

STORZ



THE WORLD OF ENDOSCOPY

NEURO
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THOR
LAP
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URO
PRO
ART
CV

TRAINERS AND SIMULATORS

1st EDITION 2/2018

Important Notes:

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

Endoscopes and accessories contained in this catalog have been designed in part with the cooperation of physicians and are manufactured by the KARL STORZ group. If subcontractors are hired to manufacture individual components, these are made according to proprietary KARL STORZ plans or drawings. Furthermore, these products are subject to strict quality and control guidelines of the KARL STORZ group. Both contractual and general legal provisions prohibit subcontractors from supplying components manufactured by order of KARL STORZ to competitors.

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Standardized Design and Labeling

KARL STORZ participates both in national and international bodies involved in the development of standards for endoscopes and endoscopic accessories. Standardized design and development therefore have long been implemented consistently by KARL STORZ. The user can rest assured that all products by the KARL STORZ group have been designed and constructed not only in compliance with strict internal quality guidelines, but also with international standards. All data relevant for safe use, such as viewing direction, sizes and diameters, or notes regarding sterilization of telescopes, are applied to the instruments, have been formulated according to international standards, and therefore provide reliable information.

As we constantly seek to improve and modify our products, we reserve the right to make changes in design that vary from catalog descriptions.

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KARL STORZ products are name brand articles renowned around the world and represent the state of the art in important areas of healthcare. A large number of "copy cat" products are currently being offered in many markets. These products are designed intentionally to resemble KARL STORZ products and use marketing strategies that at least point out their compatibility with KARL STORZ products. These products are by no means genuine products, since genuine KARL STORZ products are sold worldwide exclusively under the name of KARL STORZ, which appears on the packaging and the product. In the absence of such labeling, the product is not from KARL STORZ.

KARL STORZ, therefore, is unable to ensure that such products are actually compatible with genuine KARL STORZ products or can be used with them without injury to the patient.



NEUROSURGERY

S.I.M.O.N.T. HEAD MODEL CRANIAL 2-3

S.I.M.O.N.T. HEAD MODEL
OTORHINO AND
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S.I.M.O.N.T. Head Model

Cranial

This training model provides an opportunity to learn transnasal endoscopic procedures quickly and easily under realistic surgical conditions and is a cost-effective alternative to human specimens.

The integrated pump system enables simulation of the cerebrospinal fluid circulation to create the most realistic surgical conditions possible. Furthermore, intracranial hemorrhage can be simulated by using a marker dye.

Individual consumables can be replaced after use or when worn.

The exact reproduction of the anatomy makes this model particularly suitable for countries where the use of human specimens is prohibited for ethical reasons.

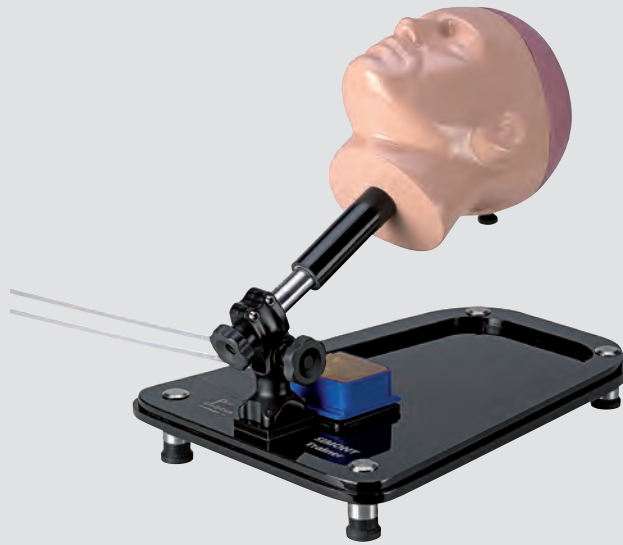
Special Features:

- Exact reproduction of the anatomy, particularly the ventricles
- Integrated pump system for simulation of cerebrospinal fluid circulation
- Simulation of intracranial bleeding possible
- Head holder allows fixation in various positions
- Special material provides good tactile feedback
- Replaceable consumables (ventricular system)



S.I.M.O.N.T. Head Model

Cranial



28199 LC

28199 LC **S.I.M.O.N.T. Head Model, cranial**
including:
Insert
Head
Power Supply
Base
Joystick
Pump
Head Support

S.I.M.O.N.T. Head Model

Otorhino and Anterior Skull Base

This training model provides an opportunity to learn transnasal endoscopic procedures and approaches to the pituitary gland quickly and easily under realistic surgical conditions and is a cost-effective alternative to human specimens.

The pump system provided enables structures such as, for example, blood vessels to be filled, thereby

simulating realistic OR conditions. Consumables can be replaced after use or when worn.

The exact reproduction of the anatomy makes this model particularly suitable for countries where the use of human specimens is prohibited for ethical reasons.

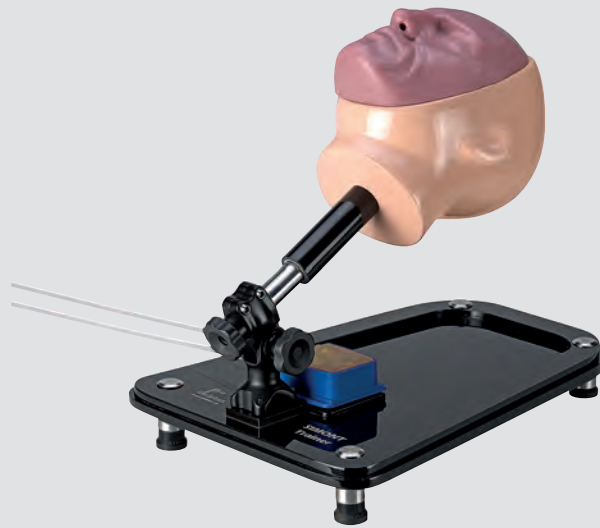
Special Features:

- Exact reproduction of the anatomy, particularly the nasal and sphenoidal regions
- Integrated pump system for the simulation of bleeding
- Head holder allows fixation in various positions
- Special material provides good tactile feedback
- Replaceable consumables (skull base insert)



S.I.M.O.N.T. Head Model

Otorhino and Anterior Skull Base



28199 LS

28199 LS

S.I.M.O.N.T. Head Model, for otorhino and skull base
including:

Insert

Head

Power Supply

Base

Joystick

Pump

Head Support

“The EGG” Training Model

for endoscopic transsphenoidal pituitary surgery

The model is a 3D reconstruction of the head made from hard synthetic material with a softer removable part in the nose and sphenoid sinus areas. By placing a boiled egg between the two halves, the model allows simulation of the sellar floor opening (resection of the

eggshell) and subsequent tumor resection (removal of the egg yolk). The objective is to preserve the surrounding tissue (egg white) as far as possible and to practice and optimize eye-hand coordination under endoscopic control.

Special Features:

- Reusable model for acquiring endoscopic skills (hand-eye coordination)
- Removable plastic insert for reconstruction of the nose and sphenoidal sinuses with simplified anatomy (without turbinate)
- Degree of difficulty can be varied according to the size of the egg used



“The EGG” Training Model

for endoscopic transsphenoidal pituitary surgery



28199 EH

28199 EH **“The EGG” Training Model**, for endoscopic transsphenoidal pituitary surgery including:
Head Holder
Facial Part, removable
Inner Carton (Eggs)
Mount for Egg
Mount for Quail Egg

Mobile Standard Rail

The mobile standard rail was especially designed for teaching and training purposes in order to equip tables in anatomy departments or laboratory settings with

standard rails. The rail also allows the mounting of holding arms.



28272 MR

- 28272 MR **Mobile Standard Rail**, for installation on tables in veterinary and laboratory settings or experimental surgery including:
- Holding Plate**
 - 2x **C-Clamp**
 - 2x **Stop Block**

Note:

The standard rail is not intended for use in human medicine in the OR or outpatient/office settings.

Spare Parts for S.I.M.O.N.T. Head Model 28199 LC

28199 LCA	S.I.M.O.N.T. Insert , cranial
28199 LCB	S.I.M.O.N.T. Head , cranial
28199 LN	S.I.M.O.N.T. Power Supply , 90 – 240 V
28199 LB	S.I.M.O.N.T. Base
28199 LJ	S.I.M.O.N.T. Joystick
28199 LP	S.I.M.O.N.T. Pump , peristaltic
28199 LH	S.I.M.O.N.T. Head Support

Spare Parts for S.I.M.O.N.T. Head Model 28199 LS

28199 LSA	S.I.M.O.N.T. Insert , for otorhino and skull base
28199 LSB	S.I.M.O.N.T. Head
28199 LN	S.I.M.O.N.T. Power Supply , 90 – 240 V
28199 LB	S.I.M.O.N.T. Base
28199 LJ	S.I.M.O.N.T. Joystick
28199 LP	S.I.M.O.N.T. Pump , peristaltic
28199 LH	S.I.M.O.N.T. Head Support

Spare Parts for Mobile Standard Rail 28272 MR

28272 MP	Holding Plate , not for use in human medicine
28272 MC	C-Clamp , not for use in human medicine
28272 MW	Stop Block , not for use in human medicine



OTORHINOLOGY

TRAINING MODEL FOR
ENDOSCOPY OF THE NOSE
AND PARANASAL SINUSES 12

FIRMIN AURICAL RECONSTRUCTION
TRAINER 13

SPARE PARTS AND
ACCESSORIES 14

Training Model

for endoscopy of the nose and nasal sinuses

The training model provides an exact reproduction of the human skull. It consists of five coronal sections, each with a thickness of 1.5 cm, that have been sculpted and reconstructed from flexible polyurethane material. The sections can be superimposed forming a complete nasal cavity, which can then be examined in detail with an endoscope.

