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.

Any assumptions that competitors’ endoscopes and accessories are acquired from the same suppliers as the KARL STORZ products are not correct. Moreover, endoscopes and instruments provided by competitors are not manufactured according to the design specifications of KARL STORZ. This means it cannot be assumed that these endoscopes and accessories – even if they look identical on the outside – are constructed in the same manner and have been tested according to the same criteria.

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.

Original or Counterfeit

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
ANTERIOR SKULL BASE . . . . . . . . . . . . . . . . 4-5

“THE EGG” TRAINING MODEL . . . . . . . . . 6-7

MOBILE STANDARD RAIL . . . . . . . . . . . . . . . 8

SPARE PARTS AND
ACCESSORIES . . . . . . . . . . . . . . . . . . . . . . . . 9
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

including:
Insert
Head
Power Supply
Base
Joystick
Pump
Head Support
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

S.I.M.O.N.T. Head Model, for otorhino and skull base
including:
Insert
Head
Power Supply
Base
Joystick
Pump
Head Support
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

"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

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 and Accessories

#### Spare Parts for S.I.M.O.N.T. Head Model 28199 LC
- 28199 LCA  \( \text{S.I.M.O.N.T. Insert, cranial} \)
- 28199 LCB  \( \text{S.I.M.O.N.T. Head, cranial} \)
- 28199 LN   \( \text{S.I.M.O.N.T. Power Supply, 90 – 240 V} \)
- 28199 LB   \( \text{S.I.M.O.N.T. Base} \)
- 28199 LJ   \( \text{S.I.M.O.N.T. Joystick} \)
- 28199 LP   \( \text{S.I.M.O.N.T. Pump, peristaltic} \)
- 28199 LH   \( \text{S.I.M.O.N.T. Head Support} \)

#### Spare Parts for S.I.M.O.N.T. Head Model 28199 LS
- 28199 LSA  \( \text{S.I.M.O.N.T. Insert, for otorhino and skull base} \)
- 28199 LSB  \( \text{S.I.M.O.N.T. Head} \)
- 28199 LN   \( \text{S.I.M.O.N.T. Power Supply, 90 – 240 V} \)
- 28199 LB   \( \text{S.I.M.O.N.T. Base} \)
- 28199 LJ   \( \text{S.I.M.O.N.T. Joystick} \)
- 28199 LP   \( \text{S.I.M.O.N.T. Pump, peristaltic} \)
- 28199 LH   \( \text{S.I.M.O.N.T. Head Support} \)

#### Spare Parts for Mobile Standard Rail 28272 MR
- 28272 MP  \( \text{Holding Plate, not for use in human medicine} \)
- 28272 MC  \( \text{C-Clamp, not for use in human medicine} \)
- 28272 MW  \( \text{Stop Block, not for use in human medicine} \)
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 recontructed 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:
  - Turbine/Septum
  - Maxillary Sinus
  - Ethmoidal Cells
  - Sphenoidal Sinus

- Special material provides good tactile feedback

723128 Training Model, for endoscopy of the nose and paranasal sinuses
including:
Section Plane 1: Front Plate
Section Plane 2: Turbine/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
The ear framework is sculpted from polyester 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

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 and Accessories

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
The ear framework is sculpted from polyester 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

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 and Accessories

Spare Parts for Aurical Reconstruction Trainer 50209 RT

50209 RTB  Base Plate, with LUR-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
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

Further Bronchial Trees and Accessories see page 24
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

Further Bronchial Trees and Accessories see page 24
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

NAKHOSTEEN Bronchoscopy Trainer, Model “Broncho-Boy Junior”, with intact (healthy) bronchial tree, with rack
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 and Accessories

### Spare Parts for Intubation Trainer 10915 VB

- **10915 VB1**  **Bronchial Tree**, pathophysiologial, 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)
The training model offers a true-to-life method to learn endoscopic artery harvesting quickly and easily under realistic surgical conditions and is therefore a cost-effective alternative to human specimens. The interchangeable working insert is composed of imitation muscles, fascia and vessels.

