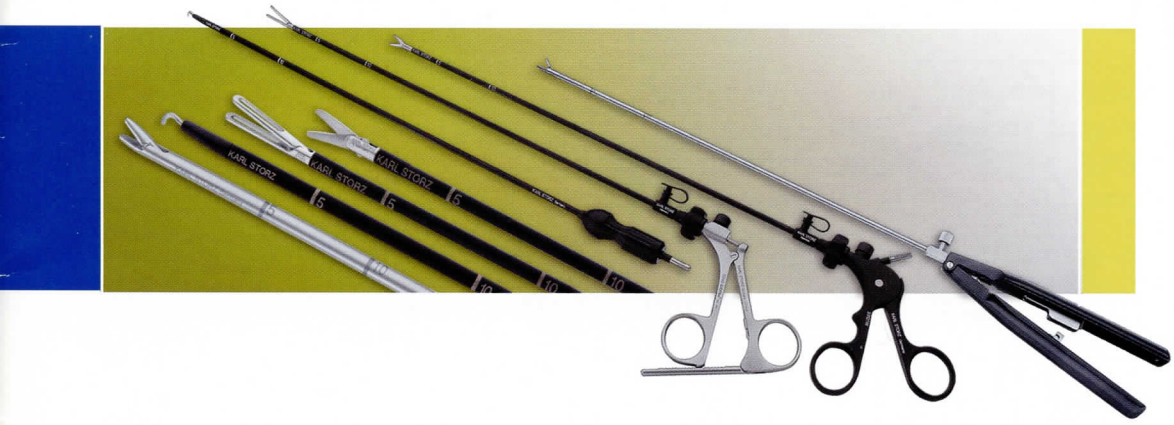
Laparoscopic Obesity Surgery

5/10 Instrument Set according to Prof. G.B.Cadière



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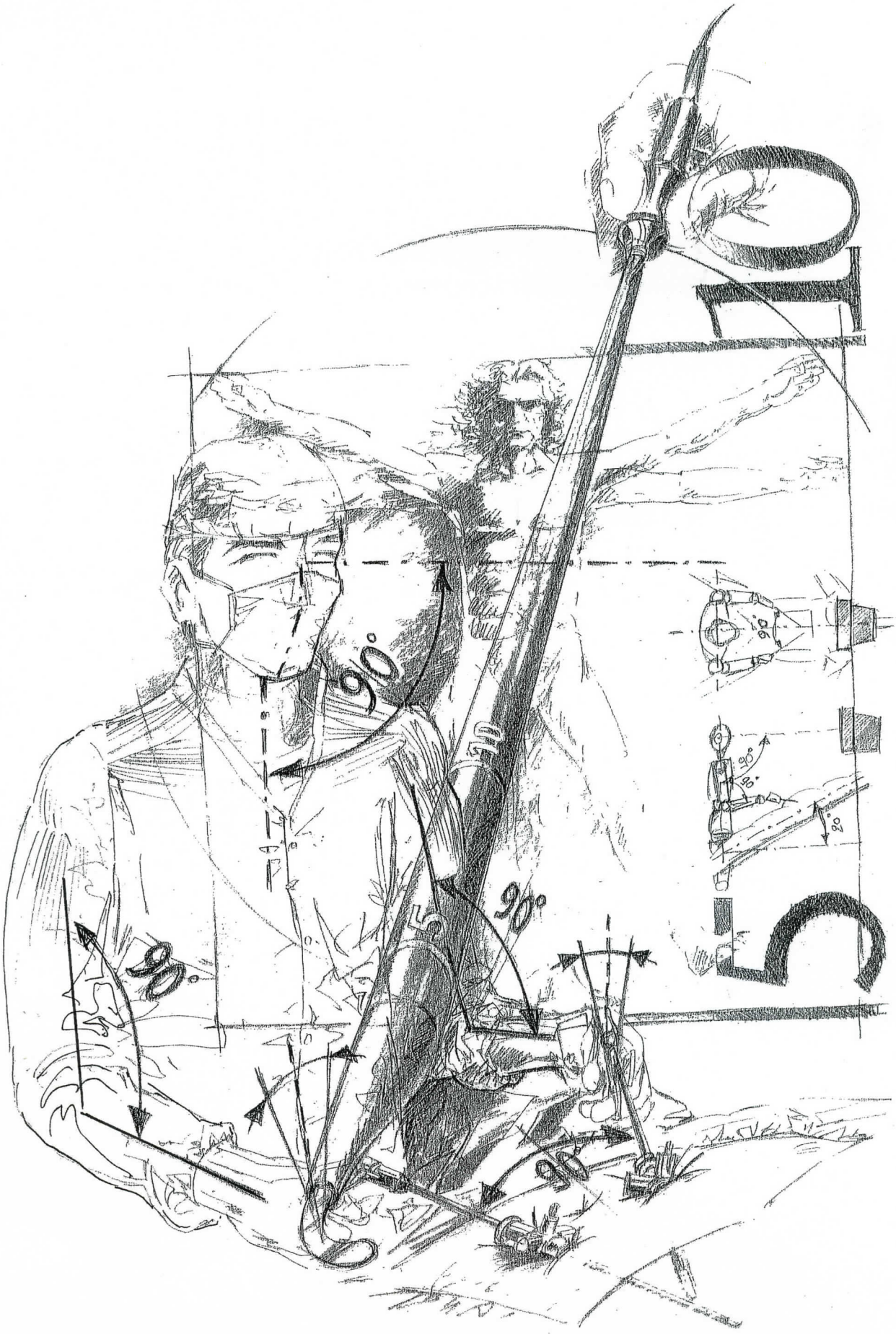
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Laparoscopic Obesity Surgery