Individual consumables can be replaced after use or when worn.

This model is particularly suitable for countries where the use of human specimens is prohibited for ethical reasons.

Special Features:

- **Exact reproduction of the human skull:**

- Turbinate/Septum
- Maxillary Sinus
- Ethmoidal Cells
- Sphenoidal Sinus

- **Special material provides good tactile feedback**



723128

723128

Training Model, for endoscopy of the nose and paranasal sinuses

including:

Section Plane 1: Front Plate

Section Plane 2: Turbinate/Septum

Section Plane 3: Maxillary Sinus

Section Plane 4: Ethmoidal Cells

Section Plane 5: Sphenoidal Sinus

Base Plate

Mask

Case

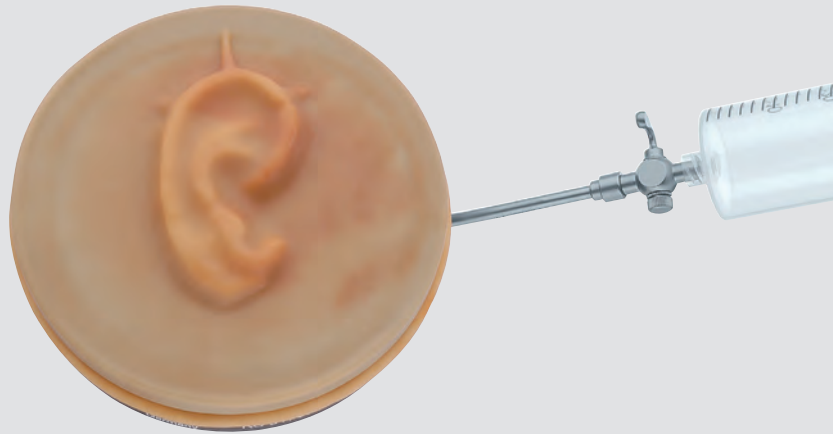
Documentation Atlas

MANESTAR/GROSCURTH 3D Nose Model

FIRMIN Aurical Reconstruction Trainer

The ear framework is sculpted from polysterol foam with a simple scalpel and then placed on the platform of the trainer. An air-tight rubber diaphragm is secured over the platform and framework before air is withdrawn with a syringe connected to the system. The vacuum created

tightens the diaphragm around the framework. In this way, the rubber imitates the skin and an impression of how the sculpted framework would look in a clinical case is achieved.



50209 RT

50209 RT

FIRMIN Auricle Reconstruction Trainer

including:

Base Plate, with LUER-adaptor for creating a vacuum

20x **Foam Plate**, size 75 x 150 mm, thickness 7 mm

2x **Rubber Diaphragm**

Syringe, 60 ml

Spare Parts for Training Model 723128

723128 A	Section Plane 1: Front Plate
723128 B	Section Plane 2: Turbinate/Septum
723128 C	Section Plane 3: Maxillary Sinus
723128 D	Section Plane 4: Ethmoidal Cells
723128 E	Section Plane 5: Sphenoidal Sinus
723128 F	Base Plate
723128 G	Mask
723128 H	Case
723128 K	Documentation Atlas, MANESTAR/GROSCURTH 3D nose model, 3D model of the nose and paranasal sinuses, anatomy in coronal sections and corresponding CT images

Spare Parts for Auricle Reconstruction Trainer 50209 RT

50209 RTB	Base Plate , with LUER-adaptor for creating a vacuum
50209 RFP	Foam Plate , size 75 x 150 mm, thickness 7 mm
50209 RTR	Rubber Diaphragm , for use with Base Plate 50209 RTB
50209 RTS	Syringe , 60 ml



PLASTIC SURGERY

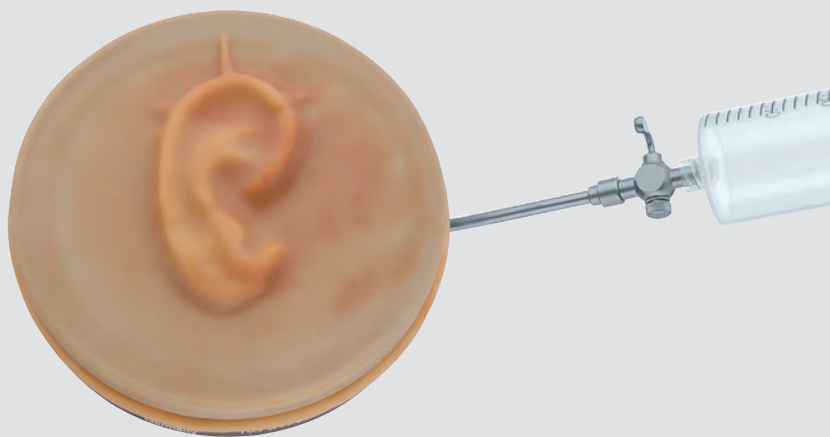
FIRMIN AURICAL
RECONSTRUCTION TRAINER 16

SPARE PARTS AND
ACCESSORIES 17

FIRMIN Aurical Reconstruction Trainer

The ear framework is sculpted from polysterol foam with a simple scalpel and then placed on the platform of the trainer. An air-tight rubber diaphragm is secured over the platform and framework before air is withdrawn with a syringe connected to the system. The vacuum created

tightens the diaphragm around the framework. In this way, the rubber imitates the skin and an impression of how the sculpted framework would look in a clinical case is achieved.



50209 RT

50209 RT

FIRMIN Auricle Reconstruction Trainer

including:

Base Plate, with LUER-adaptor for creating a vacuum

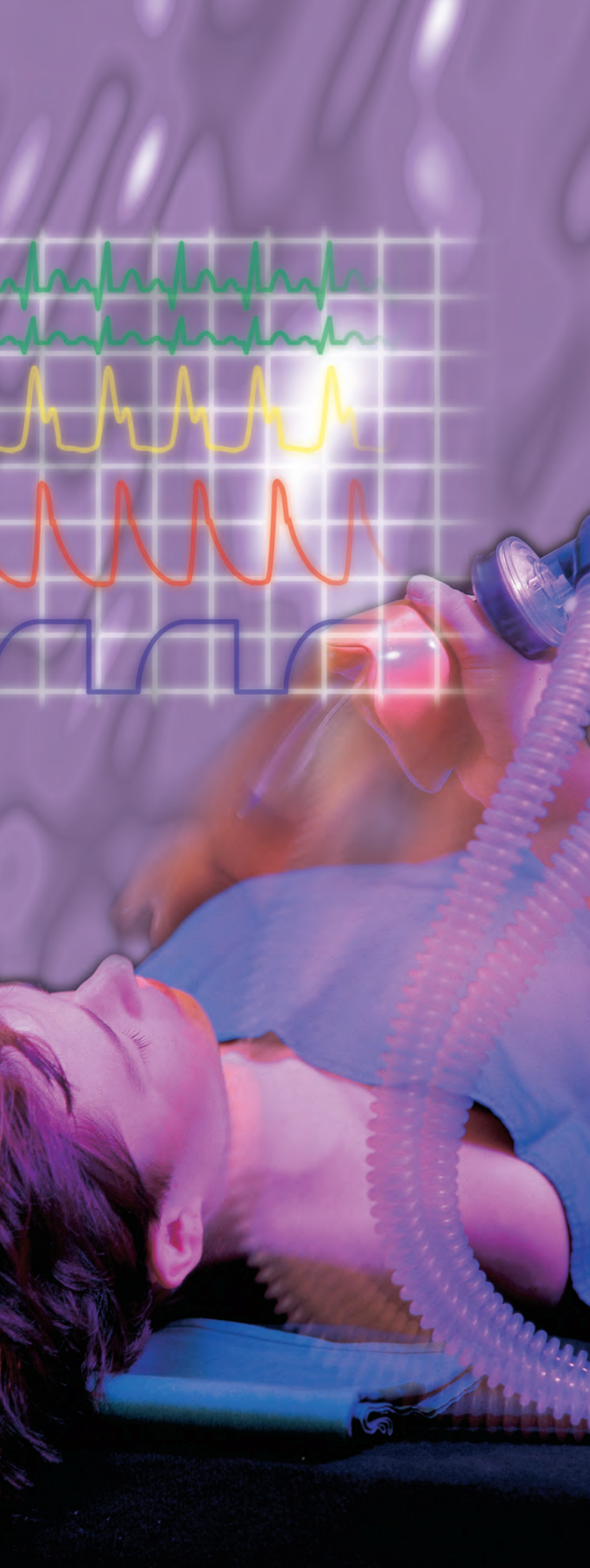
20x **Foam Plate**, size 75 x 150 mm, thickness 7 mm

2x **Rubber Diaphragm**

Syringe, 60 ml

Spare Parts for Aurical Reconstruction Trainer 50209 RT

- 50209 RTB **Base Plate**, with LUER-adaptor for creating a vacuum
- 50209 RFP **Foam Plate**, size 75 x 150 mm, thickness 7 mm
- 50209 RTR **Rubber Diaphragm**, for use with Base Plate 50209 RTB
- 50209 RTS **Syringe**, 60 ml



ANESTHESIOLOGY AND EMERGENCY MEDICINE

INTUBATION AND
BRONCHOSCOPY TRAINER 20

NAKHOSTEEN
BRONCHOSCOPY TRAINER 21

NAKHOSTEEN
PEDIATRIC BRONCHOSCOPY
TRAINER 22

INTUBATION AND BRONCHOSCOPY
TRAINER "NEONATAL" 23

SPARE PARTS AND
ACCESSORIES 24

Intubation and Bronchoscopy Trainer

Nasal and Oral Access

The training model offers the possibility to practice oral and nasal intubation on adult patients. This also includes simulation of the difficult airway.

