and more tissue sparing. The half-open design simplifies insertion of instruments into the joint with less risk of labrum or cartilage damage, extends the radius of action and optimizes visual monitoring.

The HALF PIPE® Hip is available in two versions, and is both reusable and autoclavable.

5. Shaver Blades
Motor-driven hand instruments are essential to performing operative hip arthroscopy. Because of the anatomical characteristics of the hip joint, extra-long cutting and burring shaver blades have been developed. These devices enable surgeons to work simply and efficiently in the hip joint.

The main feature of the cutting, straight and curved blades is a cannulated design that allows fast and atraumatic insertion, as well as blade changes using a guidewire.

All blades can be non-destructively disassembled into outer and inner blades for cleaning and removal of loose debris or soft tissue.

The sheath of the burr can be inserted over a cannulated switching stick. Because the position of the outer blade has been moved further back, axial burring is possible.

6. Hand Instruments
The comprehensive hip set includes extra-long and curved hooks, knives, punches, microfracture chisels, curettes, suture graspers, extra long foreign body graspers and suture forceps.
Recommended Literature:

1. **BYRD J. W. T.**:  
   Hip Arthroscopy.  

2. **DIENST M.**:  
   Hip Arthroscopy: Technique and Anatomy  
   Operative Techniques in Sports Medicine  
   2005; 13: 13

3. **KHANDUJA V; VILLAR RN**:  
   Arthroscopic Surgery of the Hip - Current Concepts and Recent Advances  
### HPS – HIP PORTAL SYSTEM

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28731 BWA</td>
<td>HOPKINS® Wide Angle Forward-Oblique Telescope 30°, enlarged view</td>
</tr>
<tr>
<td>28731 CWA</td>
<td>HOPKINS® Wide Angle Lateral Telescope 70°, enlarged view</td>
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<tr>
<td>28731 AE</td>
<td>ENDOCAMELEON® ARTHRO HOPKINS® Telescope, diameter 4 mm</td>
</tr>
<tr>
<td>28136 EC</td>
<td>Arthroscope Sheath ENDOCAMELEON®</td>
</tr>
<tr>
<td>28126 BT</td>
<td>Obturator, semisharp</td>
</tr>
<tr>
<td>28140 EWK</td>
<td>Changing Rod ENDOCAMELEON®</td>
</tr>
<tr>
<td>28140 GW</td>
<td>Nitinol Guide Wire, diameter 1.5 mm, length 40 cm</td>
</tr>
<tr>
<td>28140 DB</td>
<td>Puncture Needle, outer diameter 2.1 mm, working length 21.3 cm</td>
</tr>
<tr>
<td>28140 DO</td>
<td>Obturator, for use with Puncture Needle 28140 DB</td>
</tr>
<tr>
<td>28140 W</td>
<td>Changing Rod, length 31 cm</td>
</tr>
<tr>
<td>28140 WK</td>
<td>Changing Rod, cannulated, length 31 cm</td>
</tr>
<tr>
<td>28130 R</td>
<td>High-Flow Arthroscope Sheath</td>
</tr>
<tr>
<td>28131 CR</td>
<td>High-Flow Arthroscope Sheath</td>
</tr>
<tr>
<td>28131 R</td>
<td>High-Flow Arthroscope Sheath, one stopcock</td>
</tr>
<tr>
<td>28130 BC</td>
<td>Obturator, blunt</td>
</tr>
<tr>
<td>28140 D</td>
<td>Gasket Attachment</td>
</tr>
<tr>
<td>28140 GU</td>
<td>Gasket</td>
</tr>
<tr>
<td>28136 DS</td>
<td>High-Flow Arthroscope Sheath</td>
</tr>
<tr>
<td>28136 S</td>
<td>Same, one stopcock</td>
</tr>
<tr>
<td>28135 CR</td>
<td>High-Flow Arthroscope Sheath</td>
</tr>
<tr>
<td>28136 BC</td>
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<td>Obturator</td>
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<tr>
<td>28126 BT</td>
<td>Obturator</td>
</tr>
<tr>
<td>28134 O</td>
<td>Obturator, cannulated, with handle, diameter 4.1 mm</td>
</tr>
<tr>
<td>28140 O</td>
<td>Obturator</td>
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<tr>
<td>28140 ZAA</td>
<td>Aimer</td>
</tr>
<tr>
<td>28140 ZBA</td>
<td>Guide Sleeve, short, working length 10.5 cm</td>
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<tr>
<td>28140 ZCA</td>
<td>Guide Sleeve, long, working length 14.5 cm</td>
</tr>
<tr>
<td>28140 ZDA</td>
<td>Aimer Attachment, for horizontal triangulation</td>
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<tr>
<td>28146 E</td>
<td>Knife, pointed, straight, working length 11.5 cm</td>
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<tr>
<td>28140 LM</td>
<td>Knife, round, straight, working length 11.5 cm</td>
</tr>
<tr>
<td>28140 BM</td>
<td>Knife, round, angled 20°, working length 11.5 cm</td>
</tr>
<tr>
<td>28140 HD</td>
<td>HALF PIPE®</td>
</tr>
<tr>
<td>28140 HC</td>
<td>HALF PIPE®</td>
</tr>
<tr>
<td>28140 T</td>
<td>Probe, working length 18 cm</td>
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<tr>
<td>28140 TL</td>
<td>Probe, working length 21.5 cm</td>
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<tr>
<td>28140 TA</td>
<td>Probe, angled downwards 10°</td>
</tr>
<tr>
<td>28140 TB</td>
<td>Probe, angled downwards 20°</td>
</tr>
<tr>
<td>28728 KB</td>
<td>Curette</td>
</tr>
<tr>
<td>28573 FD</td>
<td>SILGRASP® Foreign Body Grasper, aggressive</td>
</tr>
<tr>
<td>28171 SGD</td>
<td>SILGRASP® Suture Grasper</td>
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</table>
Instruments for Hip Arthroscopy