49205 TA

49205 TA  Training Model, for endoscopic artery harvesting including:
Forearm
Housing with Hand
Working Insert
Quick Lock-Release Mechanism
Protective Cover
Lubricant
The training model for endoscopic vein harvesting consists of a reusable housing and a replaceable insert. Both the housing and the insert are angled to represent the flexed position of the leg during endoscopic vein harvesting. Covered in silicone skin, the insert features adipose tissue with an embedded vessel.
### Spare Parts and Accessories

#### Spare Parts for Training Model 49205 TA

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49205 TB</td>
<td>Forearm</td>
</tr>
<tr>
<td>49205 TC</td>
<td>Housing with Hand</td>
</tr>
<tr>
<td>49205 TD</td>
<td>Working Insert, with integrated vessel, for single use</td>
</tr>
<tr>
<td>49205 TE</td>
<td>Quick Lock-Release</td>
</tr>
<tr>
<td>49205 TF</td>
<td>Protective Cover, for Working Insert 49205 TD</td>
</tr>
<tr>
<td>49205 TG</td>
<td>Lubricant</td>
</tr>
</tbody>
</table>

#### Spare Parts for Training Model 49205 TV

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49205 TH</td>
<td>Working Insert, with integrated vessel, for single use, for training model for vein harvesting</td>
</tr>
<tr>
<td>49205 TI</td>
<td>Housing, to inlay the working insert</td>
</tr>
<tr>
<td>49205 TJ</td>
<td>Cover, for fixating the working insert on the housing</td>
</tr>
<tr>
<td>49205 TK</td>
<td>Pins, for fixating the cover of the training model for vein harvesting</td>
</tr>
</tbody>
</table>
THORAX

NAKHOSTEEN
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NAKHOSTEEN
PEDIATRIC BRONCHOSCOPY
TRAINER .............................. 31

SPARE PARTS AND
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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

Further Bronchial Trees and Accessories see page 32
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
- NAKHOSTEEN Bronchoscopy Trainer, Model “Broncho-Boy Junior”, with intact (healthy) bronchial tree, with rack
Spare Parts and Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10915 K</td>
<td>Bronchial Tree, diseased</td>
</tr>
<tr>
<td>10915 H</td>
<td>Carrying Case</td>
</tr>
<tr>
<td>10915 L</td>
<td>Bronchial Tree, fluorescent</td>
</tr>
<tr>
<td>10915 T</td>
<td>Chest Lid</td>
</tr>
<tr>
<td>10915 J</td>
<td>Bronchial Tree, intact (healthy)</td>
</tr>
</tbody>
</table>
LAPAROSCOPY IN SURGERY, GYNECOLOGY, UROLOGY

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TRAINING MODEL FOR LAPAROSCOPIC
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SZINICZ
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LYRA
LAPAROSCOPIC SIMULATOR ............ 39

SPARE PARTS AND
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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
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

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 fixing Peritoneum Replacement Foil 26342 P to BITTNER Hernia Model 26342 M
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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Endoscopic Surgery Trainer “SURGERY” Model</th>
<th>Endoscopic Surgery Trainer “GYNECOLOGY” Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model A</td>
<td>including: Base Plate “SURGERY” Top Plate Working Plate Training Module Fixation Clamps, package of 2 Silicone Insert, package of 4 Case “SURGERY” Drape</td>
<td>including: Base Plate “GYNECOLOGY” Top Plate Working Plate Training Module Fixation Clamps, package of 2 Silicone Insert, package of 4 Case “GYNECOLOGY” Drape</td>
</tr>
</tbody>
</table>
Training Model for Laparoscopic Surgery
European Academy of Gynecological Surgery (EAGS) Model

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)
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

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

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
<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26344 LE</td>
<td>Neoderma Organ Insert, abdominal wall</td>
</tr>
<tr>
<td>26344 LF</td>
<td>Neoderma Organ Insert Set, with bowels and organs</td>
</tr>
</tbody>
</table>
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 hysteroscopy 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
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

Additional Software Packages

573223 GYN Advanced Hysteroscopy Module
  including:
  Hysteroscope, for GYNTRAINER
  Grasper/Punch, for GYNTRAINER

573224 GYN Advanced Resection Module

573225 Essure® Module
  including:
  Hysteroscope, for GYNTRAINER
  Essure® Instrument, for GYNTRAINER
## 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 coagulate sources of bleeding
- To resect the myoma in small fragments; safe handling of the loop electrode

## 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
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

573225 Essure® Module
including:
- Hysteroscope, for GYNTRAINER
- Essure® Instrument, for GYNTRAINER
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.