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Introduction

Obesity has become an epidemic problem in the developed countries. Obesity is associated with co-morbidities which are responsible for more than 2.5 million deaths per year world-wide. The loss of life expectancy due to obesity is significant. Obesity is rapidly becoming one of the major medical problems of the developed world.

Currently surgery is the only long term effective treatment for morbid obesity. Laparoscopic obesity surgery is associated with less pain, shorter hospital stay and quicker return to normal activity as compared to open techniques.

The laparoscopic approach is less invasive which in the physiologically fragile obese patient induces lower stress, cardiopulmonary burden, blood loss and hence a better outcome. Laparoscopy allows for faster patient mobilization, which translates to a reduced risk of pulmonary embolism and atelectasis.

Laparoscopic obesity surgery is also associated with a lower incidence of wound related problems such as incisional hernia and abscesses. Laparoscopy also induces fewer adhesions resulting in a reduced incidence of bowel obstruction.

The laparoscopic access possibly improves the accuracy of the surgical task secondary to a better view, a good ergonomic position and following the achievement of a learning curve, an improved suturing accuracy as compared to open surgery.

The instruments need to be designed in a way to allow the surgeon to work without constraints in an ergonomical and fatiguefree position. Furthermore the instruments in the set have been marked with 5/10 cm measurement marks on the shaft which allow for precise intra-operative measurements.

As a rule, the surgeon operates two-handed in the most ergonomic position, and never actually holds the camera himself. With his dominating hand the surgeon dissects, cuts, coagulates, suctions and sutures. The non-dominating hand grasps tissue for suturing or dissecting and will usually manipulate the grasping forceps.

G.B.Cadière

General Principles of Laparoscopic Obesity Surgery

The quality of a surgical procedure depends largely on the surgeon's skills and know-how, but even so on the quality and variety of the instruments and of the image guiding the surgeon's actions. Documentation of the OR procedure will be of high importance.

The technique of obesity surgery relies on simple but essential principles and actions:

- patient and surgeon's position
- placement of trocars, optics and laparoscopic instruments
- knowledge about the specific laparoscopic anatomy
- ability to suture and tie knots intra- and extracorporally.