28731 BWA  
**HOPKINS**® *Wide Angle Forward-Oblique Telescope* 30°, enlarged view, diameter 4 mm, length 18 cm, *autoclavable*, fiber optic light transmission incorporated, color code: red

28731 CWA  
**HOPKINS**® *Wide Angle Lateral Telescope* 70°, enlarged view, diameter 4 mm, length 18 cm, *autoclavable*, fiber optic light transmission incorporated, color code: yellow

28731 AE  
**ENDOCAMELEON**® *ARTHRO HOPKINS*® Telescope, diameter 4 mm, length 18 cm, *autoclavable*, variable direction of view from 15° – 90°, adjustment knob for selecting the desired direction of view, fiber optic light transmission incorporated, color code: gold

28140 GW  
**Nitinol Guide Wire**, diameter 1.5 mm, length 40 cm, for single use

28140 DB  
**Puncture Needle**, outer diameter 2.1 mm, inner diameter 1.6 mm, working length 21.3 cm, for single use, for use with Nitinol Guide Wire 28140 GW and Obturator 28140 DO

28140 DO  
**Obturator**, for use with Puncture Needle 28140 DB
28140 W

**Changing Rod**, diameter 4.8 mm, length 31 cm, for use with Arthroscope Sheaths 28130 CR/R and 28131 CR/R

28140 WK

**Changing Rod**, cannulated, diameter 4.8 mm, length 31 cm, for use with Arthroscope Sheaths 28130 CR/R and 28131 CR/R as well as Nitinol Guide Wire 28140 GW

28140 EWK

**Changing Rod ENDOCAMELEON®**, cannulated, diameter 3.8 mm, length 31 cm, for use with Arthroscope Sheath ENDOCAMELEON® 28136 EC and Nitinol Guide Wire 28140 GW

28130 CR

**High-Flow Arthroscope Sheath**, with snap-in coupling mechanism, diameter 6 mm, working length 13.5 cm, two stopcocks, rotatable, for use with HOPKINS® telescopes 0°, 30°, 70° and Obturators 28130 BC/BT, 28140 O, color code: red

28130 R

**Same**, one stopcock

28131 CR

**High-Flow Arthroscope Sheath**, with snap-in coupling mechanism, diameter 5.5 mm, working length 13.5 cm, two stopcocks, rotatable, for use with HOPKINS® telescopes 0°, 30°, 70° and Obturators 28130 BC/BT, 28140 O, color code: blue

28131 R

**Same**, one stopcock
28136 EC  **Arthroscope Sheath ENDOcameleon®,** with snap-in coupling mechanism, diameter 6 mm, working length 13.5 cm, distal tapered, with irrigation holes, two stopcocks, rotatable, for use with ENDOcameleon® ARTHRO HOPKINS® Telescope 28731 AE and Obturator 28134 O with cannulated handle or Obturators 28126 BC/BT

28130 BC

28130 BC  **Obturator,** blunt, for use with Arthroscope Sheaths 28131 CR/R, 28130 CR/R, color code: green-red-yellow

28130 BT  **Obturator,** semisharp, for use with Arthroscope Sheaths 28131 CR/R, 28130 CR/R, color code: green-red-yellow

28140 O  **Obturator,** cannulated, with handle, diameter 4.8 mm, for use with Arthroscope Sheaths 28130 CR/R and 28131 CR/R as well as Nitinol Guide Wire 28140 GW
28136 DS  **High-Flow Arthroscope Sheath**, with snap-in coupling mechanism, diameter 6 mm, working length 13.5 cm, distal tapered, with irrigation holes, two stopcocks, rotatable, for use with HOPKINS® Telescopes 0°, 30°, 70° and Obturators 28126 BC/BT/BS, 28134 O, color code: red