Furthermore, it is possible to practice bronchoscopy for intensive care medicine, also with a diseased bronchial tree.

Individual consumables can be replaced after use or when worn.

Special Features:

- Training model for intubation in adult patients
- Replaceable bronchial tree for bronchoscopies
- Replaceable diseased bronchial tree
- Inflatable tongue for simulation of the difficult airway
- Nasal and oral access



10915 VB

10915 VB

Intubation Trainer, for adults, with intact (healthy) bronchial tree, equipped with rack, in a small bag, nasal and oral access

Further Bronchial Trees and Accessories see page 24

Intubation and Bronchoscopy Trainer

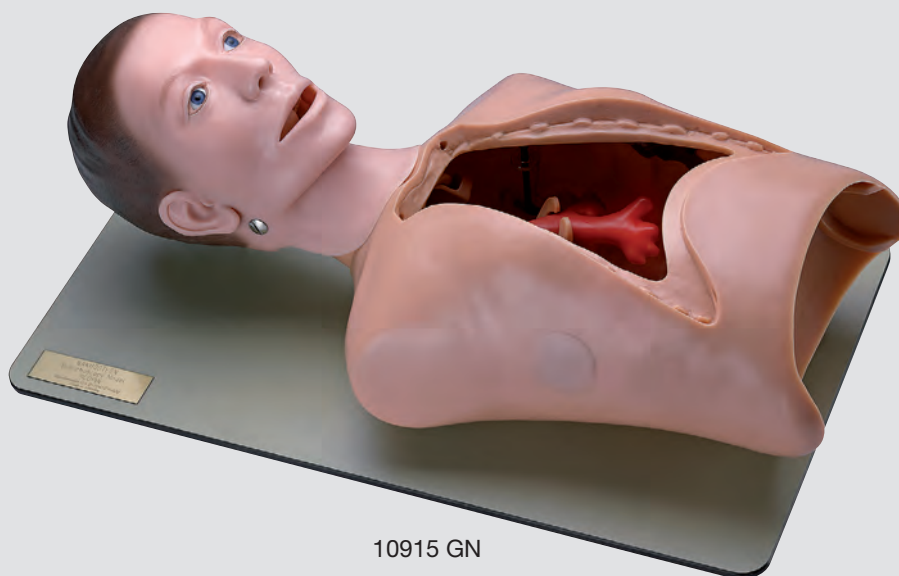
NAKHOSTEEN Bronchoscopy Trainer

The training model offers the possibility to practice oral and nasal intubation on adult patients. Furthermore, it may be used to practice bronchoscopies, also with a diseased bronchial tree.

Individual consumables can be replaced after use or when worn.

Special Features:

- Training model for rigid and flexible bronchoscopy
- Intubation under fiberoptic endoscopic control, both nasal and oral
- Laryngoscopic intubation
- Nasopharynx integrated with tracheal bronchial tree
- Anatomically correct reproduction of internal structures in nasal passages, pharynx and tracheo-bronchial system
- Removable sternum permits bronchoscope position check



10915 GN

10915 GN NAKHOSTEEN **Bronchoscopy Trainer**, Model II, with intact (healthy) bronchial tree, with rack

Further Bronchial Trees and Accessories see page 24

Intubation and Bronchoscopy Trainer

NAKHOSTEEN Pediatric Bronchoscopy Trainer

The training model offers the possibility to practice oral and nasal intubation on pediatric patients. This also includes simulation of the difficult airway.

Furthermore, it is possible to practice bronchoscopy for intensive care medicine.

Special Features:

- Training model for rigid and flexible pediatric bronchoscopy
- Fiberoptically controlled intubation, both nasal and oral
- Laryngoscopic intubation
- In case of incorrect intubation a warning sound is issued
- Integrated nasopharynx with tracheal bronchial tree
- Anatomically correct reproduction of internal structures in nasal passages, pharynx and tracheo-bronchial system
- Removable sternum permits endoscope position check



10915 F

10915 F NAKHOSTEEN **Bronchoscopy Trainer**, Model "Broncho-Boy Junior", with intact (healthy) bronchial tree, with rack

Intubation and Bronchoscopy Trainer

“Neonatal”, Nasal and Oral Access

The training model offers the possibility to practice oral and nasal intubation on neonatal patients. This also includes simulation of the difficult airway.

Furthermore, it is possible to practice bronchoscopy for intensive care medicine.

Special Features:

- Training model for intubation on neonatal patients
- Nasal and oral access
- Removable sternum permits tube position check



10915 E

10915 E

Intubation Trainer, “Neonatal”, nasal and oral access

Spare Parts for Intubation Trainer 10915 VB

- 10915 VB1 **Bronchial Tree**, pathophysiological, with pathological lesions and possibility of biopsy
- 10915 VB2 **Bronchial Tree**, physiological
- 10915 VBM9 **Bag**

Spare Parts for Bronchoscopy Trainer 10915 GN

- 10915 K **Bronchial Tree**, diseased
- 10915 H **Carrying Case**
- 10915 L **Bronchial Tree**, fluorescent
- 10915 T **Chest Lid**
- 10915 J **Bronchial Tree**, intact (healthy)



THORAX

NAKHOSTEEN BRONCHOSCOPY TRAINER	30
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NAKHOSTEEN PEDIATRIC BRONCHOSCOPY TRAINER	31
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Intubation and Bronchoscopy Trainer

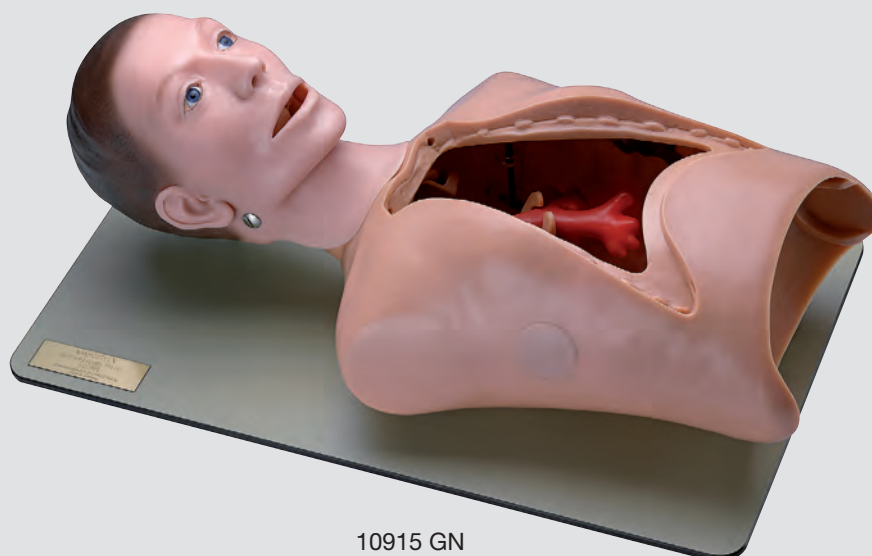
NAKHOSTEEN Bronchoscopy Trainer

The training model offers the possibility to practice oral and nasal intubation on adult patients. Furthermore, it may be used to practice bronchoscopies, also with a diseased bronchial tree.

Individual consumables can be replaced after use or when worn.

Special Features:

- Training model for rigid and flexible bronchoscopy
- Intubation under fiberoptic endoscopic control, both nasal and oral
- Laryngoscopic intubation
- Nasopharynx integrated with tracheal bronchial tree
- Anatomically correct reproduction of internal structures in nasal passages, pharynx and tracheo-bronchial system
- Removable sternum permits bronchoscope position check



10915 GN

10915 GN NAKHOSTEEN **Bronchoscopy Trainer**, Model II, with intact (healthy) bronchial tree, with rack

Further Bronchial Trees and Accessories see page 32

Intubation and Bronchoscopy Trainer

NAKHOSTEEN Pediatric Bronchoscopy Trainer

The training model offers the possibility to practice oral and nasal intubation on pediatric patients. This also includes simulation of the difficult airway.

Furthermore, it is possible to practice bronchoscopy for intensive care medicine.

Special Features:

- Training model for rigid and flexible pediatric bronchoscopy
- Fiberoptically controlled intubation, both nasal and oral
- Laryngoscopic intubation
- In case of incorrect intubation a warning sound is issued
- Integrated nasopharynx with tracheal bronchial tree
- Anatomically correct reproduction of internal structures in nasal passages, pharynx and tracheo-bronchial system
- Removable sternum permits endoscope position check



10915 F

10915 F NAKHOSTEEN **Bronchoscopy Trainer**, Model "Broncho-Boy Junior", with intact (healthy) bronchial tree, with rack

Spare Parts for Bronchoscopy Trainer 10915 GN

10915 K	Bronchial Tree , diseased
10915 H	Carrying Case
10915 L	Bronchial Tree , fluorescent
10915 T	Chest Lid
10915 J	Bronchial Tree , intact (healthy)



LAPAROSCOPY IN SURGERY, GYNECOLOGY, UROLOGY

SZABO-BERCI-SACKIER
LAPAROSCOPIC TRAINER 34

BITTNER
TRAINING MODEL 35

ENDOSCOPIC SURGERY TRAINER
“SURGERY”, “GYNECOLOGY” 36

TRAINING MODEL FOR LAPAROSCOPIC
SURGERY, EUROPEAN ACADEMY OF
GYNAECOLOGICAL SURGERY (EAGS)
MODEL 37

SZINICZ
LAPAROSCOPIC TRAINER 38

LYRA
LAPAROSCOPIC SIMULATOR 39

SPARE PARTS AND
ACCESSORIES 40

SZABO-BERCI-SACKIER Laparoscopic Trainer

The SZABO-BERCI-SACKIER laparoscopic trainer is designed to simulate various laparoscopic procedures, especially the different suturing techniques. It contains diaphragms at the typical puncture sites and a flexible endoscope holder that provides the surgeon with the

ability to manipulate instruments with both hands. The SZABO-BERCI-SACKIER laparoscopic trainer can be used to practice the surgical skills necessary to complete a successful laparoscopic procedure.

