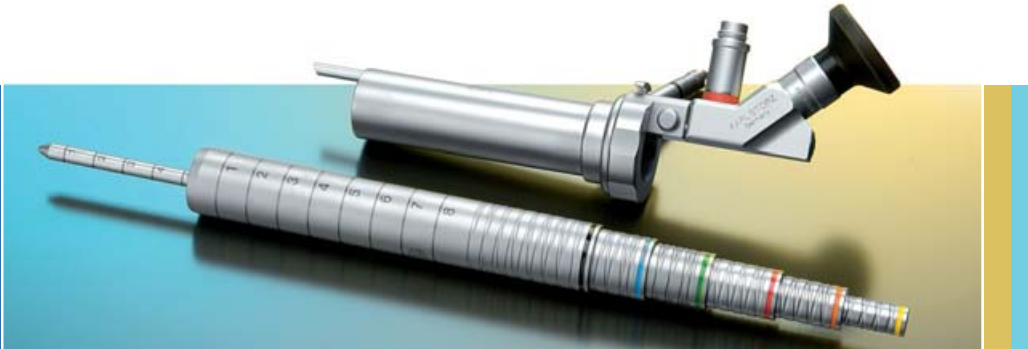


Endoscopic Spinal Surgery with the EasyGO! System



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Endoscopic spinal surgery – A new endoscopic spine system: EasyGO!

Introduction

Dear colleagues,

Thank you for your interest in our new EasyGO! spine system. Resection of herniated discs, microsurgical decompression and, where indicated, stabilization have all been gold standards for the surgical treatment of degenerative spine diseases since the 1970s. Since then, all three procedures have been performed microsurgically by neurosurgeons.

Despite a high success rate (85-90%), there is an increasing demand for minimally invasive, less traumatic techniques. Endoscopic techniques permit smaller incisions, less muscle damage and less irritation to the nerve root. The resulting loss in muscle strength is also considerably less with endoscopic techniques. This is an important factor as the strength of the extending lumbar and cervical muscles is the main contributor to a natural stabilization in the patient and thus crucial to the prevention of future degeneration. When compared with microsurgery, the main disadvantages of conventional endoscopic techniques are the intensity of the corresponding learning curves, which is such that the techniques can only be applied in selected cases, and that significantly longer surgical times are required.



Fig. 1: Endoscopic operation with the smallest EasyGO! trocar (color code orange, O.D. 15 mm)

As a solution to this conflict, we have developed a new universal system for minimally invasive lumbar and dorsal cervical disc and spinal surgery. The EasyGO! system aims to combine the microsurgery with the advantages of spinal endoscopy. With the EasyGO!, microsurgical skills can be applied and enhanced under endoscopic guidance. Since microsurgical techniques are already well established in neurosurgical spinal surgery, most neurosurgical spinal surgeons require only brief training to be able to perform endoscopic lumbar disc surgery with EasyGO! The use of a dilator system in conjunction with a selected range of working tubes (15 mm, 19 mm, 23 mm) affords the main advantages of minimal incision lengths and will reduce muscle trauma. Lumbar disc procedures with EasyGO! can be performed with a skin incision of 1.0 cm using small tubes. When larger tubes are employed, all decompression techniques can be applied – even drill procedures can be performed with only minor trauma to the dorsal structures. The 30° large field **HOPKINSIII**® telescope with adjustable depth and viewing angle (360°) provides excellent optical quality and maneuverability, which allows inspection and manipulation even far lateral and to the opposite side of the spine, e.g., for resection of the lateral recess, in the foramina along the nerve roots, and a bilateral bony decompression of the spinal canal via a unilateral approach. The application of pedicle screws is also possible.

We hope that you will find the EasyGO! system helpful in creating minimally invasive but adequate and effective approaches to the lumbar and dorsal cervical spine.

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Indications

- All types of lumbar disc herniations from medial to far lateral
- Spinal and foraminal stenosis – the EasyGO! allows a bilateral decompression using a unilateral approach. Also multilevel decompression is possible
- Cervical disc herniations and stenosis

The operation under endoscopic view with the EasyGO!

Step 1: Skin incision



Fig. 2: Skin incision – between 0.8 cm and 1.5 cm, depending on the size of the trocar

Step 2: Minimally invasive approach through progressive dilation

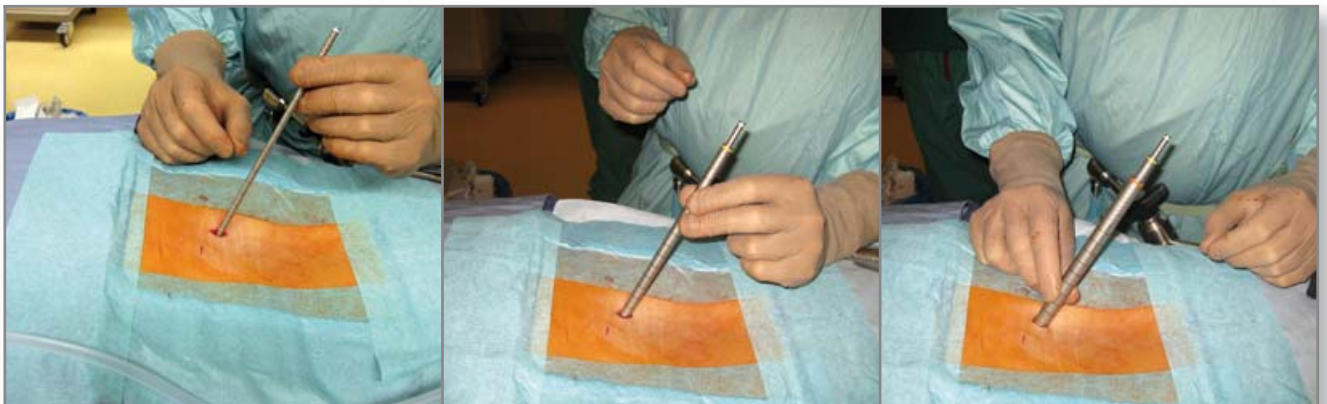


Fig. 3: Sequential dilation of soft tissue. In this case, dilation is used to prepare for the "orange" trocar which is the smallest in the range with an outer diameter of 15 mm. Additional dilation for the bigger trocars (19 mm or 23 mm) is possible at any time.