28136 S  *Same*, one stopcock

28136 CR  **High-Flow Arthroscope Sheath**, with snap-in coupling mechanism, diameter 6 mm, working length 13.5 cm, two stopcocks, rotatable, for use with HOPKINS® Telescopes 30°, 70° and Obturators 28126 BC/BT/BS, 28134 O, color code: red

28135 CR  **High-Flow Arthroscope Sheath**, with snap-in coupling mechanism, diameter 5.5 mm, working length 13.5 cm, two stopcocks, rotatable, for use with HOPKINS® Telescopes 0°, 30°, 70° and Obturators 28126 BC/BT/BS, 28134 O, color code: blue
28136 BC  **Obturator**, blunt, for use with Arthroscope Sheaths 28136 DS/S, color code: green-red-yellow

28136 BT  **Same**, semisharp

28126 BC  **Obturator**, blunt, for use with Arthroscope Sheaths 28229 DR, 28129 CR, 28126 CR/R/B, 28136 CR, 28135 CR and 28136 EC, color code: green-red-yellow

28126 BS  **Same**, sharp

28134 O  **Obturator**, cannulated, with handle, diameter 4.1 mm, for use with Arthroscope Sheaths 28126 B/CR/R, 28129 CR, 28135 CR, 28136 CR, 28136 EC, 28229 DR and Nitinol Guide Wire 28140 GW

28140 D  **Gasket Attachment**, with cone, including Gasket 28140 GU, for use with all Arthroscope Sheaths

28140 GU  **Gasket**, unsterile, for single use, package of 10, single-packaged, for use with Gasket Attachment 28140 D
28140 ZAA  Aimer
28140 ZBA  Guide Sleeve, short, working length 10.5 cm
28140 ZCA  Guide Sleeve, long, working length 14.5 cm
28140 ZDA  Aimer Attachment, for horizontal triangulation

28146 E  Knife, pointed, straight, working length 11.5 cm

28728 KB  Curette, oval, large, curved, 30° upwards, working length 13 cm
28140 HD  **HALF PIPE®,** for use in hip arthroscopy, handle rotated 90°, handle axis 120°, working length 95 mm

28140 HC  **HALF PIPE®,** for use in hip arthroscopy, handle rotated 90°, handle axis 120°, distal end flat, atraumatic tip, working length 120 mm

28140 T  **Probe,** graduated, length of hook 3 mm, diameter 1.5 mm, working length 18 cm

28140 TL  **Same,** working length 21.5 cm

28140 TA  **Probe,** graduated, length of hook 3 mm, angled downwards 10°, diameter 1.5 mm, working length 20 cm

28140 TB  **Same,** angled downwards 20°
28140 S  **Evacuation Cannula**, with Luer-Lock and one stopcock, working length 18 cm, for use with Arthroscope Sheaths 28130 CR/R and 28131 CR/R

28140 EC  **Dilator**, with integrated handle, long, diameter 6 mm, for use with Threaded Cannula 28140 SB and Obturator 28140 EP, color code: light blue

28140 EP  **Obturator**, cannulated, inner diameter 1.6 mm, for use with Nitinol Guide Wire 28140 GW, color code: light blue

28140 EB  **Dilator**, with integrated handle, short, diameter 6 mm, for use with Threaded Cannula 28140 SA and Obturator 28140 EO, color code: dark blue

28140 EO  **Obturator**, cannulated, inner diameter 1.6 mm, for use with Nitinol Guide Wire 28140 GW, color code: dark blue

28140 FC  **Dilator**, with integrated handle, long, diameter 8.1 mm, for use with Threaded Cannula 28140 SD and Obturator 28140 FP, color code: bright red

28140 FP  **Obturator**, cannulated, inner diameter 1.6 mm, for use with Nitinol Guide Wire 28140 GW, color code: bright red

28140 FB  **Dilator**, with integrated handle, short, diameter 8.1 mm, for use with Threaded Cannula 28140 SC and Obturator 28140 FO, color code: dark red

28140 FO  **Obturator**, cannulated, inner diameter 1.6 mm, for use with Nitinol Guide Wire 28140 GW, color code: dark red
28140 SA-6  **Cannula**, with thread, transparent, unsterile, for single use, package of 6, inner diameter 6.1 mm, working length 9 cm, for use with Dilator 28140 EB

28140 SB-6  **Same**, working length 12 cm, for use with Dilator 28140 EC

28140 SC-6  **Cannula**, with thread, transparent, unsterile, for single use, package of 6, inner diameter 8.25 mm, working length 9 cm, for use with Dilator 28140 FB