Special Features:

- For practicing various laparoscopic interventions and suturing techniques
- Endoscope holder allows laparoscopic training with both hands



26348

26348

SZABO-BERCI-SACKIER Laparoscopic Trainer

BITTNER Training Model

for hernia surgery

Pre-operating room training using training models or computer simulation is gaining increasing importance, not least due to reduced working time.

The hernia training model illustrated here was developed on the basis of a pelvis specimen cast during cadaver surgery following full dissection of the entire pelvic region. Consequently, the training model represents the exact anatomical size of the human pelvis. All important anatomical landmarks (epigastric vessels, iliac vessels, symphysis and COOPER's ligament, inguinal nerves, ileopubic tract, internal inguinal ring) are represented in a schematic diagram.

This model is ideal for the practice training of the following surgical stages in both laparoscopic (TAPP) and endoscopic (TEP, steps 2 and 3) hernioplasty:

1. Opening the peritoneum
2. Implantation of a mesh size 10 x 15 cm
3. Fixation of the mesh
4. Closure of the peritoneum through suturing

Furthermore, the training model enables a test run to be performed in order to evaluate the user-friendliness of various meshes and fixation techniques.

Prof. Dr. med. R. BITTNER

Special Features:

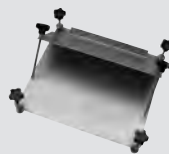
- Model represents the exact anatomical size of the human pelvis
- All important anatomical landmarks shown



BITTNER hernia training model, with SZABO-BERCI-SACKIER laparoscopic trainer



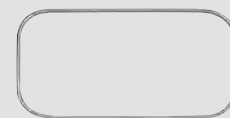
26342 M



26342 U



26342 P



26342 B

- 26342 M **BITTNER Hernia Model**, silicone model for training of mesh fixation in laparoscopic inguinal hernia repair (TAPP/TEP method)
- 26342 U **Support Frame**, for positioning Hernia Model 26342 M in Laparoscopic Trainer 26348
- 26342 P **Peritoneum Replacement Foil**, package of 50
- 26342 B **Fixation Aid**, for fixating Peritoneum Replacement Foil 26342 P to BITTNER Hernia Model 26342 M

Endoscopic Surgery Trainer

The endoscopic surgery trainer is available in two different types for general surgery and gynecology. Since these two disciplines usually require trocar insertion at different puncture sites, the two models are supplied with different top plates. Foam rubber diaphragms are inserted into the four puncture sites to guide the trocars.

Both models are equipped with a working plate to which a training module or other appropriate training objects can be attached. The endoscopic surgery trainer is supplied in a case and can be disassembled easily. Worn parts can, of course, be re-ordered individually.



26332 B

26332 A **Endoscopic Surgery Trainer "SURGERY" Model**

including:

Base Plate

"SURGERY" Top Plate

Working Plate

Training Module

Fixation Clamps, package of 2

Silicone Insert, package of 4

Case

"SURGERY" Drape

26332 B **Endoscopic Surgery Trainer "GYNECOLOGY" Model**

including:

Base Plate

"GYNECOLOGY" Top Plate

Working Plate

Training Module

Fixation Clamps, package of 2

Silicone Insert, package of 4

Case

"GYNECOLOGY" Drape

Training Model for Laparoscopic Surgery

European Academy of Gynecological Surgery (EAGS) Model



26332 N

- 26332 N **Training Model for Laparoscopic Surgery, EAGS model**
including:
Base Plate
Top Plate, EAGS model
Foam Rubber Insert, package of 8
Case
Drape

Please Note:

LASTT (The Laparoscopic Skills Testing and Training model) wooden models are available via EAGS (www.theacademyhouse.org)

SZINICZ Laparoscopic Trainer

Simulation Trainer with Pulsating Organ Perfusion (P.O.P.)

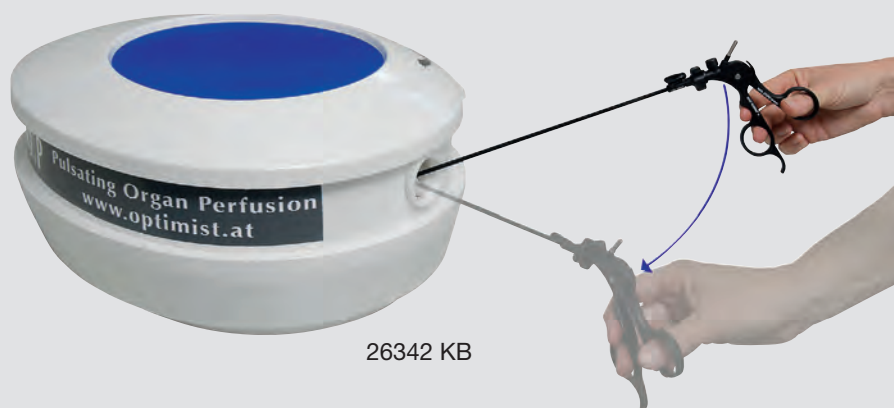
Pulsating Organ Perfusion (P.O.P.)

Pulsating organ perfusion was developed for the simulation of techniques used in minimally invasive surgery

and opens up new possibilities in laparoscopy or thoracoscopy training.

Special Features:

- Realistic training with animal organs or organ complexes
- Simulation of parenchymatous, capillary and venous hemorrhages makes it possible to learn standard interventions and to master (hemorrhagic) complications
- Laparoscopic operations (liver, gallbladder, small intestine, colon, spleen, etc.)
- Thoracic surgery (heart, lungs, aorta)
- Anastomosis of the gastro-intestinal tract (both laparoscopic and open surgery)
- Urological minimally invasive surgery (kidney, ureter, adrenal, etc.)
- Gynecological minimally invasive surgery (adnexae, cysts, etc.)
- Mastering complications
- Team training



26342 KB

SZINICZ **Laparoscopic Trainer, DOCK SYSTEM**, with pulsating organ perfusion, complete, with mains adaptor 230 VAC, 50/60 Hz

LYRA Laparoscopic Simulator

ProDelphus Laparoscopy Trainer

Laparoscopy trainers are now being used throughout the world to teach minimally invasive surgical skills as the use of human and animal cadavers may be only possible to a limited extent in many countries for ethical and financial reasons.

The ProDelphus trainer is made of Neoderma. “Surgical Neoderma” is a malleable, cost-effective, atoxic and moldable material. Furthermore, it does not compromise the quality of instruments (telescopes, forceps etc.).

If the trainer is used at moderate temperatures (between 18 and 32 °C) in a dry room, the material can last up to 2 years. A mixture of various polymers contains 36 different materials that can be used to replicate almost all human organs. This is why the ProDelphus trainer is considered to be one of the best pelvic trainers available.

*Prof. L. MENCAGLIA,
Oncological Center of Florence, Italy*

Special Features:

- The trainer consists of a body simulator and several organs made of surgical Neoderma, providing a feeling of authenticity
- The replicated peritoneum and abdominal wall allows for training with instruments under realistic conditions



26344 L2



26344 L2

LYRA Laparoscopic Simulator, for laparoscopic and robot-assisted surgery, including the urinary tract, complete

including:

LYRA Body Laparoscopic Simulator

Neoderma Organ, liver

Neoderma Organ, spleen

Neoderma Organ, stomach

Neoderma Organ, peritoneum

Neoderma Organ, bowel

Neoderma Organ, abdominal wall

Neoderma Organ, cul-de-sac

Neoderma Organ, vaginal block

Neoderma Organ, uterus

Neoderma Suturing Model, basic training

Spare Parts and Accessories

Spare Parts and Accessories for LYRA Laparoscopic Simulator 26344 L2

- | | |
|----------|---|
| 26344 LE | Neoderma Organ Insert , abdominal wall |
| 26344 LF | Neoderma Organ Insert Set , with bowels and organs |



GYNECOLOGY

GYNTRAINER 42-44

PORTABLE GYNTRAINER 45-46

TRAINING WORKSTATIONS:
THE CONCEPT OF THE “EUROPEAN
ACADEMY OF GYNAECOLOGICAL
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LYRA HYSTERO-TRAINER “EVA II” 50

HYSTT MODEL (HYSTEROSCOPIC
SKILLS TRAINING AND TESTING) 51

E-KNOT TRAINER 52

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ACCESSORIES 53

GynTrainer

The virtual high-end platform for the safe training of gynecological diagnosis and therapy



The KARL STORZ GYNTRAINER for gynecology offers novice and experienced surgeons a modern and comprehensive training system for diagnostic and therapeutic interventions. It provides training in basic skills such as hand-eye coordination and diagnostic hystero-

scopy or entire procedures such as, for example, polyp removal, myomectomy or endometrial ablation.

