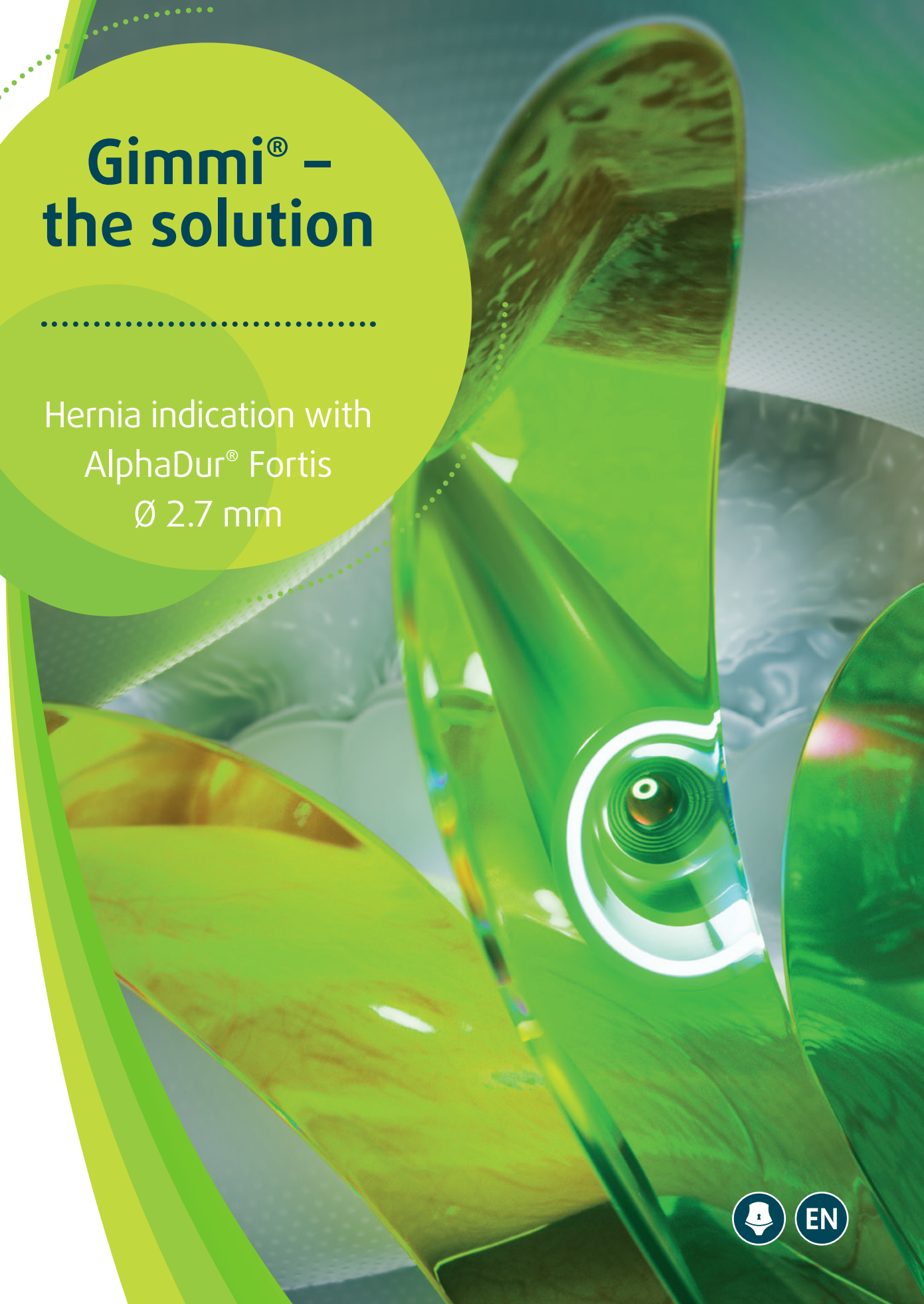
Surgical technology
adapted to life.