The approach with the dilation system and the introduction of the (initial) working tube before optical visualization of the structures must be controlled by fluoroscopy, especially in the lateral view (neuronavigation might also be considered, but must be precise – its disadvantage is the dependence on proper system referencing). Please note that the dilation system, if not properly and cautiously inserted, might perforate the intervertebral space through the ligamentum flavum and possibly through to the dura, especially in the case of a lumbar spine where bony stenosis is not present or in large intervertebral spaces/lig. flava. If the dilation system is not properly inserted and this is not immediately recognized, the ligamentum flavum or a perforated dura might be dilated by dilation tubes, with the subsequent risk of damage to the intradural structures (nerve roots, cauda). Therefore, the initial puncture with the puncture needle must only penetrate to the surface of the upper vertebral arch (above the intervertebral space, not below the lower end of the limiting bony rim of the arch). Instead of using the puncture needle initially, surgery may also be initiated with the smallest dilation tube (outer diameter 5.2 mm, white label, no. 28163 CNS). Likewise, the initial puncture must strictly go to the surface of the upper arch (lower end – be cautious not to slip below).

If too much exertion is applied with the small-white label first dilator, it could also perforate the ligamentum flavum. The hard bony surface of the upper arch must also be felt with each subsequent dilation tube. The lower end of all tubes must be visible with fluoroscopy above the spinal canal approx. 1/3 of the diameter securely positioned over the upper arch. Standard practice normally involves an initial, definite, visual identification with the endoscope of the lower margin of the upper arch and parts of the joint surface following insertion of the working tube. From this point on, surgery is guided by continuous endoscopic vision, as with microsurgery, using identical techniques and similar instruments, which, however, have been adapted to the 'tube-guided' approach. Then under visual control, the direction of the working tube might be varied according to the approach required for dissection. In case of orientation problems, the tube position should be rechecked using fluoroscopy.

The operation under endoscopic control with the EasyGO!

Step 3: Introduction of the trocar



Fig. 4: Final dilation with 'orange' dilator and insertion of final 'orange' working tube. The orange trocar is the smallest tube with an outer diameter of 15 mm, allowing a 'single-stitch' approach



Fig. 5: Axial T1 weighted MRI showing a large left mediolateral sequestered disc prolaps at the level of L5/S1

Step 4: Attachment of the holding arm and insertion of the scope

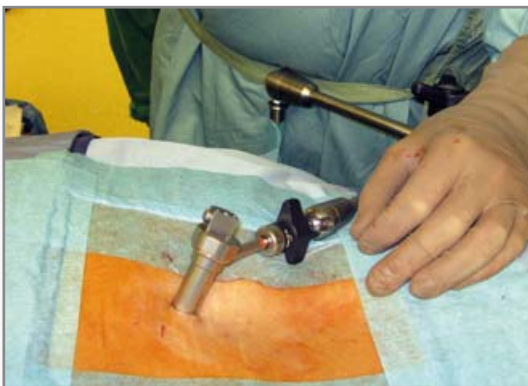


Fig. 6a: Inserted working tube connected to the holder



Fig. 6b: Then the working insert is attached and the endoscope inserted into the trocar

Step 5: Connection of the camera head and the light cable



Fig. 7: The endoscope is then connected to the camera head and to the light source via the light cable

Step 6: Endoscopic operation



Fig. 8: Fully installed system in working environment

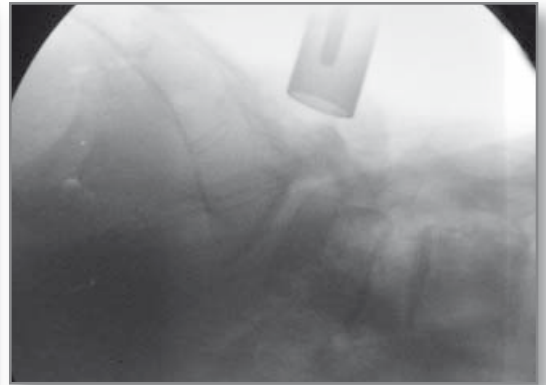


Fig. 9: Lateral fluoroscopy to check for the appropriate approach parallel to the disc space. Note the position above the spinal canal, about 1/3 (upper end of tube) over the upper arch!

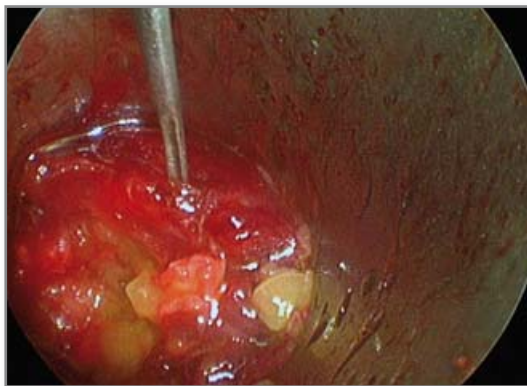


Fig. 10: After insertion of the endoscope, bony resistance of the lamina is felt

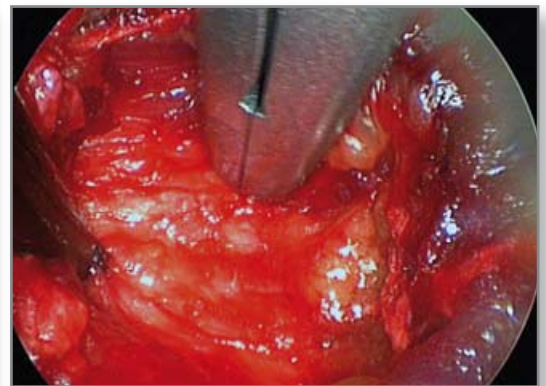


Fig. 11: Remnant muscle tissue is removed with forceps ...



Fig. 12: ... and punches



Fig. 13: The ligamentum flavum is exposed

The operation under endoscopic control with the EasyGO!