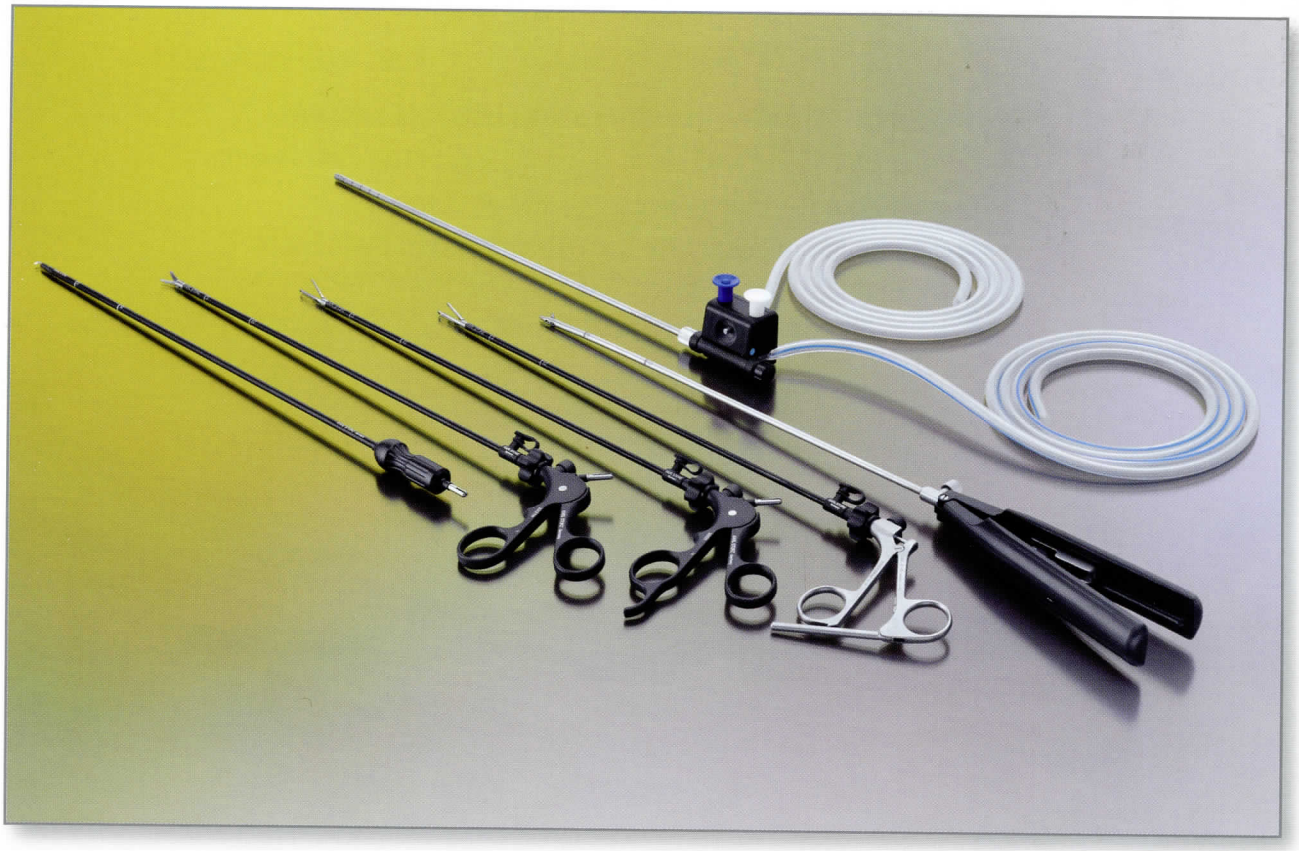
Position of the Patient, Surgeons and Trocars

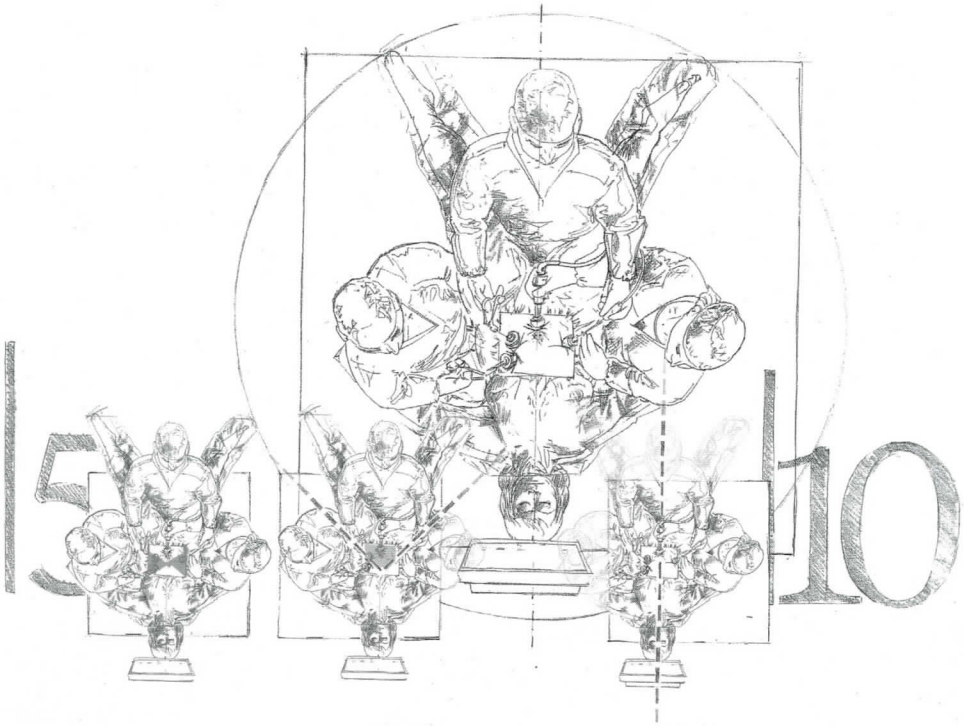
The first rule in laparoscopy concerns the position of instruments, surgeon's head, patient's operative field and video screens. Ideally, the latter three should be separate points on one axis.