Gimmi®

Gimmi® – the solution

Hernia indication with
AlphaDur® Fortis
Ø 2.7 mm



EN

High quality
Precise handling
Excellent ergonomy

AlphaDur® Fortis – stable and precise high-tech instruments

The patented 1-part system AlphaDur® Fortis was specially designed by Gimmi® for experts in microinvasive surgery.

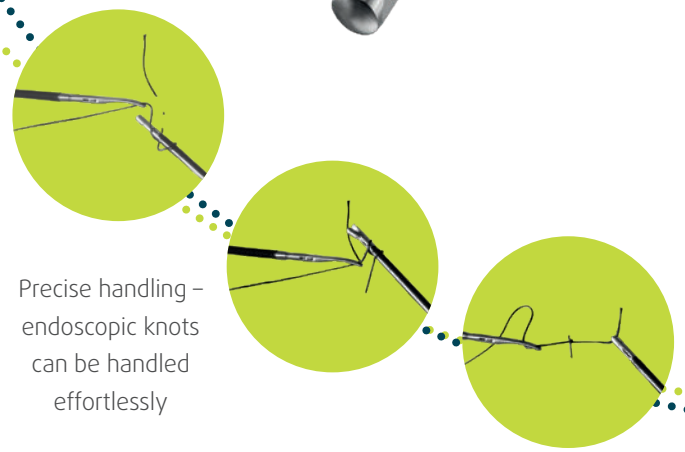
Due to its special incision technique and small instrument diameter of just 2.7 mm, patients experience lesser post-operative pain, faster recovery times and an outstanding aesthetic result with imperceptible scars.

Developed with strongest material compositions, the minimal diameter creates no disadvantages in surgery, yet the stability and strength can be compared with conventional 5 mm laparoscopic instruments.

The axial handle combines excellent ergonomic feeling with efficiency while allowing precise handling in delicate procedures.

A larger selection and further instruments for microinvasive surgery can be found in our laparoscopy catalogue

AlphaDur® Fortis – 1-part microinvasive instrument

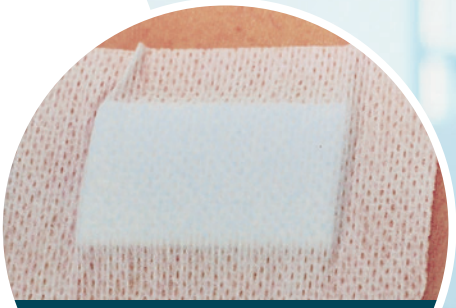


Precise handling – endoscopic knots can be handled effortlessly

Advantages

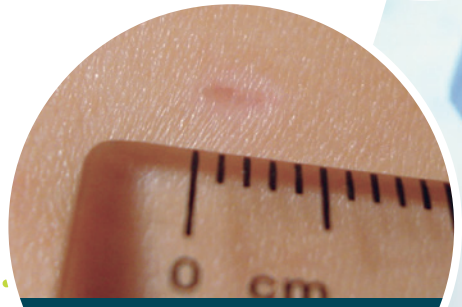
- Made of high quality and durable material
- Grasper with stronger stability compared to AlphaDur® Classic
- Different handles available, with/without ratchet and with/without rings, to optimize the handling
- The axial handle enables delicate work to be done quickly and efficiently
- Available exchange program
- Almost scarless

Postoperative, after removal of the trocar



Postoperative wound care

After 10 days



Almost scarless after 3 weeks

Low diameter

Less pain

Fast recovery time

MILS / TAPP with AlphaDur® Fortis according to Prof. Henning Niebuhr, M.D.