Original working elements and other operating instruments provide a highly realistic simulation experience and facilitate familiarization with surgical instruments.

Special Features:

- Constantly available training solutions in a completely risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- The digital mentor allows independent yet guided training
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments



MULTITRAINER – the high-end platform for safe training in gynecology, urology and arthroscopy
see chapter 13, MULTITRAINER

GynTrainer

The virtual high-end platform for the safe training of gynecological diagnosis and therapy

The GYNTRAINER features:

- Anatomical pelvis model for realistic tactile feedback
- Inlet and outlet valves on the instrument for fluid control
- Working element for HF surgery
- 3 virtual telescopes: 0°, 12° and 30°
- High-end PC and 23" monitor with multi-touch screen, mouse, keyboard
- Mobile cart with height-adjustable monitor



573620

573620 **Stationary GYNTRAINER**, with passive working element, in a reusable transport box

573621 **Same**, in single use packaging

Additional Software Packages

573223 **GYN Advanced Hysteroscopy Module** including:

Hysteroscope, for GYNTRAINER

Grasper/Punch, for GYNTRAINER

573224 **GYN Advanced Resection Module**

Diagnostic Hysteroscopy

12* virtual patients with various pathologies and levels of difficulty offer the user the possibility to practice with telescopes with different directions of view and to gain experience.

Learning Objectives:

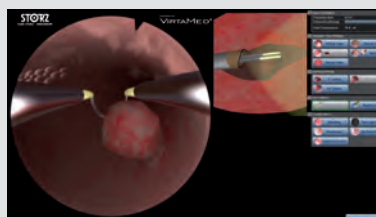
- To correctly position and navigate the hysteroscope
- To establish uterine distension and to improve viewing conditions by means of fluid management
- To inspect the entire uterine cavity and to describe visible pathologies

Polyp Removal

8* virtual patients with various polyps in multiple locations provide training for the first steps in operative hysteroscopy using a loop electrode.

Learning Objectives:

- To inspect the entire uterine cavity and to describe visible pathologies
- To resect polyps using the loop electrode
- To completely remove polyps while preserving healthy tissue



Myomectomy

Resection of 8* different types of intrauterine fibromas (type 0) in challenging positions and with different levels of difficulty.

Learning Objectives:

- To inspect the entire uterine cavity and to describe visible pathologies
- To resect the myoma in small fragments; safe handling of the loop electrode
- To coagulate sources of bleeding

Endometrial Ablation with the Rollerball

4* virtual patients with varying shapes of uterine cavities offer the possibility to gain practice in HF surgery in challenging locations in the uterus.

Learning Objectives:

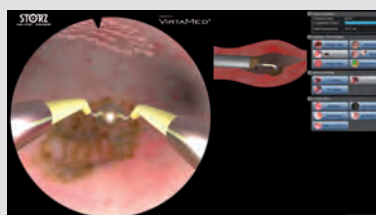
- To inspect the entire uterine cavity and to describe visible pathologies
- To ablate the entire endometrial surface in a safe and systematic way

Module for Advanced Hysteroscopic Resection

4* virtual patients for advanced hysteroscopy provide surgical situations with adhesions, a septum and complex fibromas (types 0, I and II).

Learning Objectives:

- To remove the intramural parts of a fibroma and to re-establish the uterine cavity without perforation with the resection instrument
- Parameters established by experts offer an objective feedback for maximum learning efficiency



* The number of patient cases may change due to further development of the product.

Portable GynTrainer

The mobile high-end solution for safe training in gynecology

The portable GYNTRAINER from KARL STORZ offers novice and experienced surgeons a modern and comprehensive training system for minimally invasive surgery. It provides training in basic skills such as hand-

eye coordination and diagnostic hysteroscopy as well as entire procedures such as, for example, polyp removal, myomectomy or endometrial ablation.

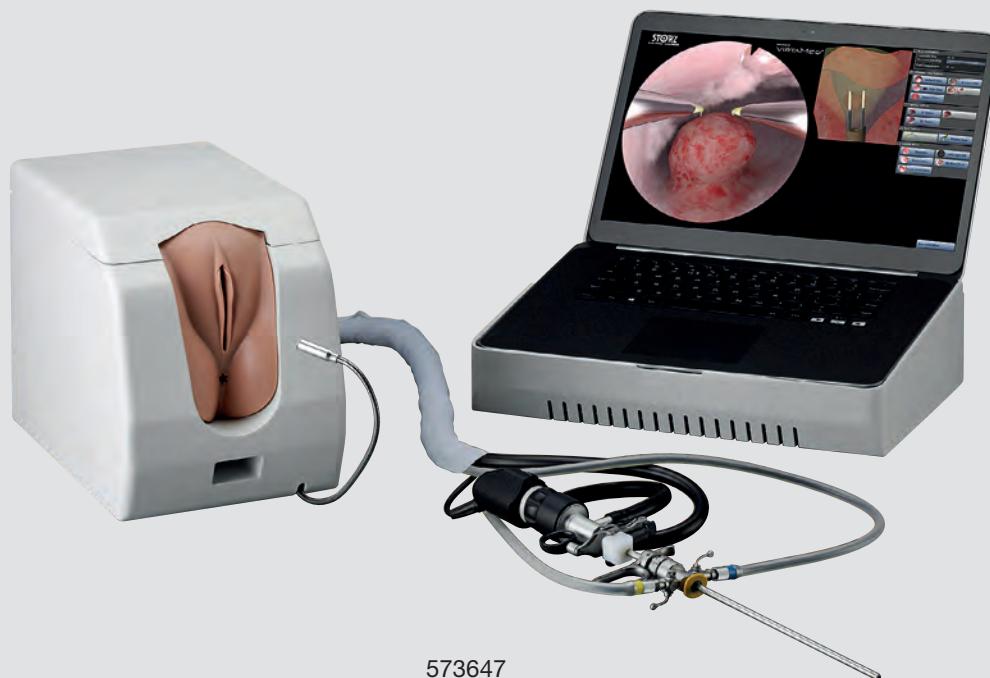
Special Features:

- Constantly available training solutions in a completely risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments
- In a practical trolley, can be checked in as flight luggage



Portable GynTrainer

The mobile high-end solution for safe training in gynecology



573647

573647

Portable GYNTRAINER, with anatomical uterus model, passive working element and software modules, in a practical trolley, can be checked in as flight luggage including:

- Integrated Learning Management System**
- High-End Laptop with 17" Multi Touch Screen**
- Software**
- Mouse**
- Laptop Power Supply**
- USB Cable**
- Anatomical Uterus Model**
- Passive Resectoscope for GYNTRAINER**
- Tenaculum for GYNTRAINER**
- Speculum for GYNTRAINER**
- Transport Case**

Additional Software Packages

573223

GYN Advanced Hysteroscopy Module

including:

- Hysteroscope**, for GYNTRAINER
- Grasper/Punch**, for GYNTRAINER

573224

GYN Advanced Resection Module

Training Workstations: The Concept of the “European Academy of Gynaecological Surgery (EAGS)”

Scientific evidence indicates that dry lab training for endoscopic surgical skills, in contrast to direct training in the operating room, substantially improves patients' post-operative well-being. Six leading professional organizations in gynecology – ESGE, EBCOG, EAGS, ENTOG, ACOG and AAGL – joined forces in a global recommendation regarding endoscopic surgical training and quality assurance.

It is a major breakthrough in the discipline of gynecological endoscopic training to align the leading societies in training and education across Europe and the US on such an important matter. The ESGE (European Society for Gynaecological Endoscopy), in collaboration with the “European Academy of Gynaecological Surgery (EAGS)”, has developed the diploma curriculum called GESEA – Gynaecological Endoscopic Surgical Education and Assessment, taking into account this recommendation.

The most important aspect throughout this program is the practice of training and testing, leading to greater levels of competence and professionalism prior to entering the operating room. Although many systems, including animal models and simulators, have been

proposed, the real requirement was for an in-house, structured and validated method which would also be easy to implement. Therefore, a training model suitable for training specific laparoscopic skills, monitoring the learning process and measuring the skill level at a particular moment was developed and its face, content and construct validities were evaluated. This is known as the LASTT (Laparoscopic Skills Training and Testing) with OSP (Online Scoring Platform) reporting tool.

The LASTT package provides a validated practical and theoretical test for basic laparoscopic instrument handling skills like camera navigation, hand-eye coordination and bimanual coordination. The OSP provides a reporting and documentation module with a 1 year license and unlimited reports.