The second rule in laparoscopy concerns the trocar placement: there is a distinction between operative or working and assisting trocars. The operative trocars, manipulated by the surgeon, should be at a right angle with the optical system at the bisector of this angle.

The ancillary tools, harboured by the assisting trocars, are placed outside the triangle outline by the operating and optical trocars.

5/10 Instruments according to Prof. G.B.Cadière





Requirements on Laparoscopic Instruments according to Prof. G.B.Cadière

Trocars

- Should be simple to use and as less bulky as possible.
- Should be airtight and allow good sliding of the instruments.
- Should be easy to introduce into the abdomen.
- A reducer is necessary for the use of a 5 mm instrument through a 13 mm trocar, in order to maintain the pneumo-peritoneum.

30160 AP **Trocar**, size 6 mm,
color code: black,
consisting of:
30160 P **Trocar** only, with pyramidal tip
30160 H2 **Cannula** without valve, with insufflation stopcock, length 10.5 cm
30160 A1 **Automatic valve**

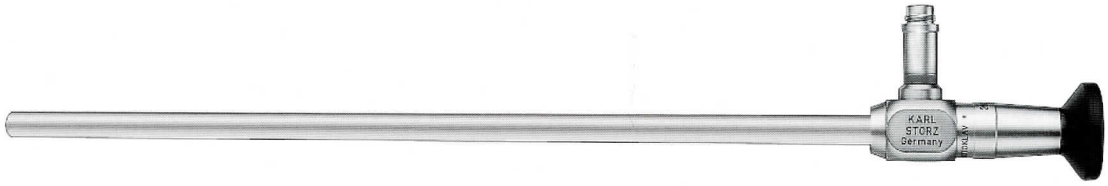
30103 AP **Trocar**, size 11 mm,
color code: green,
consisting of:
30103 P **Trocar** only with pyramidal tip
30103 H2 **Cannula** without valve, with insufflation stopcock, length 10.5 cm
30103 A1 **Automatic valve**

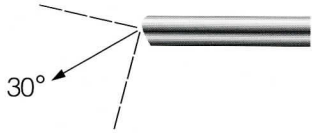
30107 AP **Trocar**, size 13 cm,
color code: black,
consisting of:
30107 P **Trocar** only with pyramidal tip
30107 H2 **Cannula** without valve, with insufflation stopcock, length 11.5 cm
30107 A1 **Automatic valve**

30141 HB **Reducer** 13/05

Optical System

- This system must allow for a precise vision at a distance from the operative site without loss of focus or light intensity.
- This results in less camera motions and in a wider optical field.
- A 30° telescope allows inspection from different angles through one trocar side.





26003 BA

HOPKINS II® **Forward-Oblique Telescope** 30°, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**,
fiber optic light transmission incorporated.
Color code: red

Instruments for the Dominating Hand

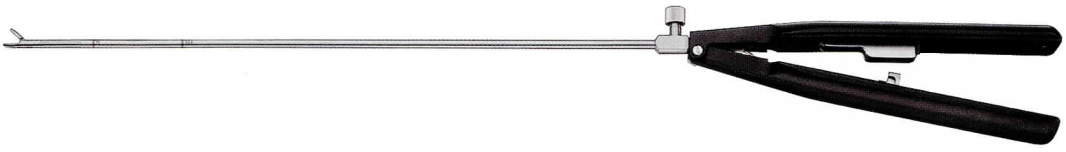
Monopolar Hook

- The hook marked with 5/10 cm measurement marks on the shaft allows for precise measurements.
- The hook is designed for dissection, for isolating structures and for transsection-coagulation.
- The working end is a semi-circle: the outer curvature is thick for safe dissection; the inner one is sharp allowing for prompt transaction with minimal side coagulation.
- The grip is hatched for better grasp.
- The length of the hook allows ergonomic conditions.