Prof. Henning Niebuhr, M.D.
Hamburg, Germany

Clinical career

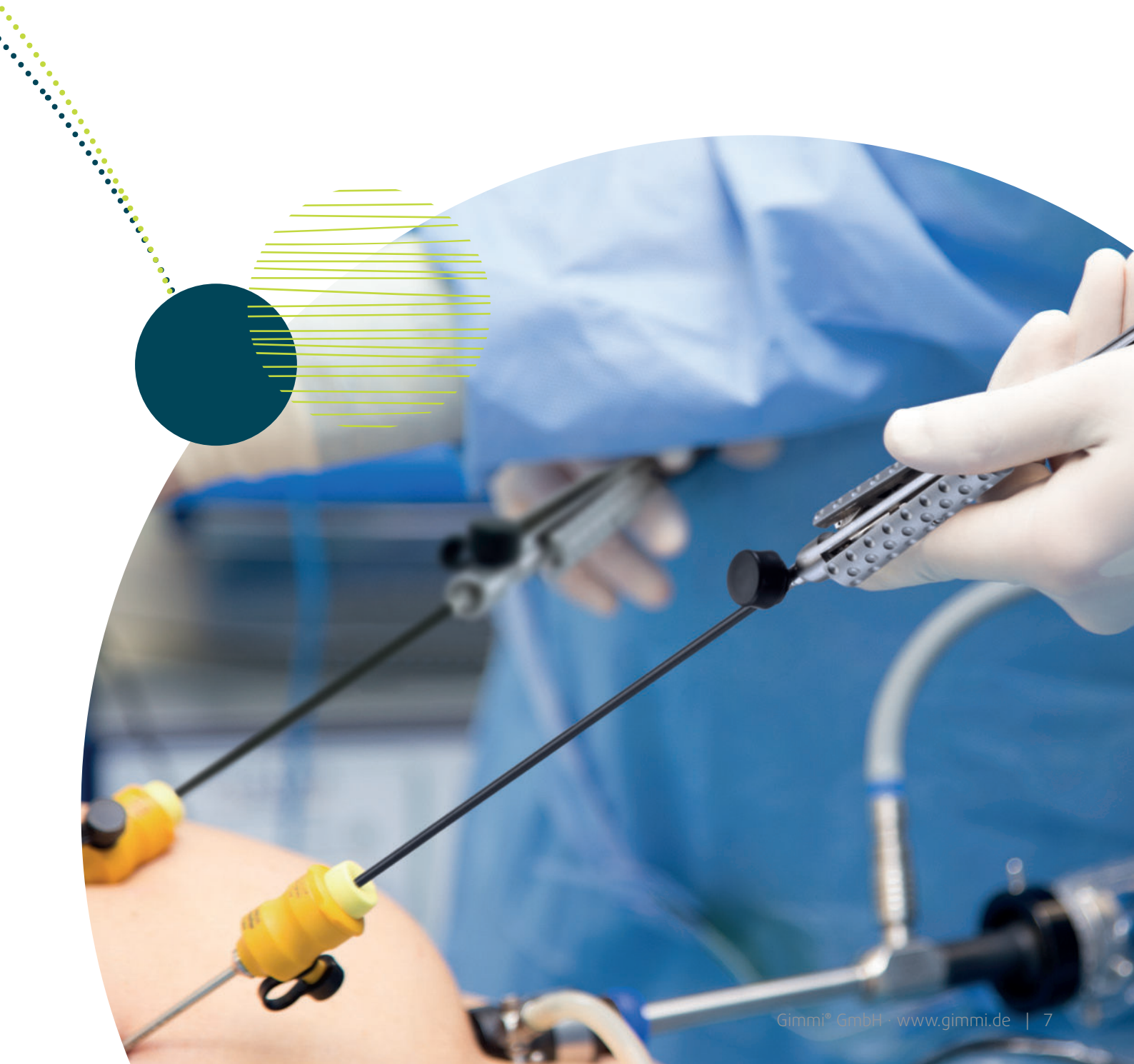
1979–1985	Degree in medicine University of Hamburg
1985	License to practice medicine Hamburg Medical Association
1985–1992	Medical specialist training Klinikum Nord Hamburg with Professor Rückert
1987	Doctorate University of Hamburg
1991	Appointed DEGUM Seminar Leader German Society of Ultrasound in Medicine and Biology (DEGUM)
1992	Certification as a surgeon Hamburg Medical Association
1994	Senior Physician in the surgical department Asklepios Clinic Ochsenzoll / Klinikum Nord, Founding and running the first short-term treatment center in a hospital in Germany Asklepios Clinic Ochsenzoll / Klinikum Nord
1995–2004	ESI Faculty (Instructor Laparoscopic Operations)
1997	Chief Physician in the surgical department Evangelical Hospital, Alsterdorf Hamburg
1998	Specialization in visceral surgery Hamburg Medical Association
2002	Appointment as Associate Professor in Surgery Medical Department UKE, Appointment as a private lecturer in surgery University Medical Center Hamburg-Eppendorf
2004	Takeover of the Bergedorf surgeon practice
2007	Founding Hanse Surgery and Hanse Hernia Center Hamburg Bergedorf, Eidelstedt, Hafen, Eppendorf
Since 2008	Lecturer at the University for Applied Sciences in Hamburg (HAW)
Since 2009	OMTC (Instructor Laparoscopic Operations), Member Scientific Steering Group: Herniamed Hernia Register
Since 2011	Member Scientific Steering Group: Training course hernia compact
2011	Special visceral surgery
2013	Appointed professor
2013	Member Herniasurge: International Guidelines for Treatment of groin hernia
2014	Certification of the Hanse Hernia Center as reference centre of the CAH / DHG
Since 2016	Member of the Executive Board Deutsche Herniengesellschaft, Member of the Board of Directors Surgical Working Group, Hernias of the German Society for General and Visceral Surgery
2016–2019	Focus Doctor List Hernia Surgery
2017	Re-certification of the Hanse Hernia Center as a reference centre of CAH / DHG
2018	President and host of the Annual Meeting of the German Hernia Society 2018
2019	Congress secretary of annual EHS conference in Hamburg