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Gynaecological Surgery (EAGS)
Clinical Director, Institute for
Fertility and Embryology (LIFE)
Leuven, Belgium
<http://www.europeanacademy.org>*



Accessories



26348

- 26348 SZABO-BERCI-SACKIER **Laparoscopic Trainer**
- TP 100EN **TELE PACK X LED**, endoscopic video unit for use with all TELECAM one-chip camera heads and video endoscopes, incl. LED light source similar to Xenon technology, with integrated digital Image Processing Module, 15" LCD TFT monitor with LED backlight, USB/SD memory module, color systems PAL/NTSC, power supply 100 – 240 VAC, 50/60 Hz
- 20 2120 30 **TELECAM One-Chip Camera Head**, color system PAL, soakable, gas-sterilizable, with integrated Parfocal Zoom Lens, f = 25 – 50 mm (2x), 2 freely programmable camera head buttons
- 20 2121 30 **Same**, color system NTSC
- 26003 AA **HOPKINS® Straight Forward Telescope 0°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26003 BA **HOPKINS® Forward-Oblique Telescope 30°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red
- 26173 KPF **KOH Macro Needle Holder**, with tungsten carbide insert, ergonomic pistol handle, with disengageable ratchet, ratchet position left, jaws straight, size 5 mm, length 33 cm
- 26173 KAF **KOH Macro Needle Holder**, with tungsten carbide insert, ergonomic straight handle, with disengageable ratchet, ratchet position right, jaws straight, size 5 mm, length 33 cm
- 33321 MD **CLICKline® KELLY Dissecting and Grasping Forceps**, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, size 5 mm, length 36 cm
- 33321 KW **CLICKline® MATKOWITZ Grasping Forceps**, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, size 5 mm, length 36 cm
- 34321 MS **CLICKline® METZENBAUM Scissors**, rotating, dismantling, insulated, with connector pin for unipolar coagulation, with LUER-Lock irrigation connector for cleaning, double action jaws, curved, length of jaws 15 mm, size 5 mm, length 36 cm
- 495 NCS **Fiber Optic Light Cable**, with straight connector, extremely heat-resistant, enhanced light transmission, diameter 4.8 mm, length 250 cm

LASTT Model

Laparoscopic Skills Training and Testing

The LASTT training package: Laparoscopic skills training and testing method measuring 3 practical laparoscopic psychomotor skills: The first exercise measures the ability of a person to navigate the camera and to handle the 30° telescope whereby 14 targets have to be identified in a precise order. The second exercise measures the hand-eye coordination by positioning 6 small rings over a nail and the last exercise

measures the bimanual coordination by transporting 6 objects from one hand to the other and then in a corresponding hole. Test proficiency should guarantee the perfect laparoscopic instrument handling capabilities.

The individual scores can be reported on the Online Scoring Platform (OSP).



26432

26432

LASTT Training Set

including:

LASTT Model

Training Inserts (1 set)

Training Elements (2 sets)

Stopwatch

Manual and Documents

LASTT Training DVD

LYRA Hystero-Trainer “EVA II”

The LYRA “EVA II” Hystero-Trainer provides an exceptionally natural training sensation for both diagnostic (office) and operative hysteroscopy. The vagina and uterine models made from Neoderma as well as a uterus from animal tissue can be used for the exercises. The continuous training of hysteroscopy (diagnostic and operative) enables the surgeon to improve both hand-eye coordination and surgical skills.

In the case of diagnostic (office) hysteroscopy, the LYRA “EVA II” hystero-trainer offers the possibility to learn atraumatic approaches to the uterine cavity without a speculum or tenaculum (vaginocervico hysteroscopy). The use of Neoderma uterine models allows a true-to-

life introduction of the hysteroscope. In addition to pure diagnostic hysteroscopy, smaller procedures such as biopsy removal, septum dissection or polypectomy can also be simulated.

For the training of operative hysteroscopy (resection), a Neoderma uterine model is used for biological implants or a specimen from animal tissue. This enables the training of electrosurgical procedures such as, for example, the resection of polyps and fibroids or endometrial ablation. In addition to unipolar or bipolar resectoscopes, the Intrauterine BIGATTI Shaver (IBS®) can be employed which allows a purely mechanical resection without HF current.



26343

26343

LYRA Hysteroscopy Trainer “EVA II”

including:

Neoderma Uterus, with two polyps

Neoderma Uterus, with septum and polyps,
for the BETTOCCHI® technique

Neoderma Uterus, with septum, without polyps,
for the BETTOCCHI® technique

Vaginal Block, for biological organ structures/uteri

Vaginal Block, for artificial uteri (Neoderma)

Neutral Electrode, for unipolar use

Neoderma Uterus, for biological implants

Base Body

HYSTT Model

Hysteroscopic Skills Training and Testing

The HYSTT training package, which includes 10 uteri (5x for each exercise), is used for the training and testing of two hysteroscopic psychomotor skills. The first exercise focuses on psychomotor skills for camera navigation. Here the trainee is instructed to correctly visualize a specific character from an indicated

position within the HYSTT model on the endoscopic monitor. The second exercise focuses on instrument handling and hand-eye coordination skills whereby the trainee is instructed to grasp and extract 14 pin objects out of the HYSTT model. The individual scores can be reported on the Online Scoring Platform (OSP).



26435

HYSTT Training Set

including:

Female Genital Model, with table fixation

5x **HYSTT Models**, exercise 1

5x **HYSTT Models**, exercise 2

100x **Pin**

Stopwatch

E-Knot Trainer

The E-Knot trainer is a pelvic trainer developed by the Academy of Gynaecological Surgery (EAGS) that can be used at any location, offering the possibility to train

suturing skills. The E-Knot trainer is designed for individual use. No further equipment besides a laptop and sutures is required.



26433

E-Knot Trainer, with 2 needle holders
including:
Neoderma Suturing Pad
Webcam, for connection to PC
2x Training DVD
Needle Holder Set, for training, package of 2

26434

E-Knot-Trainer
including:
Neoderma Suturing Pad
Webcam, for connection to PC
2x Training DVD

Please note:

The E-Knot trainer can be used with any laptop which contains a USB port.
The displayed laptop is not included in the delivery of items 26433 and 26434.

Spare Parts for LYRA Hysteroscopy Trainer “EVA II” 26343

26343 A1	Neoderma Uterus , with two polyps
26343 A2	Neoderma Uterus , with septum and polyps, for the BETTOCCHI® technique
26343 A3	Neoderma Uterus , with septum without polyps, for the BETTOCCHI® technique
26343 B	Vaginal Block , for biological organ structures/uteri
26343 C	Vaginal Block , for artificial uteri (Neoderma)
26343 D	Neutral Electrode , for unipolar use
26343 F	Neoderma Uterus , for biological implants
26343 X	Base Body



UROLOGY

UROTRAINER 56-58

PORTABLE UROTRAINER 59-60

LYRA TUR TRAINER "ADAM" 61

LYRA URS TRAINER "ADAM" 62

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ACCESSORIES 63

UroTrainer

The virtual high-end platform for the safe training of transurethral surgical procedures



The KARL STORZ UROTRAINER for urology offers both novice and experienced surgeons a modern and comprehensive training system for minimally invasive surgery. It provides training in basic skills such as hand-eye coordination and diagnostics as well as entire

procedures such as, for example, the transurethral resection of bladder tumors (TURB) or prostate (TURP).

Original working elements and other operating instruments provide a highly realistic simulation experience and facilitate familiarization with surgical instruments.

Special Features:

- Constantly available training solutions in a completely risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- The digital mentor allows independent yet guided training
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments



MULTITRAINER – the high-end platform for safe training in gynecology, urology and arthroscopy
see chapter 13, MULTITRAINER

UroTrainer

The virtual high-end platform for the safe training of transurethral surgical procedures

The UROTRAINER features:

- Simbox, for tactile force feedback
- In- and outlet valves on the instrument for fluid handling
- Working element for HF surgery
- 3 virtual telescopes: 0°, 12° and 30°
- High-end PC and 23" monitor with multi touch screen, mouse, keyboard
- Mobile cart with height-adjustable monitor



573630 **Stationary UROTRAINER**, with passive and active working element, instruments and software module, in a reusable transport box, ideal for use at conferences, workshops and training centers

including:

Integrated Learning Management System

High-End PC and 23" Multi Touch Screen

Mobile Cart, with height-adjustable monitor

Cleaning Box

Software

Wireless Keyboard

Mains Cord

USB Cable

Simbox for UROTRAINER

Passive Resectoscope for UROTRAINER

Active Resectoscope for UROTRAINER

Advanced TURB Module UROTRAINER

Advanced TURP Module UROTRAINER, passive

Transport Case

573631 **Same**, in single use packaging

TURP Basic Module

8* virtual patients provide basic skills training in preparation for complete TURP procedures. Trainees learn how to visualize important landmarks, to control bleeding, and take their first steps in prostatic tissue resection.

Learning Objectives:

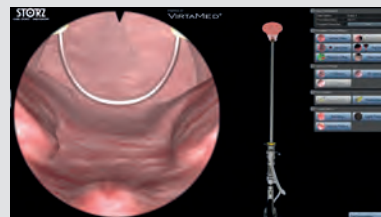
- To understand the anatomy and pathology of a prostate
- To gain experience in identifying anatomical landmarks
- To acquire depth perception and hand-eye coordination
- To control bleeding and irrigation/flow during the procedure
- To learn to handle the resectoscope and the loop electrode correctly
- To safely perform a partial TURP procedure while mastering the instruments

TURP Advanced Module

8* virtual patients for practicing full transurethral prostate resections with increasing difficulty. Prostate sizes range from 55 grams to 90 grams.

Learning Objectives:

- To establish a mental picture of the anatomy and pathology of a prostate
- To gain experience in identifying anatomical landmarks
- To control bleeding and irrigation/flow during the procedure
- To perform effective TURP procedures
- To master instruments in a safe manner
- To understand the difference between prostatic tissue and healthy capsule
- To manage complications during a BPH procedure

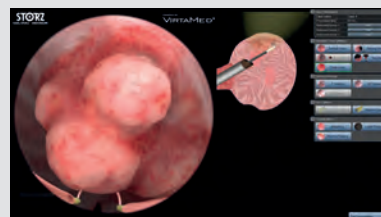


TURB Basic Module

4* virtual patients with multiple papillary and solid tumors offer the trainee the opportunity to perform a full transurethral resection of bladder tumors (TURB).