26775 C CADIERE **Coagulating and Dissecting Electrode**, L-shaped, tapered tip, with cm-marking, with connector pin for unipolar coagulation, size 5 mm, length 36 cm

Needle Holder

- Must be strong and stable, in order to hold the needle tightly.
- The handle must be long the same axis in order to allow pronation – supination.
- The tip must be curved in order to facilitate knot tying.



26173 CN CADIÈRE **Macro Needle Holder,** ergonomic axial handle with disengageable ratchet, ratchet release on the right side, left curved jaws, with tungsten carbide insert ø 5 mm, length 33 cm

Scissors

- The scissors marked with 5/10 cm measurement marks on the shaft allows for precise measurements when required.
- The rotating axis allows for abduction-free pronation and supination.

34321 MSC **CLICK*line*®** METZENBAUM **Scissors**, rotating, with connector pin for unipolar coagulation, size 5 mm, lenght 36 cm, blades curved, double action jaws, length of blades 12 mm, consisting of:

33121 W **Insulated Handle**, without ratchet and finger rest
33300 CM **Outer Tube**, insulated, with markings
34310 MS **Insert**

Suction Device

- Allows for minute and accurate motions that can be helpful in dissection.
- The tube cross section and the side holes are designed so as to minimize loss of pneumoperitoneum.

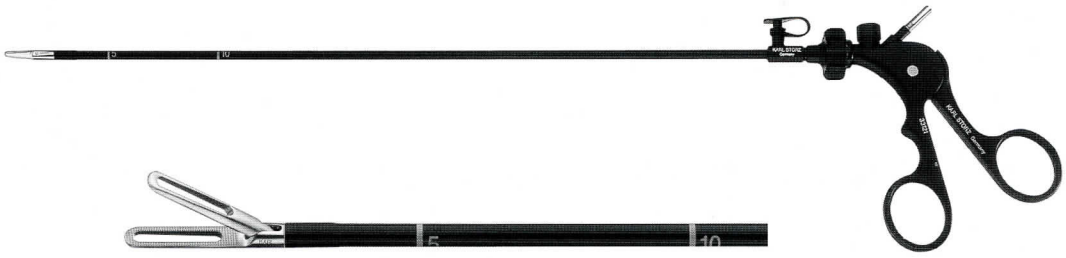
37360 LH **Suction and Irrigation Cannula** with lateral holes, size 5 mm, length 36 cm, for use with suction and irrigation handles

30810 **Handle** for irrigation and suction, **autoclavable**, for use with suction-coagulation tubes size 5 mm, and for use with Silicone Tubing set 30811

30811 **Silicone Tubing Set**, for use with handle 30810, **autoclavable**

Grasping Forceps in the Non-Dominating Hand

- The grasper marked with 5/10 cm measurement marks on the shaft allows for precise measurements when required.
- The grasper is fenestrated, hence atraumatic in nature.
- The grasper's jaws are both short and strong enough in order to hold suture and needle in a stable fashion.
- One end allows for measurement in a precise way.
- The 110° angle allows for good ergonomics of the non-dominating hand.
- In order to avoid interference with the optical system the handles are kept short and the window is kept as small as needed for the surgeon's tasks.

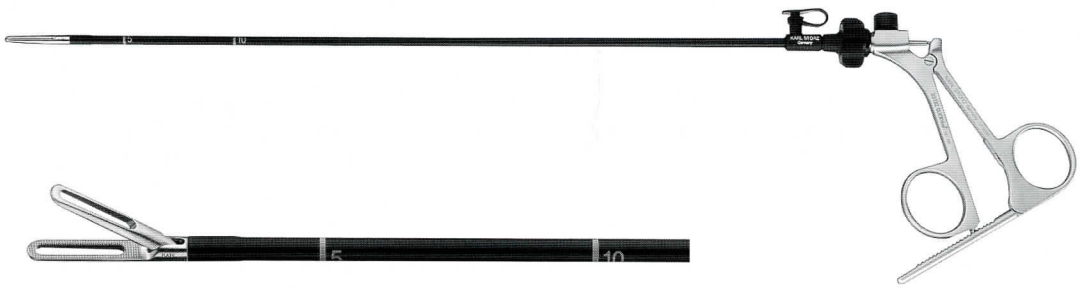


33321 ONC **CLICK*line*® Grasping Forceps**, rotating, with connector pin for unipolar coagulation, size 5 mm, length 36 cm, atraumatic, fenestrated, single action jaws, consisting of:

33121 W **Plastic Handle**, without ratchet, without finger rest
33300 CM **Outer Tube**, insulated, with markings
33310 ON **Forceps Insert**

Grasping Forceps for the Assistant

- The grasper allows for measurement marks 5/10 cm on the shaft.
- It should serve for retraction; hence it needs to be solid.
- The grasper is fenestrated, hence atraumatic in nature.
- The reticulating axis allows for pronation-supination without the need for arm abduction.



33332 ONC **CLICK*line* Grasping Forceps**, rotating, size 5 mm, length 36 cm, atraumatic, fenestrated, single action jaws, consisting of:
33132 **Metal Handle,** with MANHES style, ratchet
33300 CM **Outer Tube**, insulated with markings
33310 ON **Forceps Insert**

IMAGE 1™ HD *NEW*

HD hub Camera Control Unit

- **Genuine HD is guarenteed by a maximum resolution and the consistent use of the native 16:9 aspect ratio from image capture, signal transmission to display devices.**
- **HD-compatible endoscopic video camera systems must be equipped with a CCD chip supporting the 16:9 input format and require that image capture be performed at a resolution of 1920 x 1080 pixels.**

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

- **5 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.**
- **The 16:9/16:10 format of the widescreen monitor supports ergonomic viewing.**
- **Enhanced color brilliance for optimal diagnosis.**
- **Progressive scan technology provides a steady, flicker-free display and helps eliminate eyes-train and fatigue.**

22 2010 20-1xx

22 2010 11U102 IMAGE 1 HUB™ HD Camera Control Unit (CCU)

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

consisting of:

22 2010 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
20 2032 70	**Special RGB Connecting Cable**
2x **20** 2210 70	**Connecting Cable,** for controlling peripheral units, length 180 cm
20 0400 86	**DVI Connecting Cable,** length 180 cm
20 0901 70	**SCB Connecting Cable,** length 100 cm
20 2001 30U	**Keyboard,** with English character set

Specifications:

Signal-to-noise ratio	AGC	Video output	Input
IMAGE 1™ Three-chip camera systems ≥ 60 dB	Microprocessor-controlled	- Composite signal to BNC socket - S-Video signal to 4-pin Mini DIN socket (2x) - RGB signal to D-Sub socket - DV signal to DV socket (only IMAGE 1™ with DV module) - SDI signal to BNC socket (only IMAGE 1™ 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	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

IMAGE 1™ HD NEW

HD Camera Head

22 2200 50-3/22 2201 50-3

22 2200 50-3 **50 Hz** **IMAGE 1™ H3, Three-Chip HD Camera Head**

max. resolution 1920 x 1080 pixel Progressive Scan, 50 Hz,
with 2 freely programmable Camera Head buttons,
with integrated Parfocal-Zoom, focal length f = 14 – 30 mm (2x)

22 2201 50-3 **60 Hz** **IMAGE 1™ H3, Three-Chip HD Camera Head**

max. resolution 1920 x 1080 pixel Progressive Scan, 60 Hz,
with 2 freely programmable Camera Head buttons,
with integrated Parfocal-Zoom focal length f = 14 – 30 mm (2x)

Specifications:

Image sensor	Pixels	Dimensions	Weight	Lens
IMAGE 1™ Three-Chip Camera Head 3x ⅓ CCD chip	1920 (H) x 1080 (V) pixels per chip	31 x 114 x 48 mm (w x h x d)	210 g	Integrated Parfocal Zoom Lens, f = 14–30 mm

Standard IMAGE 1™ camera heads may also be connected to IMAGE 1™ HD hub camera control unit (CCU).