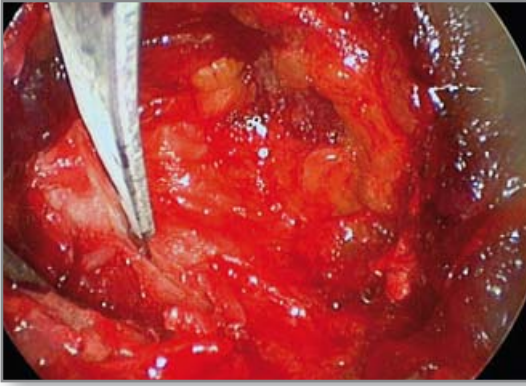


Fig. 14: The ligament is incised with a scalpel

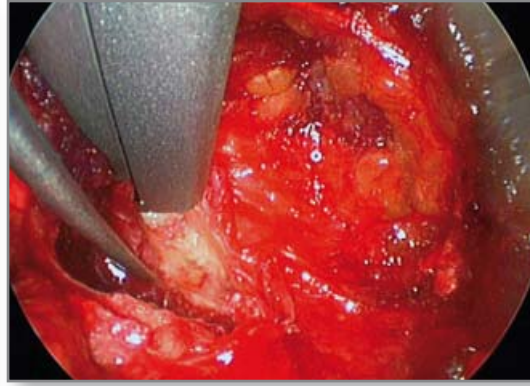


Fig. 15: After incision, the ligament is partially removed with a punch

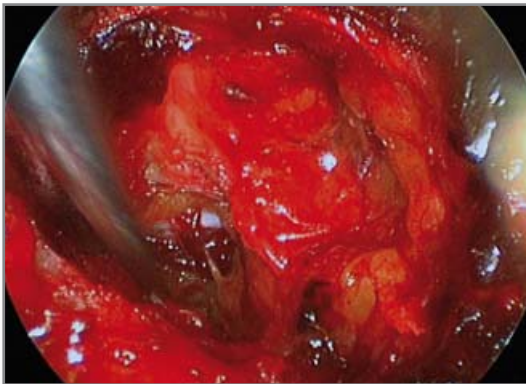


Fig. 16: The dura is visible

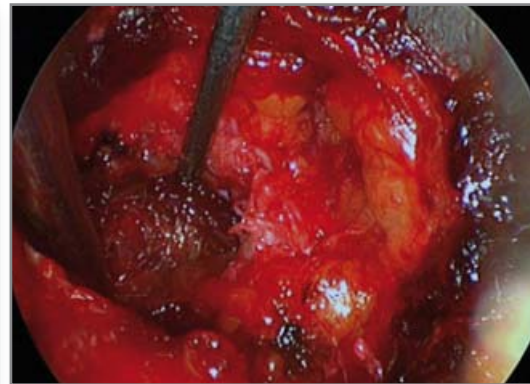


Fig. 17: The prolapse is localized using a dissector

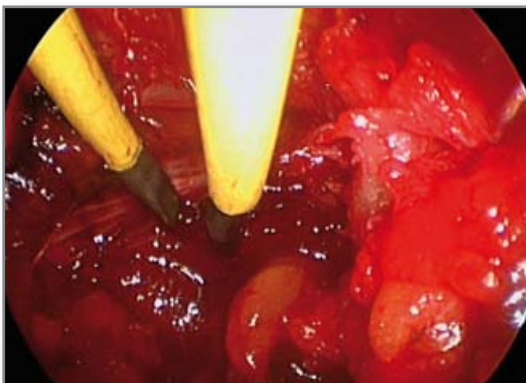


Fig. 18: Epidural vessels are coagulated

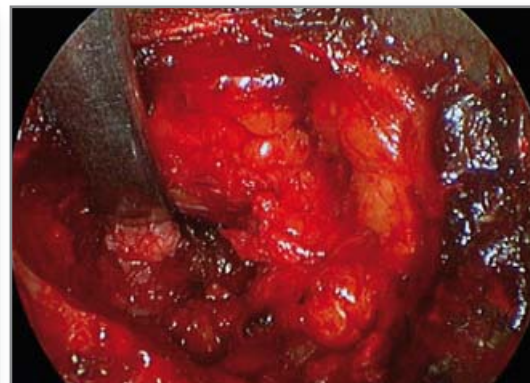


Fig. 19: A nerve retractor is inserted and the prolapse is exposed

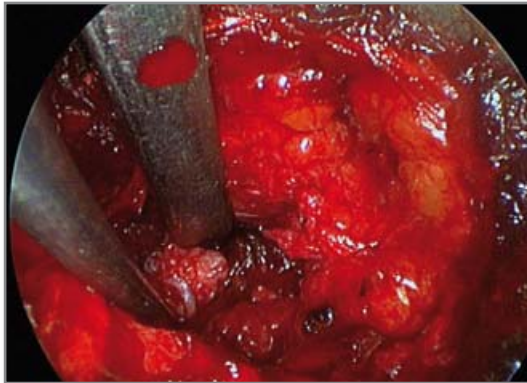


Fig. 20: The prolapse is mobilized with a hook ...

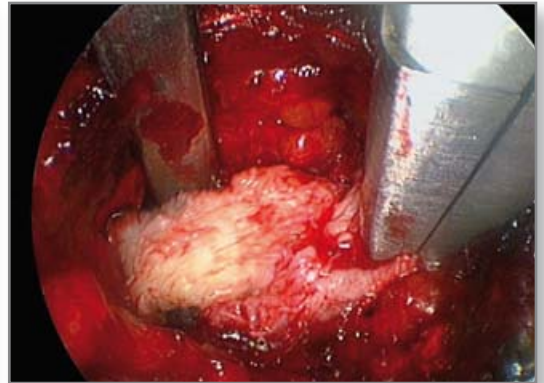


Fig. 21: ... and subsequently removed with grasping forceps



Fig. 22: Removing the prolapse

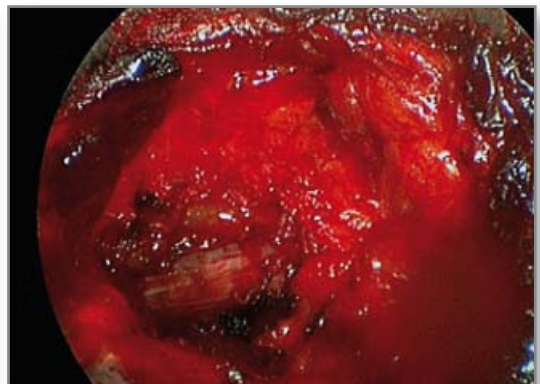


Fig. 23: At the end of the procedure, the decompressed dural sac and nerve root are visible



Fig. 24: Disc sequesters as large as almost 4 cm can be removed with this technique

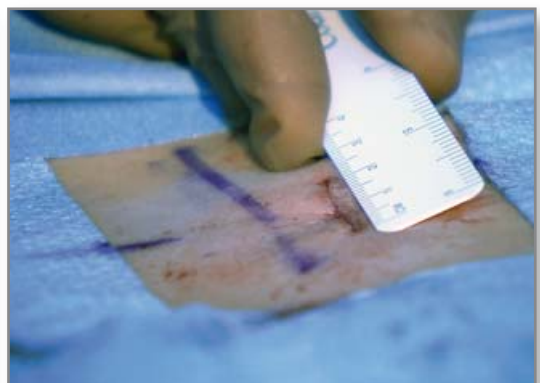


Fig. 25: The skin incision is about 1.8 cm – the skin incision obviously depends on the size of the trocar used.