Learning Objectives:

- To gain experience in identifying anatomical landmarks
- To acquire depth perception and hand-eye coordination
- To remove bladder tumors in various locations, ranging from easily accessible to difficult-to-reach locations
- To control bleeding and irrigation/flow during the procedure
- To avoid perforating the thin bladder wall
- To manage complications



* The number of patient cases may change due to further development of the product.

Portable UroTrainer

The mobile high-end solution for safe training in urology

The portable UROTRAINER from KARL STORZ offers both novice and experienced surgeons a modern and comprehensive training system for minimally invasive surgery. It provides training in basic skills such as hand-

eye coordination and diagnostics as well as entire procedures such as, for example, the transurethral resection of bladder tumors (TURB) or prostate (TURP).

Special Features:

- Constantly available training solutions in a completely risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments
- In a practical trolley, can be checked in as flight luggage



Portable UroTrainer

The mobile high-end solution for safe training in urology



573636

573636

Portable UROTRAINER, with Simbox for tactile force feedback, active and passive resectoscope and software module, in a practical trolley, can be checked in as flight luggage

including:

Integrated Learning Management System

High-End Laptop with 17" Multi Touchscreen

Software

Mouse

Laptop Power Supply

USB Cable

Simbox for UROTRAINER

Mains Cord for Simbox

Passive Resectoscope for UROTRAINER

Active Resectoscope for UROTRAINER

Advanced TURB Module UROTRAINER

Advanced TURP Module UROTRAINER, passive

Transport Case

New Training Platform for TUR

KARL STORZ is now extending its offer of training possibilities with a training platform for TUR.

The basic model features a new design that allows work similar to reality. Factors that were taken into consideration were the training of the basic resection movements as well as external influences such as the

introduction and external support and/or fixation of the instruments under real-life circumstances.

The resection of, for example, potatoes or apples represents a cost-effective solution and enables authentic resection with good resection properties.

The TUR trainer platform “ADAM” offers the following training possibilities:

- Training for rigid and flexible treatment of the entire urinary tract via:
 - Rigid cystoscopy
 - Flexible cystoscopy
- Simulates a wide range of indications and treatment options:
 - TURP
 - TURB
 - Treatment of tumors



27345 TUR

27345 TUR LYRA Endourological TUR Trainer “ADAM”, complete including:
Organ Platform
Organ Insert Penis
Organ Insert Bladder
LYRA Body Endourological Trainer “ADAM”

The proven LYRA URS trainer platform offers the following training possibilities:

- Training for rigid and flexible treatment of the entire urinary tract via:
 - Rigid URS
 - Flexible URS
- Simulates a wide range of indications and treatment options:
 - Kidney stones
 - Stone extraction
 - LASER stone treatment
 - Pneumatic lithotripsy



27345 URS

- 27345 URS LYRA **Endourological URS Trainer “ADAM”**, complete including:
Organ Platform
Organ Insert
LYRA **Body Endourological Trainer “ADAM”**

Spare Parts for LYRA TUR Trainer “ADAM” 27345 TUR

- | | |
|---------|--|
| 27345 C | Organ Platform , for TUR and for use of biological specimens |
| 27345 D | Organ Insert Penis , for TUR |
| 27345 E | Organ Insert Bladder , for TUR |
| 27345 X | LYRA Body Endourological Trainer “ADAM” , consisting of base and upper part |

Spare Parts for LYRA URS Trainer “ADAM” 27345 URS

- | | |
|---------|--|
| 27345 A | Organ Platform |
| 27345 B | Organ Insert |
| 27345 X | LYRA Body Endourological Trainer “ADAM” , consisting of base and upper part |



PROCTOLOGY

TRAINING MODEL FOR TEO®
(TRANSANAL ENDOSCOPIC
OPERATIONS) 66-67

Training Model for TEO®

(Transanal Endoscopic Operations)

The Transanal Endoscopic Operations (TEO®) training model is specially designed for learning surgical instrument management in an easy and effective manner.

The training model can either be used with an intestinal training model with pathologies (optional) or with appropriate anatomical specimens.

Special Features:

- Specially designed for practicing Transanal Endoscopic Operations (TEO®)
- Suitable for use with an intestinal training model or appropriate anatomical specimens



Training Model for TEO® (Transanal Endoscopic Operations)



24941 WS

- 24941 WS **Training Model**, for TEO®
- 28272 MP **Holding Plate**, not for use in human medicine
- 28272 MC **C-Clamp**, not for use in human medicine



24941 DWS

- 24941 DWS **Intestinal Model**, with tumors

Note: The intestinal model is not suitable for HF applications.



ARTHROSCOPY AND SPORTS MEDICINE

ARTHROTRAINER 70-71

ARTHROTRAINER –
MODULES FOR THE KNEE 72

ARTHROTRAINER –
MODULES FOR THE SHOULDER 73

ARTHROTRAINER –
MODULES FOR THE HIP 74

ARTHROSCOPY MODELS 75-76

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ArthroTrainer

The virtual high-end platform for the safe training of diagnostic and surgical skills in arthroscopy



The KARL STORZ ARTHROTRAINER for arthroscopy offers both novice and experienced surgeons a modern and comprehensive training system for minimally invasive surgery. Training is provided in basic skills such as hand-eye coordination and diagnostic

tours as well as partial or entire procedures such as, for example, meniscectomy.

Original operating instruments provide a highly realistic simulation experience and facilitate familiarization with instruments.

Special Features:

- Constantly available training solutions in a risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- The digital mentor allows independent yet guided training
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments



MULTITRAINER – the high-end platform for safe training in gynecology, urology and arthroscopy
see chapter 13, MULTITRAINER

ArthroTrainer

The virtual high-end platform for the safe training of diagnostic and surgical skills in arthroscopy

The ARTHROTRAINER features:

- Anatomical knee model providing realistic tactile feedback
- Anatomical shoulder model providing realistic tactile feedback. The shoulder can be placed in the beach chair or lateral decubitus position
- Anatomical hip model providing realistic tactile feedback
- In- and outlet valves on the instrument for fluid handling
- Operating instruments: Arthroscope, grasping forceps/punch, shaver and palpation hook
- 3 virtual telescopes: 0°, 30° and 70°
- High-end PC and 23" monitor with multi touch screen, mouse, keyboard
- Mobile cart with height-adjustable monitor



573610

573610 **Stationary ARTHROTRAINER**, with anatomical knee and shoulder models, the shoulder can be placed in the beach chair or lateral cubitus position, in a reusable transport case, ideal for use at conferences, workshops and training centers including:

Integrated Learning Management System

High-end PC and 23" Multi Touch Screen

Mobile Cart, with height-adjustable monitor

Cleaning Box

Software

Wireless Keyboard

Mains Cord

Anatomical Knee Model

Anatomical Shoulder Model

Tool Set, with IMAGE1 S™ with ENDOCAMELEON®, grasping forceps/punch, DRILLCUT-X® and palpation hook

Transport Case

573613 **Same**, in single use packaging

573611 **Same**, with anatomical knee model, in a reusable transport case

573614 **Same**, with anatomical knee model, in single use packaging

573612 **Same**, with anatomical shoulder model, in a reusable transport case

573615 **Same**, with anatomical shoulder model, in single use packaging

573616 **Same**, with anatomical hip model, in a reusable transport case

573617 **Same**, with anatomical hip model, in single use packaging

Basic Module

12* guided training courses enable basic skills to be acquired that are integrated into a realistic simulation. Mastering these basic tasks enables surgeons to perform a complete arthroscopy in a more straightforward, efficient, and professional manner.

Learning Objectives:

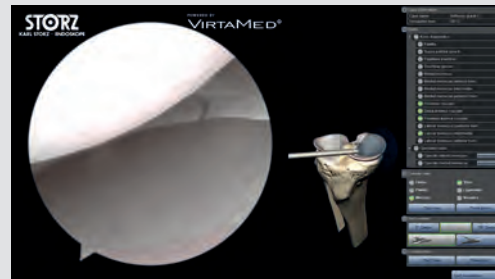
- To learn the correct way to perform a diagnostic tour
- To correctly handle the instruments without causing cartilage damage
- To detect and eliminate lesions and malformations in a safe and efficient manner
- To comprehend the concept of triangulation

Diagnostic Module

15* virtual patient cases with varying levels of difficulty offer the surgeon the opportunity to perform complete diagnostic arthroscopic interventions. Virtual patient cases include various meniscus lesions, unhappy triad and arthrosis grade I – III.

Learning Objectives:

- To inspect the knee completely and describe visible lesions
- To safely handle the instruments to avoid collisions with the tissue
- To gain confidence in systematic examination; inspection of all important features

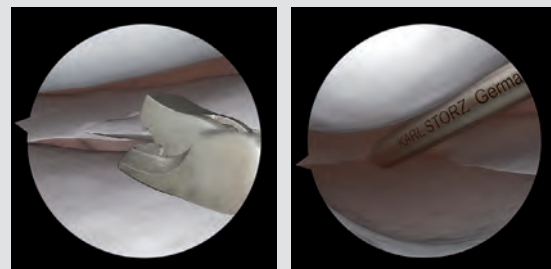


Therapeutic Module

14* virtual patients with lesions in various locations provide optimal training for first steps in operative arthroscopy – with real operating instruments. Interventions include meniscus lesions, synovial membrane inflammations and loose body removal.

Learning Objectives:

- To inspect the knee completely and describe visible pathologies
- To treat the diagnosed pathologies
- Loose body removal; analysis and review of the intervention



Expert-defined metrics provide objective feedback for all modules and thus offer the best learning outcomes.