KARL STORZ HD Flat Screens Color systems PAL/NTSC	Version	Order No.	Screen diagonal	Max. screen resolution	Video input						
			58.5 cm (23“)	1920 x 1200	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	9523 NB	●	●	●	●	●	●	●	●	●
	Desktop with pedestal	9523 N									

The following accessories are included:

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

Data Management and Documentation

KARL STORZ AIDA® compact HD

Special features:

- **Digital storage of still images with a resolution of 1920 x 1080, video sequences in 720p and audio files**
- **Communication Package DICOM/HL7 (optional)**
- **Sterile, ergonomic operation via touch screen, voice control, camera head buttons and/or footswitch**
- **Automatic recognition of connected camera systems at HD-SDI/SD-SDI inputs (of IMAGE 1™ camera systems at SD-SDI input only)**
- **Efficient archiving on DVD, CD-ROM or USB stick, multisession and multipatient**
- **Network storage possible**
- **Automatic creation of standard reports**
- **Computers and monitors for use in the OR area certified according to EN 60601-1**
- **Compatible with KARL STORZ Communication Bus (SCB) and OR1™ connect Serie KARL STORZ AIDA® compact HD as an attractive, digital alternative to video printers, video recorders and dictating machines**

200406 08U	**KARL STORZ AIDA® compact HD System**
Documentation system for digital storage of still images, video sequences and audio files, power supply: 115/230 VAC, 50/60 Hz	
consisting of:	
200460 20	**KARL STORZ AIDA® control II,** with integrated DVD/CD writer
200405 77	**AIDA compact II HD-Frame Grabber Card**
200902 34U	**PS/2 Compact Keyboard,** English, with drape
200404 02-17	**AIDA® compact II HD Software,** with voice control and software protection
20040275	**KARL STORZ USB Stick**, with 2 GB
2x 202210 70	**Connecting Cable**
536 MK	**BNC-Connecting Cable**, length 180 cm
536 MKD	**BNC-Connecting Cable**, length 30 cm
200400 86	**DVI-Connecting Cable**, length 180 cm
400 A	**Mains Cord**
200400 87	**MiniDIN Cable Plug**, to BNC female

Specifications::

Video systems	Signal input	Image formats	Video formats	Audio formats	Storage media
• PAL • NTSC	• S-Video (Y/C) • Composite • RGBS • SDI • HD-SDI • DVI	• JPG • BMP	• MPEG2	• WAV	• DVD+R • DVD+RW • DVD-R • DVD-RW • CD-R • CD-RW • USB stick

KARL STORZ Monitors

20 0904 01 **15" KARL STORZ Touch Screen**, wall mounted,
RS-232, VGA, DVI-D Resolution max. 1024 × 768 (XGA)
incl. 3 Touch Screen covers,
power supply: 100 VAC–240 VAC, 50/60 Hz
consisting of:
20 0903 31 **15" Touch Screen**
20 0400 73 **RS-232 Cable,** length 600 cm
20 0402 72 **SVGA Cable,** length 600 cm
20 0903 86 **Touch Pen**
20 0904 83 **Adapter Set,** VESA 75

20 0904 05 **19" KARL STORZ Touch Screen,** 24V, wall mounted,
RS-232, VGA, DVI-D resolution max. 1280 × 1024 (SXGA mode),
incl. 3 Touch Screen covers,
power supply: 100 VAC–240 VAC, 50/60 Hz
consisting of:
20 0904 37 **19" Touch Screen**
20 0400 73 **RS-232 Cable,** length 600 cm
20 0402 72 **SVGA Cable,** length 600 cm
20 0903 86 **Touch Pen**

20 0904 03 **15" KARL STORZ Touch Screen,** Desktop,
RS-232, VGA, DVI-D Resolution max. 1024 x 768 (XGA),
incl. 3 Touch Screen covers,
power supply: 100 VAC–240 VAC, 50/60 Hz
consisting of:
200903 31 **15" Touch Screen**
200904 86 **Base Stand**
200903 86 **Touch Pen**

20 0904 06 **19" KARL STORZ Touch Screen,** 24V desktop,
RS-232, VGA, DVI-D resolution max. 1280 x 1024 (SXGA mode),
incl. 3 Touch Screen covers,
power supply: 100 VAC–240 VAC, 50/60 Hz
consisting of:
200904 37 **19" Touch Screen**
200904 87 **Base Stand**
200903 86 **Touch Pen**