Advantages of the EasyGO!

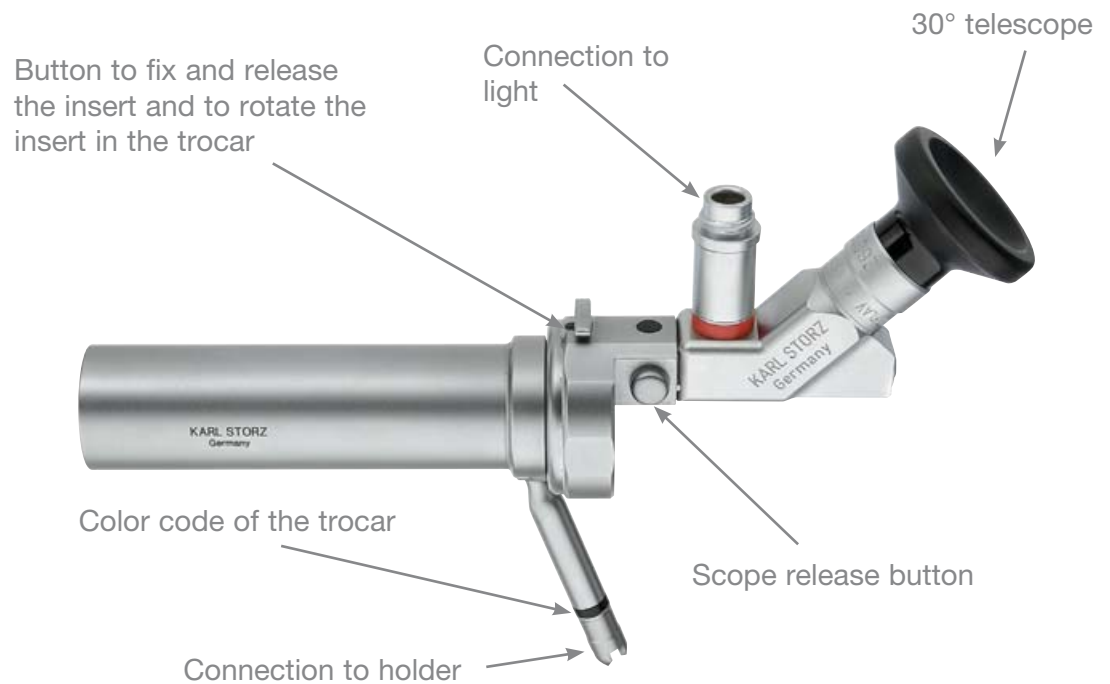
For surgeons

- Easy and safe procedure with a standard bimanual microsurgical technique
- Short learning curve as operating technique is very similar to microsurgery
- Improved visualization thanks to **HOPKINS**[®] telescopes, especially in combination with HD video technology
- Improved differentiation of anatomic structures resulting in a gentler manipulation of the neural structures
- EasyGO! is basically applicable for any degenerative lumbar and cervical spine indication. The size of the trocar can be chosen depending on the indication:
 - orange trocar with OD 15 mm = single stitch technique
 - green trocar with OD 19 mm
 - black trocar with OD 23 mm
- Use of a high-speed drill possible
- Dilation system reduces muscle trauma
- Decompression at two levels with one approach possible
- Bilateral decompression via unilateral approach
- Low complication rate if properly done (approach primarily directed to the upper bony vertebral arch, not into the intervertebral space; then 'only dissect what you can see' / anatomically defined!)

For patients

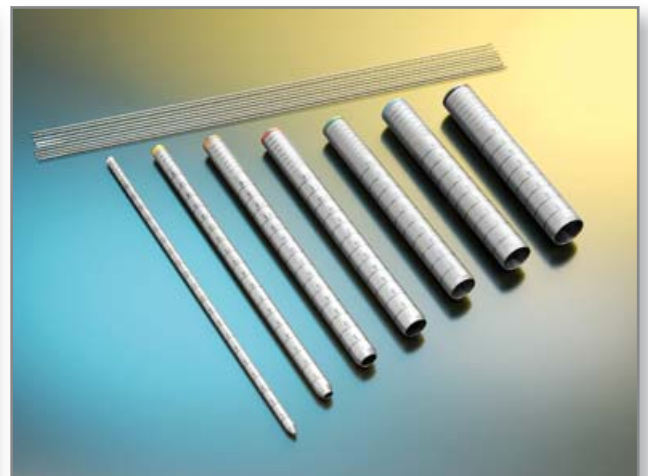
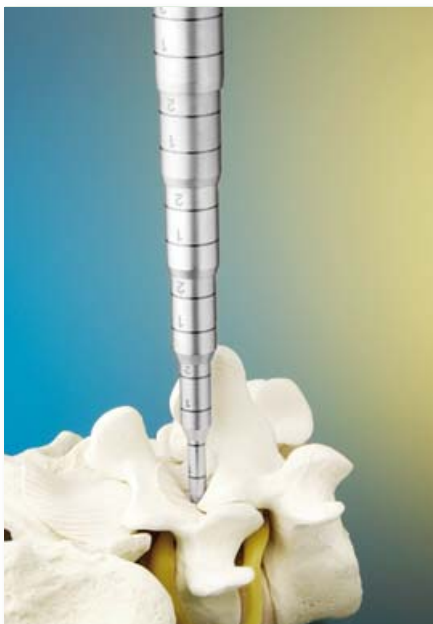
- Less invasive
- Good postoperative results as with microsurgery
- Smaller incisions and less tissue trauma, especially when using the small orange trocar (OD 15 mm) which allows a single-stitch technique
- Less postoperative pain
- Earlier return to work
- High patient satisfaction

Assembled system



Dilators

A color-coded dilator set is used for the minimally invasive approach. Due to the muscle-sparing access, patients report about less post-operative pain. The color coding of the dilators guide the surgeon as the trocars have the same color codes. Additional dilation is possible at any time.



Color-coded dilation set for easy use.