* The number of patient cases may change due to further development of the product.

Basic Module

9* guided training courses enable basic skills to be acquired that are integrated into a realistic simulation. Mastering these basic tasks enables surgeons to perform a complete arthroscopy in a more straightforward, efficient, and professional manner

Learning Objectives:

- To learn the correct way to perform a diagnostic tour
- To correctly handle the instruments without causing cartilage damage
- To detect and eliminate lesions and malformations in a safe and efficient manner

Diagnostic Module

8* virtual patient cases with varying levels of difficulty offer the surgeon the opportunity to perform complete diagnostic arthroscopic interventions. Patient cases include lesions in the rotator cuff and the impingement syndrome.

Learning Objectives:

- To inspect the shoulder completely and describe visible lesions
- To safely handle the instruments to avoid collisions with the tissue



Therapeutic Module

3* virtual patients with lesions in various locations provide optimal training for first steps in operative arthroscopy – with real operating instruments. Patient cases include loose body removal, subacromial debridement and decompression.

Learning Objectives:

- To inspect the shoulder completely and describe visible pathologies
- To treat the diagnosed pathologies
- Loose body removal; analysis and review of the intervention



Expert-defined metrics provide objective feedback for all modules and thus offer the best learning outcomes.

* The number of patient cases may change due to further development of the product.

Basic Module

8* guided training courses enable basic skills to be acquired that are integrated into a realistic simulation. Mastering these basic tasks enables surgeons to perform a complete arthroscopy in a more straightforward, efficient, and professional manner.

Learning Objectives:

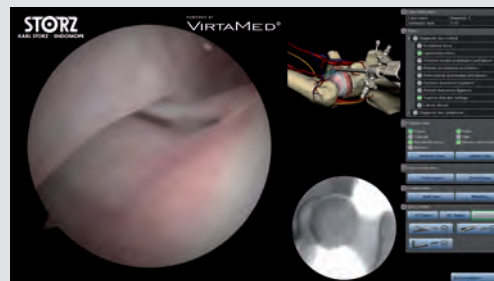
- To learn the correct way to perform a diagnostic tour
- To correctly handle the instruments without causing cartilage damage
- To detect and eliminate lesions and malformations in a safe and efficient manner
- To correctly handle a 70° telescope

Diagnostic Module

4* virtual patient cases with varying levels of difficulty offer the surgeon the opportunity to perform complete diagnostic arthroscopic interventions. Patient cases include various cartilage und labral lesions as well as femoral neck deformities.

Learning Objectives:

- To inspect the hip completely and describe visible lesions
- To correctly handle the instruments without causing cartilage damage
- To acquire secure knowledge of the anatomy; inspection of all important features

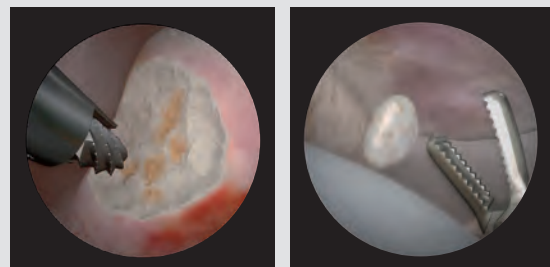


Therapeutic Module

2* virtual patients with lesions in various locations provide optimal training for first steps in operative arthroscopy – with real operating instruments. Interventions include the treatment of a CAM impingement and loose body removal.

Learning Objectives:

- To inspect the hip completely and describe visible pathologies
- To treat the diagnosed pathologies
- Loose body removal; analysis and review of the intervention



Expert-defined metrics provide objective feedback for all modules and thus offer the best learning outcomes.

* The number of patient cases may change due to further development of the product.

Arthroscopy Model

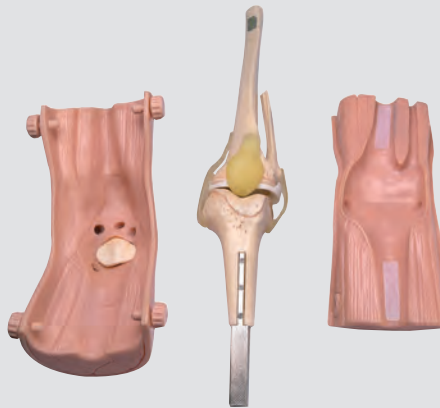
Knee model for diagnostic and operative demonstration

Special Features:

- The arthroscopy model can easily be opened by loosening the retaining screws
- Menisci, ligaments, patellas and HOFFA fatty tissue are easily exchanged
- Can also be used as a true-to-life and functional knee model



28186



28186 dismantled

28186

HENCHE Arthroscopy Model, dismantling, with exchangeable menisci and cruciate ligaments including:

Arthroscopy Model, basic unit

Set of Internal and External Menisci, with bucket-handle tear

Set of Inner and Outer Lateral Ligaments

Set of Anterior and Posterior Crucial Ligaments

HOFFA Fatty Tissue



28186 F

28186 F

Special Mounting Device, for attaching an arthroscopy model to a table

Arthroscopy Models

for teaching and training



28191

28191 **Arthroscopy Shoulder Joint Model**



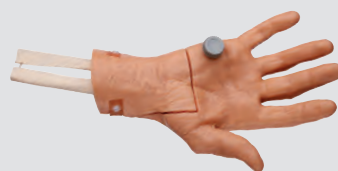
28192

28192 **Arthroscopy Elbow Joint Model**



28193

28193 **Arthroscopy Ankle Joint Model**



28194

28194 **Arthroscopy Wrist Joint Model**

Spare Parts for HENCHE Arthroscopy Model 28186

28186 AG	Arthroscopy Model , basic unit
28186 A	Set of Internal and External Menisci , with bucket-handle tear
28186 B	Set of Internal and External Lateral Ligaments
28186 C	Set of Anterior and Posterior Crucial Ligaments
28186 D	HOFFA Fatty Tissue



SPINE SURGERY

SPINE MODEL 80

SPARE PARTS AND
ACCESSORIES 81

This training model provides a convenient way of learning dorsal endoscopic approaches to the lumbar spine. The artificial skin can be transected similar to realistic surgical conditions. The muscle layer is then exposed.

Vertebrae L1 – L5 and the sacrum are located beneath the muscle layer. Segment L4 – L5 can be replaced after use.

Special Features:

- Exact reproduction of the anatomy of the lumbar and sacral spine
- Suitable for training interlaminar and intralaminar approaches to the disc
- Muscle layer and artificial skin allow for realistic surgical conditions
- Consumables can be replaced after use or when worn (vertebrae L4 – L5 with sacrum)



28198 LA

- 28198 LA **Spine Model**, complete including:
- Holder**
 - Vertebrae L1 – L3**, fixed
 - Vertebrae L4 – L5**, with sacrum
 - Muscle Layer**
 - Artificial Skin**

Spare Parts and Accessories

Spare Parts for Spine Model 28198 LA

28198 LB	Vertebrae L4 – L5, with sacrum
28198 LC	Muscle Layer
28198 LD	Artificial Skin



MULTITRAINER FOR GYNECOLOGY, UROLOGY, ARTHROSCOPY

MULTITRAINER 84-85

MultiTrainer

The virtual high-end platform for safe training in gynecology, urology and arthroscopy



KARL STORZ provides VR simulators for gynecology (GYNTRAINER), urology (UROTRAINER) and arthroscopy (ARTHROTRAINER). The KARL STORZ MULTITRAINER combines several disciplines in one platform and offers both novice and experienced surgeons a modern and

comprehensive training system for minimally invasive surgery. Training is provided in basic skills such as hand-eye coordination and diagnostic tours as well as the option to practice entire procedures such as, for example, polypectomy (GYN), TURP (URO) or meniscectomy (ART).

Special Features:

- Two to three disciplines can be practiced in alternation on one single platform
- Constantly available training solutions in a completely risk-free environment
- A high degree of realism thanks to original instruments and realistic patient cases
- The digital mentor allows independent yet guided training
- Reproducible and comparable tasks, including complication management
- Feedback report for the individual recording of performance parameters
- No consumables; no reprocessing of instruments



MultiTrainer

The virtual high-end platform for safe training in gynecology, urology and arthroscopy



573650

573650

Stationary MULTITRAINER, with anatomical knee and shoulder models, anatomical pelvis model and Simbox, in a reusable transport case. This system can be used as an ARTHROTRAINER, GYNTRAINER or UROTRAINER. Ideal for use at conferences, workshops and training centers

including:

Integrated Learning Management System

High-end PC and 23" Multi Touch Screen

Mobile Cart, with height-adjustable monitor

Cleaning Box

Software

Wireless Keyboard

Mains Cord

USB Cable

Anatomical Knee Model ARTHROTRAINER

Anatomical Shoulder Model ARTHROTRAINER, can be placed in a beach chair or lateral position

Anatomical Pelvis Model GYNTRAINER

Simbox UROTRAINER

IMAGE1 S™ with ENDOCAMELEON®

Grasping Forceps/Punch for ARTHROTRAINER

DRILLCUT-X®

Palpation Hook

Passive Resectoscope for GYNTRAINER

Tenaculum for GYNTRAINER

Speculum for GYNTRAINER

Passive Resectoscope for UROTRAINER

Active Resectoscope for UROTRAINER

Advanced TURB Module UROTRAINER

Advanced TURP Module UROTRAINER, passive

GYNTRAINER Basic Module, with pelvis model, passive

Transport Case

573653

Same, in single use packaging



Information on events is available on the KARL STORZ website
www.karlstorz.com

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KARL STORZ — ENDOSKOPE

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