Dr. R. Campo,
Director European Academy of Gynaecological Surgery (EAGS)
Clinical Director, Institute for Fertility and Embryology (LIFE)
Leuven, Belgium
http://www.europeanacademy.org
### Accessories

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26348</td>
<td><strong>SZABO-BERCI-SACKIER Laparoscopic Trainer</strong></td>
</tr>
<tr>
<td>TP 100EN</td>
<td><strong>TELE PACK X LED</strong>, 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&quot; LCD TFT monitor with LED backlight, USB/SD memory module, color systems PAL/NTSC, power supply 100 – 240 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>20212030</td>
<td><strong>TELECAM One-Chip Camera Head</strong>, color system PAL, soakable, gas-sterilizable, with integrated Parfocal Zoom Lens, f = 25 – 50 mm (2x), 2 freely programmable camera head buttons</td>
</tr>
<tr>
<td>20212130</td>
<td><strong>Same</strong>, color system NTSC</td>
</tr>
<tr>
<td>26003 AA</td>
<td><strong>HOPKINS® Straight Forward Telescope 0°</strong>, enlarged view, diameter 10 mm, length 31 cm, <strong>autoclavable</strong>, fiber optic light transmission incorporated, color code: green</td>
</tr>
<tr>
<td>26003 BA</td>
<td><strong>HOPKINS® Forward-Oblique Telescope 30°</strong>, enlarged view, diameter 10 mm, length 31 cm, <strong>autoclavable</strong>, fiber optic light transmission incorporated, color code: red</td>
</tr>
<tr>
<td>26173 KPF</td>
<td><strong>KOH Macro Needle Holder</strong>, with tungsten carbide insert, ergonomic pistol handle, with disengageable ratchet, ratchet position left, jaws straight, size 5 mm, length 33 cm</td>
</tr>
<tr>
<td>26173 KAF</td>
<td><strong>KOH Macro Needle Holder</strong>, with tungsten carbide insert, ergonomic straight handle, with disengageable ratchet, ratchet position right, jaws straight, size 5 mm, length 33 cm</td>
</tr>
<tr>
<td>33321 MD</td>
<td><strong>CLICKline KELLY Dissecting and Grasping Forceps</strong>, 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</td>
</tr>
<tr>
<td>33321 KW</td>
<td><strong>CLICKline MATKOWITZ Grasping Forceps</strong>, 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</td>
</tr>
<tr>
<td>34321 MS</td>
<td><strong>CLICKline METZENBAUM Scissors</strong>, 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</td>
</tr>
<tr>
<td>495 NCS</td>
<td><strong>Fiber Optic Light Cable</strong>, with straight connector, extremely heat-resistant, enhanced light transmission, diameter 4.8 mm, length 250 cm</td>
</tr>
</tbody>
</table>
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

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.
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).

**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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>26343 A1</td>
<td>Neoderma Uterus, with two polyps</td>
</tr>
<tr>
<td>26343 A2</td>
<td>Neoderma Uterus, with septum and polyps, for the BETTOCCI® technique</td>
</tr>
<tr>
<td>26343 A3</td>
<td>Neoderma Uterus, with septum without polyps, for the BETTOCCI® technique</td>
</tr>
<tr>
<td>26343 B</td>
<td>Vaginal Block, for biological organ structures/uteri</td>
</tr>
<tr>
<td>26343 C</td>
<td>Vaginal Block, for artificial uteri (Neoderma)</td>
</tr>
<tr>
<td>26343 D</td>
<td>Neutral Electrode, for unipolar use</td>
</tr>
<tr>
<td>26343 F</td>
<td>Neoderma Uterus, for biological implants</td>
</tr>
<tr>
<td>26343 X</td>
<td>Base Body</td>
</tr>
</tbody>
</table>
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
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