Instrument details

Trocars and Inserts

There are three different trocars with outer diameters of 15 mm (color code orange, art. no. 28163 GTM), 19 mm (color code green, art. no. 28163 GTK) and 23 mm (color code black, art. no. 28163 GTG). There are two different inserts for each of these trocars.

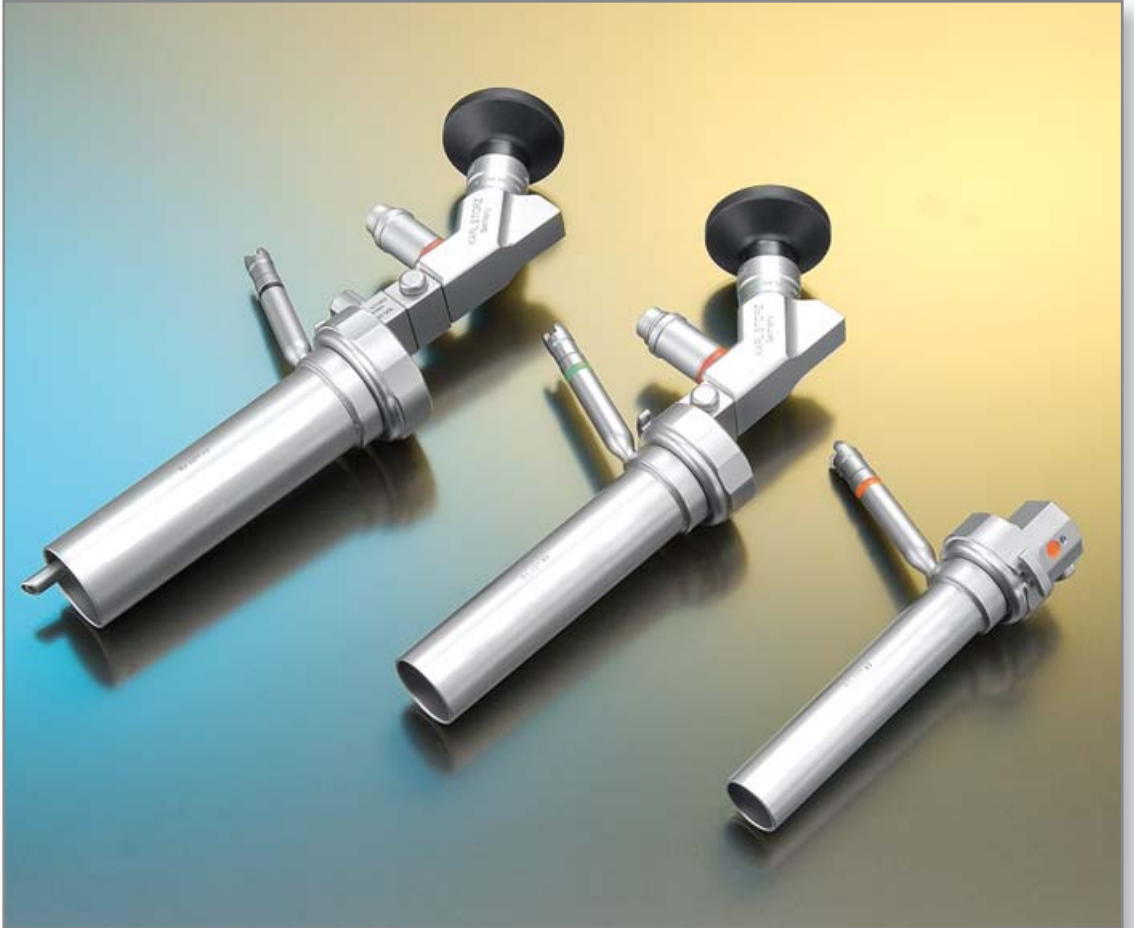


Here you see a picture of the medium trocar (19 mm) from below. Note the spacious working channel!

One insert is fixed in the trocar with a corresponding scope. The other insert comes with an optic sheath, which can be moved up and down in the trocar.

The non-movable insert is useful for simple, standard disc herniations, whereas the movable insert provides the opportunity to move the scope inside the spinal canal (below the edge of the trocar). Both inserts and therefore the scope can be rotated by 360° allowing a panoramic vision of the operative field.

Color code	Orange = small	Green = medium	Black = large
Trocar	28163 GTM	28163 GTK	28163 GTG
Non-movable insert	28163 GAM	28163 GAK	28163 GAG
Corresponding telescope	28095 BAK	28095 BAK	28095 BAK