28140 SD-6  **Same**, working length 12 cm, for use with Dilator 28140 FC

28179 DG  **Valve Housing**, with Luer-Lock, for use with Cannulas and Set of Gaskets 28179 GS

28179 OG  **Valve Housing**, without Luer-Lock, for use with Cannulas and Set of Gaskets 28179 GS

28179 GS  **Seal Set**, sterile, for single use, package of 10, for use with Valve Housing 28179 DG/OG
28171 KPN  **SILCUT® Punch**, through-cutting, cross-toothed, cutting width 3.4 mm, jaws curved, 15° upwards, sheath diameter 3 mm, straight, handle with cleaning connector, working length 19 cm

28171 KUN  **SILCUT® Punch**, through-cutting, cross-toothed, cutting width 3.4 mm, straight jaws, sheath diameter 3 mm, 15° curved upwards, handle with cleaning connector, working length 19 cm

28573 BA  **SILCUT® PRO Wide Upbiter**, through-cutting, cross-toothed, cutting width 4.5 mm, jaws curved, 15° upwards, sheath diameter 3.5 mm, 15° curved upwards, handle with cleaning connector, working length 19 cm

28171 KGN  **SILGRASP® Foreign Body Grasper**, aggressive, straight jaws, sheath diameter 3.5 mm, straight, handle with cleaning connector, working length 19 cm

28171 KGSN  **SILGRASP® Foreign Body Grasper**, aggressive, straight jaws, sheath diameter 3.5 mm, straight, handle with cleaning connector and ratchet, working length 19 cm

28140 GA  **Suture Forceps**, for punching soft tissue and suture management in hip arthroscopy, curved upwards, working length 19 cm

28573 FD  **SILGRASP® Foreign Body Grasper**, aggressive, sheath diameter 4 mm, straight, handle with cleaning connector and ratchet, working length 22 cm

28171 SGD  **SILGRASP® Suture Grasper**, sheath diameter 3.5 mm, straight, handle with cleaning connector, working length 19 cm
28140 CD  Microfracture Chisel, curved 30°, working length 18 cm

28140 CE  Microfracture Chisel, curved 70°, working length 18 cm

28140 CF  Microfracture Chisel, curved 90°, working length 16 cm

533 TVA  Adaptor, autoclavable, permits telescope changing under sterile conditions

28140 MG  Knife, pointed, curved, double-edged, working length 18 cm

28140 BM  Knife, round, angled 20°, working length 11.5 cm

28140 LM  Knife, round, straight, working length 11.5 cm
Accessories

28723001-1  **UNIDRIVE® S III ARTHRO SCB**, with color display, touch screen operation, two motor outputs, with integrated SCB module, power supply 100-120/230-40 VAC, 50/60 Hz including:
- **SCB Connecting Cable**, length 100 cm
- **Mains Cord**
- **Instruction Manual**

**System requirements:**
SCB control NEO System with installed SCB control NEO Software Release 20090001-44 or higher

28200 DX  **DRILLCUT-X® ARTHRO Shaver Handpiece**, up to 8000 rpm, for use with UNIDRIVE® S III ARTHRO SCB

The shaver handpieces should NOT be treated with universal spray!
Accessories

200168 31 Two-Pedal Footswitch

28205 SAA Irrigation Adaptor, for validated cleaning of outer blades

28205 SAI Irrigation Adaptor, for validated cleaning of inner blades

Additional References:

• ENDOWORLD®:
  – KARL STORZ UNIDRIVE® S III ARTHRO SCB (ART 46)
  – ARTHROPUMP® Power – The clever system for arthroscopic fluid management (ART 42)
Shaver Blades

Working length 180 mm

28208 BKS  Aggressive Cutter, sterile, for single use, diameter 4.5 mm, working length 180 mm, package of 6, for use with POWERSHAVER SL SCB and UNIDRIVE® S III ARTHRO, color code: green

28208 DCS  Aggressive Full Radius Resector, sterile, for single use, diameter 4.5 mm, working length 180 mm, package of 6, for use with POWERSHAVER SL SCB and UNIDRIVE® S III ARTHRO, color code: blue

28208 EHS  Curved Aggressive Full Radius Resector, sterile, for single use, diameter 4.5 mm, working length 180 mm, package of 6, for use with UNIDRIVE® S III ARTHRO SCB, color code: light green

28208 IDS  Semi Hooded Barrel Burr, sterile, for single use, diameter 5.5 mm, working length 180 mm, package of 6, for use with UNIDRIVE® S III ARTHRO SCB, color code: pink

It is recommended to check the suitability of the product for the intended procedure prior to use.