5/10 Instrument Set according to Prof. G.B.Cadière

Qty	Item No.	Description
1	26120 JLL	VERRES Needle
1	30103 AP	Trocar, size 11 mm, automatic valve, pyramidal tip
2	30160 AP	Trocar, size 6 mm, automatic valve, pyramidal tip
2	30107 AP	Trocar, size 13 mm, automatic valve, pyramidal tip
2	30141 HB	Reducer, size 13 -> 5mm
1	26003 BA	Telescope, size 10 mm, 30° enlarged view, length 31 cm
1	26775 C	CADIERE Coagulating and Dissecting Electrode, L-shape, size 5 mm, length 36 cm
1	26173 CN	CADIERE Macro Needle Holder, 5 mm, length 33 cm
1	34321 MSC	METZENBAUM Scissors, 5 mm, length 36 cm
1	37360 LH	Suction and Irrigation Cannula, size 5 mm, length 36 cm
1	30810	Handle
1	30811	Silicone Tubing Set
1	33321 ONC	Grasping Forceps, size 5 mm, length 36 cm, plastic handle, without ratchet
3	33332 ONC	Grasping Forceps, size 5 mm, length 36 cm, metal handle with ratchet

European School of Laparoscopic Surgery

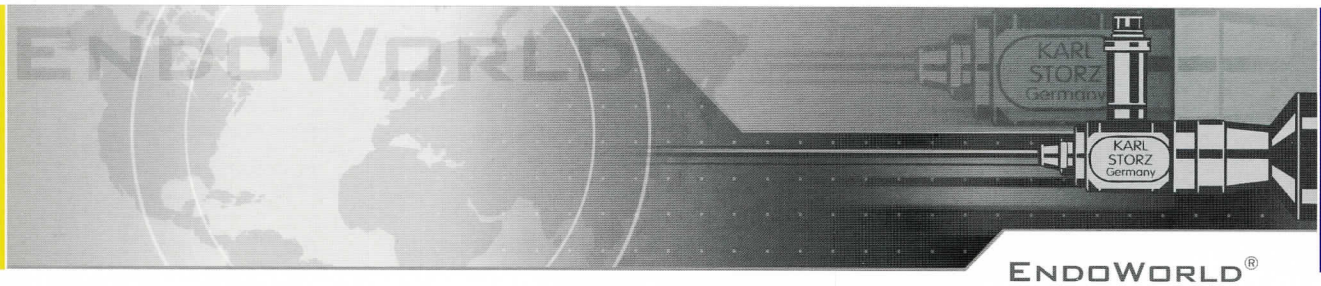
The courses in laparoscopic surgery at the Saint-Pierre University Hospital exist for more than 10 years and is one of the oldest and most important schools for laparoscopic surgery in Europe. The very best experts of the world have come to teach and since its beginning over 5000 surgeons and fellows have followed the course. For years these courses are endorsed by the society of American Gastrointestinal and Endoscopic Surgeons (SAGES) and by the European Association for Endoscopic Surgery (EAES). The courses are also transmitted at distance in University Centers around the world including Third World Countries. All the workshops aim to offer the laparoscopic surgeon all the details (tricks and pitfalls) needed in performing advanced laparoscopic procedures.

This form of teaching is based on live procedures performed by expert surgeons (highly qualified individuals with technical and teaching expertise). Opportunities to interact with the operative surgeon are provided directly in the operation room. International experts moderate the live surgical procedures either on-site or by video-conferencing.

Every subject is classically approached by 4 steps:

- Laparoscopic anatomy by virtual reality
- Illustration of the procedure's principles
- Live demonstrations
- Discussion on technical details that can be reviewed on CD/DVD

Saint-Pierre University Hospital – Department of Gastrointestinal Surgery
European School of Laparoscopic Surgery
322, Rue Haute • 1000 Brussels, Belgium
Tel: +32 (0)2 535 41 15 • Fax: +32 (0)2 535 31 66 • E-mail: coelio@resulb.ulb.ac.be
www.lap-surgery.com



ENDOWORLD®

WWW.KARLSTORZ.COM

KARL STORZ GmbH & Co. KG
Mittelstraße 8, 78532 Tuttlingen, Germany
Postfach 230, 78503 Tuttlingen, Germany
Phone: +49 (0)7461 708-0
Fax: +49 (0)7461 708-105
E-Mail: info@karlstorz.de
www.karlstorz.com

KARL STORZ Endoscopy-America, Inc.
2151 East Grand Avenue
El Segundo, CA 90245-5017, USA
Phone: +1 424 218-8100, +1 800 421-0837
Fax: +1 424 218-8526
E-Mail: info@ksea.com

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