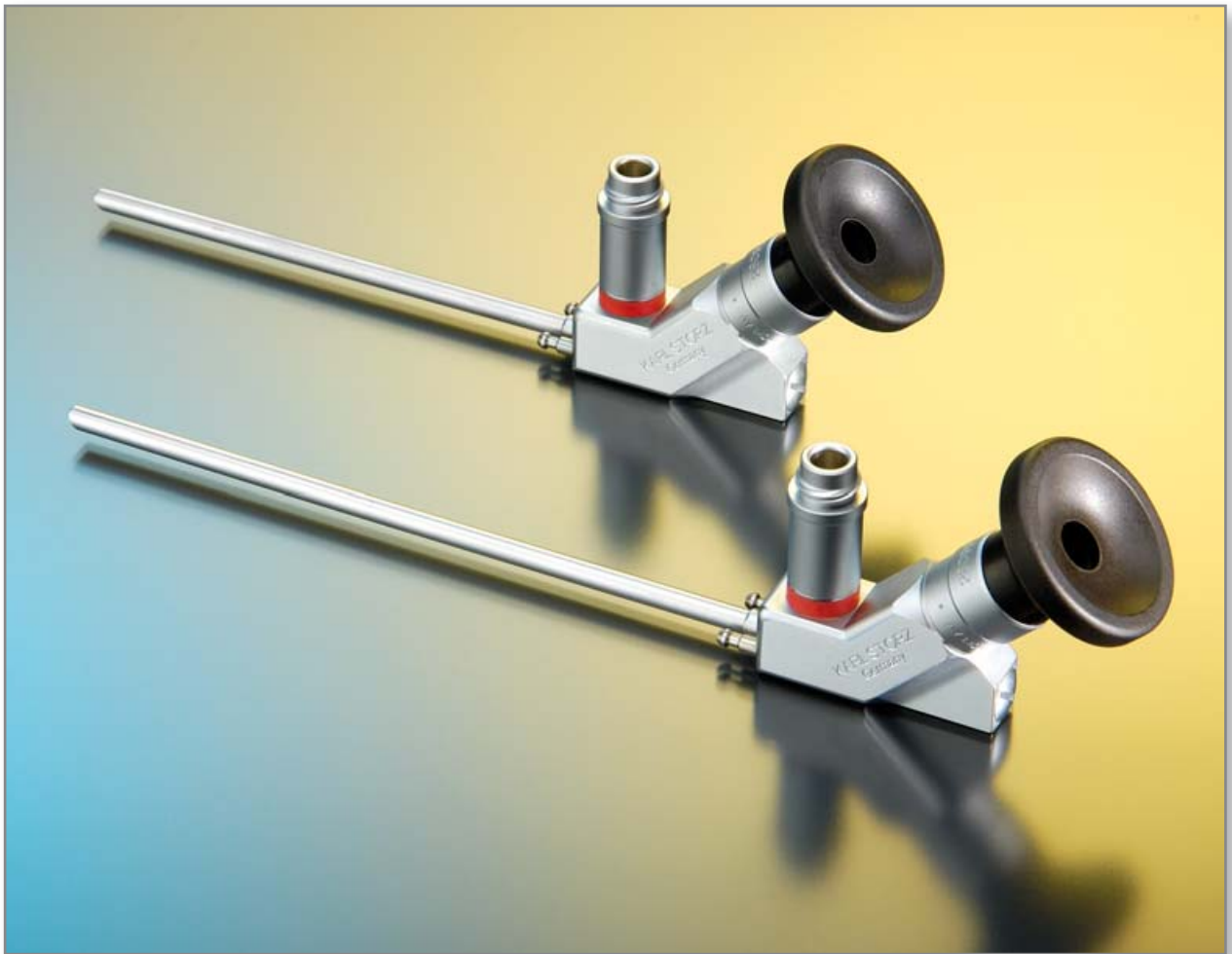


Range of EasyGO! trocars with inserted scopes: orange trocar with OD 15mm, green trocar with OD 19mm, black trocar with 23mm - this allows miniaturized approaches and more maximized ones to cover all possible indications.

Instrument details

Telescopes

Two 30° telescopes belong to the set. The shorter one is for the non-movable insert. The longer one can be adjusted in depth and is especially recommended for decompression/dissection 'under the margins', in the foramina and on the contralateral side for bilateral decompression through a unilateral approach.



Scopes with 30° angle of view and two different length to optimize the operative field viewing

Holder

The attached metal rod on the side of the trocar is the connection to the holder. Here you can see a picture of the assembled EasyGO! system.

The holder has a newly-developed, fast-locking clamp, called the 'KS lock', art. no. 28272 HB with socket 28172 HR. This 'friction type' holder allows various positions – from 'completely' loose to 'fixed, but still movable' or 'firmly fixed in position'.



Low-Profile, easy "snap-on" holder to quickly and accurately position the trocar

Recommended set acc. to Prof. GAAB and Prof. OERTEL



- ① 28163 PL **Puncture Needle**, diameter 1.7 mm, working length 18 cm, with 1.4 mm opening for guide wire
- ② 28163 KD **Guide wire**, not sterile, diameter 1.2 mm, length 31 cm, pack of 10
- ③ 28163 CNS **Dilation Sleeve**, OD 5.2 mm, ID 1.5 mm, graduated, length 23 cm, color code white
- ④ 28163 COS **Dilation Sleeve**, OD 8.9 mm, ID 5.3 mm, graduated, length 21 cm, for use with trocar 28163 CO, color code yellow
- ⑤ 28163 CPS **Dilation Sleeve**, OD 12.7 mm, ID 9.7 mm, graduated, length 19 cm, for use with trocar 28163 CP, color code orange
- ⑥ 28163 CQS **Dilation Sleeve**, OD 14.9 mm, ID 12.9 mm, graduated, length 17 cm, color code red
- ⑦ 28163 CRS **Dilation Sleeve**, OD 16.9 mm, ID 15.1 mm, graduated, length 15 cm, for use with trocar 28163 CR, color code green
- ⑧ 28163 CSS **Dilation Sleeve**, OD 18.9 mm, ID 17.1 mm, graduated, length 14 cm, colour code blue
- ⑨ 28163 CTS **Dilation Sleeve**, OD 20.9 mm, ID 19 mm, graduated, length 13 cm, for use with trocar 28163 CT, color code black
- 28163 GTM **EasyGO! Trocar**, diameter 15 mm, working length 70 mm, for use with EasyGO! inserts and according telescope (not pictured)
- 28163 GAM **EasyGO! Insert**, diameter 15 mm, for use with EasyGO! Trocar 28163 GTM and telescope 28095 BAK (not pictured)
- 28163 GML **EasyGO! Insert**, diameter 15 mm, for use with EasyGO! Trocar 28163 GTM and telescope 28095 BAL, movable inside the trocar (not pictured)
- ⑩ 28163 GTK **EasyGO! Trocar**, diameter 19 mm, working length 74 mm, for use with EasyGO! inserts and according telescope
- 28163 GAK **EasyGO! Insert**, diameter 19 mm, for use with EasyGO! Trocar 28163 GTK and telescope 28095 BAK
- 28163 GKL **EasyGO! Insert**, diameter 19 mm, for use with EasyGO! Trocar 28163 GTK and telescope 28095 BAL, movable inside the trocar
- ⑪ 28163 GTG **EasyGO! Trocar**, diameter 23 mm, working length 76 mm, for use with EasyGO! inserts and according telescope
- ⑫ 28095 BAK **HOPKINS® Straight Forward Telescope 30°**, eyepiece 45° angled, diameter 4 mm, length 9.5 cm, for use with EasyGO! system, **autoclavable**, fiberoptic light transmission incorporated, color code: red
- 28095 BAL **HOPKINS® Straight Forward Telescope 30°**, eyepiece 45° angled, diameter 4 mm, length 12 cm, for use with EasyGO! system, autoclavable, fiberoptic light transmission incorporated, color code: red
- 28163 GAG **EasyGO! Insert**, diameter 23 mm, for use with EasyGO! Trocar 28163 GTG and telescope 28095 BAK
- 28163 GGL **EasyGO! Insert**, diameter 23 mm, for use with EasyGO! Trocar 28163 GTG and telescope 28095 BAL, movable inside the trocar
- 28163 GLS **EasyGO! Telescope Sheath**, for use with 28095 BAL
- ⑬ 495 NL **Fiberoptic Light Cable**, size 3.5 mm, length 180 cm
- ⑭ 28163 CLS KERRISON **Bone Punch 90°**, upbiting forward, size 2 mm, working length 24 cm
- ⑮ 28163 CLB KERRISON **Bone Punch 90°**, upbiting forward, size 4 mm, working length 24 cm
- ⑯ 28163 CFS KERRISON **Bone Punch 40°**, upbiting forward, size 2 mm, working length 24 cm
- ⑰ 28163 CFB KERRISON **Bone Punch 40°**, upbiting forward, size 4 mm, working length 24 cm
- ⑱ 28163 BKD KERRISON **Punch**, bayonet-shaped, downbiting 40° forward, size 2 mm, working length 17 cm