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

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

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

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 LYRA Endourological URS Trainer “ADAM”, complete including:
Organ Platform
Organ Insert
LYRA Body Endourological Trainer “ADAM”
## Spare Parts and Accessories

### Spare Parts for LYRA TUR Trainer “ADAM” 27345 TUR

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>27345 C</td>
<td><strong>Organ Platform</strong>, for TUR and for use of biological specimens</td>
</tr>
<tr>
<td>27345 D</td>
<td><strong>Organ Insert Penis</strong>, for TUR</td>
</tr>
<tr>
<td>27345 E</td>
<td><strong>Organ Insert Bladder</strong>, for TUR</td>
</tr>
<tr>
<td>27345 X</td>
<td><strong>LYRA Body Endourological Trainer “ADAM”</strong>, consisting of base and upper part</td>
</tr>
</tbody>
</table>

### Spare Parts for LYRA URS Trainer “ADAM” 27345 URS

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>27345 A</td>
<td><strong>Organ Platform</strong></td>
</tr>
<tr>
<td>27345 B</td>
<td><strong>Organ Insert</strong></td>
</tr>
<tr>
<td>27345 X</td>
<td><strong>LYRA Body Endourological Trainer “ADAM”</strong>, consisting of base and upper part</td>
</tr>
</tbody>
</table>
The Transanal Endoscopic Operations (TEO®) training model is specially designed for learning surgical instrument management in an easy and effective manner.

Special Features:
● Specially designed for practicing Transanal Endoscopic Operations (TEO®)

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

● Suitable for use with an intestinal training model or appropriate anatomical specimens
Training Model for TEO®
(Transanal Endoscopic Operations)

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  Intestinal Model, with tumors

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

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 ENDOCA MELEON®, grasping forceps/punch, DRILLCUT-X® and palpation hook
- Transport Case

573610
573613
573611
573614
573612
573615
573616
573617

Same, in single use packaging
Same, with anatomical knee model, in a reusable transport case
Same, with anatomical knee model, in single use packaging
Same, with anatomical shoulder model, in a reusable transport case
Same, with anatomical shoulder model, in single use packaging
Same, with anatomical hip model, in a reusable transport case
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
- 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 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 Special Mounting Device, for attaching an arthroscopy model to a table
Arthroscopy Models
for teaching and training

28191 Arthroscopy Shoulder Joint Model

28192 Arthroscopy Elbow Joint Model

28193 Arthroscopy Ankle Joint Model

28194 Arthroscopy Wrist Joint Model
## Spare Parts for HENCHÉ Arthroscopy Model 28186

<table>
<thead>
<tr>
<th>Part Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28186 AG</td>
<td>Arthroscopy Model, basic unit</td>
</tr>
<tr>
<td>28186 A</td>
<td>Set of Internal and External Menisci, with bucket-handle tear</td>
</tr>
<tr>
<td>28186 B</td>
<td>Set of Internal and External Lateral Ligaments</td>
</tr>
<tr>
<td>28186 C</td>
<td>Set of Anterior and Posterior Crucial Ligaments</td>
</tr>
<tr>
<td>28186 D</td>
<td>HOFFA Fatty Tissue</td>
</tr>
</tbody>
</table>
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)

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28198 LB</td>
<td>Vertebrae L4 – L5, with sacrum</td>
</tr>
<tr>
<td>28198 LC</td>
<td>Muscle Layer</td>
</tr>
<tr>
<td>28198 LD</td>
<td>Artificial Skin</td>
</tr>
</tbody>
</table>
MULTITRAINER FOR
GYNECOLOGY, UROLOGY,
ARTHROSCOPY

MULTITRAINER ................. 84-85
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

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

Same, in single use packaging