Recommended set acc. to Prof. GAAB and Prof. OERTEL

- ⑲ 28163 BKU **KERRISON Punch**, bayonet-shaped, upbiting 40° forward, size 2 mm, working length 17 cm
- ⑳ 28163 EHK **Hook Scissors**, single action jaws, size 2.7 mm, working length 25 cm
- 28163 FB **BLAKESLEY Nucleus Cutting Forceps**, single action jaws, movable jaw opening upwards, diameter 3.5 mm, working length 20 cm (not pictured)
- ㉑ 28163 CC **Spoon Forceps**, heavy, oval, spoon size 3 × 10 mm, single action jaws, working length 20 cm
- ㉒ 28164 MDB **MORTINI Dissector**, dead hand, bayonet shaped, 3 mm, curved upward, with round handle, sharp, working length 16 cm
- 28163 AH **Palpation Hook**, hook distally angled 90°, blunt, working length 20 cm (not pictured)
- ㉓ 28163 DSB **Dissector**, distal tapered, bajonet-shaped, working length 15 cm
- ㉔ 28163 NSB **Nerve Hook**, distal length 3 mm, bajonet-shaped, working length 15 cm
- ㉕ 28163 NBB **Nerve Hook**, distal length 5 mm, bajonet-shaped, working length 15 cm
- 28163 GBM **Knife**, bajonett shaped with surgical handle (not shown), working length 15 cm, for blades 208010 - 15, 208210 - 15
- ㉖ 28163 RAS **Raspatory**, rasp 6 × 2 mm, working length 20 cm
- 28163 GBM Surgical handle, bayonet-shaped with working length 15 cm for blades 208010-15, 208210-15
- ㉗ 28163 RN **Nerve Retractor**, hook 4 mm, angled sheath, working length 20 cm
- 649182 **FERGUSON Suction Tube**, with cut-off hole and stylet, LUER, working length 15 cm, 8 Fr. (not pictured)
- ㉘ 844523 **Bipolar Coagulating Forceps**, insulated, bayonet-shaped, tip 0.3 mm, length 23 cm, for use with bipolar high frequency cord 847000 E or 847000 A/M/T/V
- ㉙ 844623 **Bipolar Coagulating Forceps**, insulated, bayonet, blunt, tip 1.2 mm wide, length 23 cm, for use with bipolar high frequency cords 847000 E or 847000A/F/M/N/S/T/V
- 28164 BDG **Take-apart TAN BipolarGrasping Forceps**, size 3,4 mm, length 20 cm, for use with trocar size 3.9 mm, consisting of:
 - 26284 HM **Ring Handle**
 - 26284 AS **Outer Tube**
 - 26284 BS **Inner Tube**
 - 28164 FDG **Forceps Insert**
- ㉚ 426620 **GRUENWALD Nasal Dressing Forceps**, bayonet, 20 cm
- ㉛ 28272 HB **Articulated Stand**, reinforced version, only, L-shaped, with one mechanical central clamp for all five joint functions, height 48 cm, operating range 52 cm, with fastener: 'KS lock' (female)
- 28172 HR **Rotation Socket** to clamp on the operating table with one already mounted butterfly nut 28172 HRS, for use with European and United States standard rails, with lateral clamping element for height and angle adjustment of the articulated stand
- Bipolar Cable** (not pictured)

Recommended Sterilization Containers:

- Telescopes: 39301 A
- Instruments: 39360 AK (2×)

Light sources



- 20 1331 01-1 KARL STORZ Cold Light Fountain XENON 300,**
with integrated KARL STORZ SCB, integrated anti-fog
pump, one 300 watt XENON lamp and one KARL STORZ
light outlet, power supply: 100–125/220–240VAC, 50/60Hz
consisting of:
- | | |
|---------------------|---|
| 20 1331 20-1 | XENON 300 |
| 400 A | Mains Cord |
| 610 AFT | Silicone Tubing Set , length 250 cm |
| 20 0901 70 | SCB-Connecting Cable , length 100 cm |



- 201340 01 KARL STORZ Cold Light Fountain XENON NOVA 300,**
with one 300 watt XENON lamp and one KARL STORZ
light outlet, power supply: 100–125/220–240 VAC, 50/60 Hz
consisting of:
- | | |
|-------------------|-----------------------|
| 20 1340 20 | XENON NOVA 300 |
| 400 A | Mains Cord |
- 495 NCS **Fiber Optic Light Cable,**
size 4.8 mm, length 250 cm, heat-resistant

- Maximum resolution and the consistent use of the 16:9 aspect ratio guarantee **FULL HD**
- Endoscopic camera systems have to be equipped with three-CCD chips that support the 16:9 input format as well as capturing images with a resolution of 1920 x 1080 pixels

The benefits of High Definition Technology (HD) for medical applications are

- Up to 6 times* higher input resolution of the camera delivers more detail and depth of focus
- Using 16:9 format during image acquisition enlarges the field of vision and supports ergonomic viewing
- The brilliance of color enables optimal diagnosis
- Lateral view is enhanced by 32% when the endoscope is withdrawn slightly, providing the same image enhancement as a standard system. Any vertical information loss is restored and the lens remains clean



222010 20-1xx

222010 11U102 IMAGE 1 HUB™ HD Camera Control Unit (CCU) with SDI Module

for use with IMAGE 1™ HD and standard one- and three-chip camera heads, max. resolution 1920 x 1080 Pixel, with integrated KARL STORZ SCB® and integrated digital Image Processing Module, color systems PAL/NTSC, power supply 100 – 240 VAC, 50/60 Hz

consisting of:

- 222010 20-102 **IMAGE 1 HUB™ HD (with SDI) Camera Control Unit**
- 400 A **Mains Cord**
- 3 x 536 MK **BNC/BNC Video Cable**, length 180 cm
- 547 S **S-Video (Y/C) Connecting Cable**, length 180 cm
- 202032 70 **Special RGB Connecting Cable**
- 2x 202210 70 **Connecting Cable**, for controlling peripheral units, length 180 cm
- 200400 86 **DVI Connecting Cable**, length 180 cm
- 200901 70 **SCB Connecting Cable**, length 100 cm
- 202001 30U **Keyboard**, with English character set

Specifications:

Signal-to-noise ratio	AGC	Video output	Input
IMAGE 1 HUB™ HD Three-chip camera systems ≥ 60 dB	Micro-processor-controlled	- Composite signal to BNC socket - S-Video signal to 4-pin Mini DIN socket (2x) - RGBS signal to D-Sub socket - SDI signal to BNC socket (only IMAGE 1 HUB™ HD with SDI module)(2x) - HDTV signal to DVI-D socket (2x)	Keyboard for title generator, 5-pin DIN socket

Control output /input	Dimensions w x h x d (mm)	Weight (kg)	Power supply	Certified to:
- KARL STORZ-SCB® at 6-pin Mini DIN socket (2x) - 3.5 mm stereo jack plug (ACC 1, ACC 2), - Serial port at RJ-11 - USB port (only IMAGE 1 HUB™ HD with ICM) (2x)	305 x 89 x 335	2.95	100-240 VAC, 50/60 Hz	IEC 601-1, 601-2-18, CSA 22.2 No. 601, UL 2601-1 and CE acc. to MDD, protection class 1/CF

SDI – Serial Digital Interface: optimized to display medical images on Flat Screens, Routing with OR1™ and digital recording with AIDA-DVD-M

ICM: USB-connector for recording video streams and stills on USB storage media or for connection of USB printers for direct printing of the recorded stills



222200 55-3

222200 55-3	50 Hz 60 Hz	IMAGE 1™ H3-Z, Drei-Chip HD Kamerakopf
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max. resolution 1920 x 1080 pixels, progressive scan, soakable, gas and plasmasterilizable, with integrated Parfocal Zoom Lens, focal length f = 15 – 31 mm (2x), 2 freely programmable camera head buttons, for use with color system PAL/NTSC

Image sensor	3x 1/8" CCD-Chip
Pixel output signal H x V	1920 x 1080
Dimensions	Diameter 32-44 mm, length 114 mm
Weight	246 g
Min. sensitivity	F 1,4/1,17 Lux
Lens	Integrated Parfocal Zoom Lens, f = 15-31 mm
Grip mechanism	Standard eyepiece detector,
Cable	non-detachable
Cable length	300 cm

KARL STORZ HD Flat Screens Color systems PAL/NTSC	Version	Order No.	Screen diagonal	Max. screen resolution	Video input							
					Composite signal to BNC socket	S-Video to 4-pin Mini DIN socket	RGB to 5x BNC socket	VGA to 15-pin HD-D-Sub socket	SDI to BNC socket	HD-SDI to BNC socket	DVI to DVI-D socket	
	Wall mounted with VESA 100-adaption	9524 NB	24"	1920 x 1200								
		9526 NB	26"									
	Desktop with pedestal	9524 N	24"		●	●	●	●	●	●	●	
		9526 N	26"									

The following accessories are included:

- 400 A **Mains Cord**
- 9523 PS **External 24VDC Power Supply**
- 9419 NSF **Pedestal**

KARL STORZ AIDA™ DVD-M

Special features:

- Digital storage of still images, video sequences and audio files
- Digital alternative to video printer and video recorder
- Compact housing
- Easy and intuitive handling via touch screen, camera head buttons or footswitch
- Archiving on DVD, CD-ROM, USB stick or network path, multisession and multipatient
- SDI, S-Video and composite video inputs
- All video signals are transferred directly to the video monitor
- Print-out of still images via HP ink jet printer
- Compatible with KARL STORZ Communication Bus (SCB) and OR1™ connect series



20 2045 01-140 KARL STORZ AIDA® DVD-M with Smartscreen™

Compact storage unit with integrated DVD/CD writer and integrated Smartscreen™, color systems **PAL/NTSC**, power supply 100 – 240 VAC, 50/60 Hz

consisting of:

- 20 2045 20-140 KARL STORZ AIDA® DVD-M**
- 400 A **Mains Cord**
 - 400 B **Mains Cord, US-version**
 - 536 MK **BNC/BNC Video Cable, length 180 cm**
 - 547 S **S-Video (Y/C) Connecting Cable, length 180 cm**
 - 2x 20 0400 83 **Adaptor BNC Cinch**
 - 20 0400 84 **Serial Connecting Cable, length 20 cm**
 - 20 0400 85 **DVI Connecting Cable, length 20 cm**
 - 20 0400 88 **USB Extension Cable, length 7.5 cm**



20 2045 02-1 KARL STORZ AIDA® DVD-M without Smartscreen™

Compact storage unit with integrated DVD/CD writer, color systems **PAL/NTSC**, power supply 100–240 VAC, 50/60 Hz

consisting of:

- 20 2045 20-1 KARL STORZ AIDA® DVD-M**
- 400 A **Mains Cord**
 - 400 B **Mains Cord, US-version**
 - 536 MK **BNC/BNC Video Cable, length 180 cm**
 - 547 S **S-Video (Y/C) Connecting Cable, length 180 cm**
 - 2x 20 0400 83 **Adaptor BNC Cinch**
 - 20 0400 88 **USB Extension Cable, length 7.5 cm**

Specifications:

Video systems	Signal inputs	Image formats	Video formats	Audio formats	Storage media
- PAL - NTSC	- SDI - S-Video (Y/C) - Composite	- JPG - BMP - TIFF	MPEG2	WAV	- DVD+R - DVD-R - CD-R - USB stick

KARL STORZ AIDA™ DVD-M HD Kit



20 2000 75

KARL STORZ AIDA DVD-M HD Kit (EU)

Power supply: 100 VAC – 230 VAC, 50/60 Hz
consisting of:

202000 72	AIDA DVD-M HD Box , incl. power supply and power cable
202000 73	USB Connecting Cable , length 180 cm
536 MK	SDI Connecting Cable , length 180 cm
200400 86	2x DVI-D Connecting Cable , length 180 cm
202000 74	USB Hub
202040 77-01	AIDA DVD-M Software Upgrade for HD compatibility

Note:

Two adapter cables (28003 TE) for the isolating transformer are required for the AIDA DVD-M HD Kit

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WWW.KARLSTORZ.COM

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