Clinics

Since 2000	Hospital Praxisklinik Hamburg Bergedorf
Since 2002	Bethesda Hospital Hamburg Bergedorf
Since 2009	Specialist Clinic Hamburg Eppendorf
Since 2007	Department Head Hanse Hernia Center Hamburg Bergedorf / Eppendorf
Since 2014	ATOS Klinik Fleetinsel Hamburg

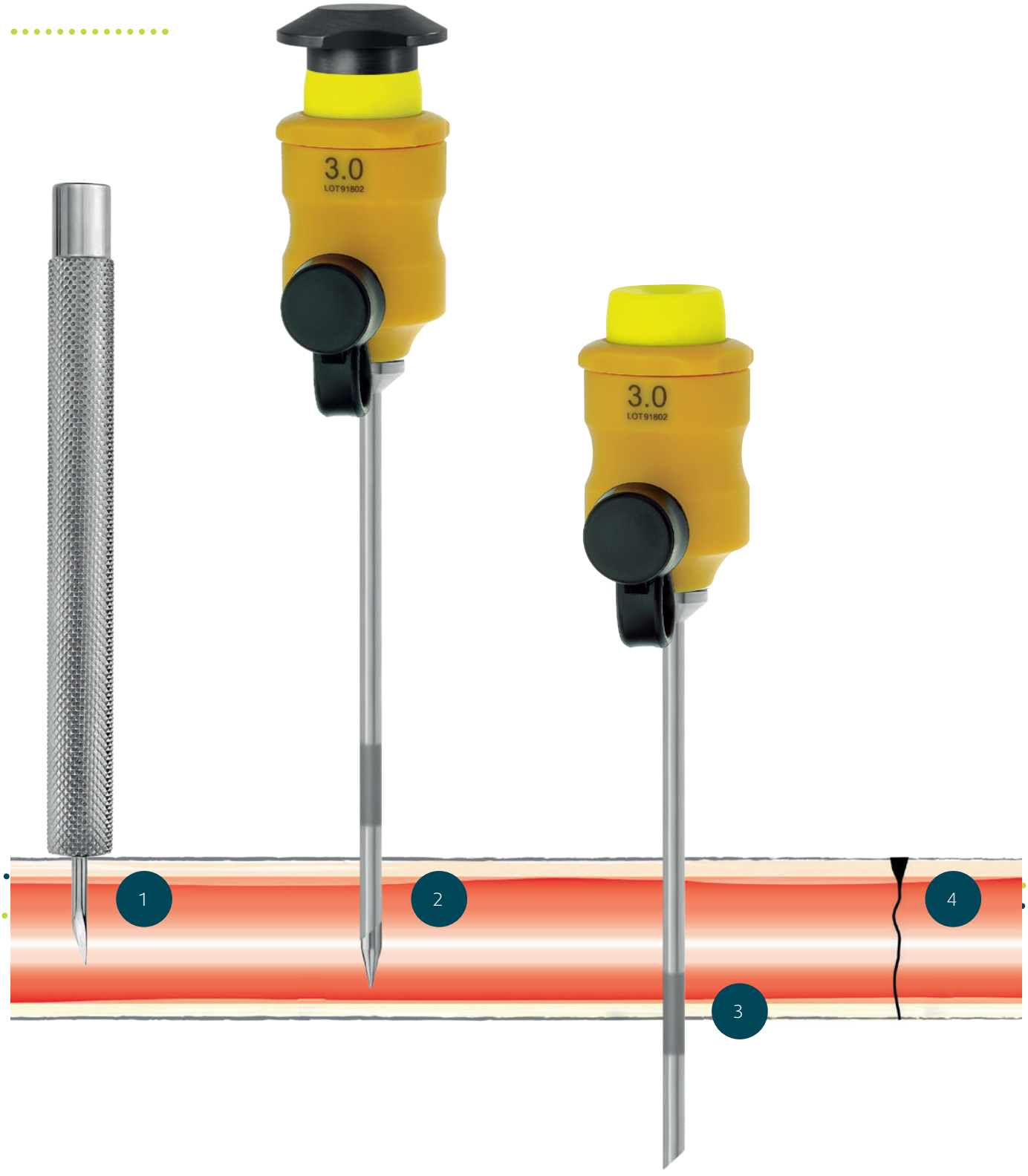
Memberships in professional societies

- German Hernia Society
- European Hernia Society
- International Endo Hernia Society
- Surgical Working Group Hernias of the German Society of General and Visceral Surgery
- German Society of Surgery
- German Society for Ultrasound in Medicine
- Association of North German Surgeons



Incision procedure with AlphaDur® trocars

For AlphaDur® Fortis Ø 2.7 mm



1 The incision pick is both the first step in opening and the key element for excellent wound healing in AlphaDur® procedures. The cutting end pierces the upper layer of skin (epidermis) and creates space for the subsequent insertion of the AlphaDur® trocar. The skin pick, specially adapted to the AlphaDur® insert, not only incises much more precisely than a scalpel, it also replaces it completely.

2 The dilating, conical trocar spine/mandrel now opens up the remaining abdominal wall layers. Due to the "bladeless", non-cutting, AlphaDur® trocar spine/mandrel, sensitive nerves and blood vessels are not destroyed but remain intact. Postoperative pain is reduced to a minimum.

3 The shaft tube of the AlphaDur® trocar with the specially bevelled end continues the dilated penetration and keeps the access open for the introduction of the AlphaDur® instruments. The specially machined part of the AlphaDur® trocar tube ensures a firm fit in fascia and peritoneum, even in labour-intensive situations. This largely prevents the trocar from slipping out.

4 After use, the AlphaDur® trocar sleeve is pulled out/removed. The previously dilated tissue now closes anatomically by itself. In contrast to a larger incision area, the wound does not require a suture and is only closed with a plaster.

AlphaDur® instrument advantages by Prof. Niebuhr, M.D.

The efforts to achieve increasingly smaller accesses continue apace in laparoscopic, minimally invasive surgery.

Three paths have been taken:

- **NOTES** (Natural Orifice Transluminal Endoscopic Surgery)
- **SILS** (Single Port Laparoscopic Surgery)
- **MILS** (Minimal Incision Laparoscopic Surgery)

The first two procedures mean a considerable change in surgical techniques with their own risks and a large technical and financial outlay.

MILS represents a natural progression of the now widely established laparoscopic procedures. The use of the laparoscopic method, which is gentle on the patient and surgeon due to the triangulation via various minimised accesses, and at the same time has excellent healing properties (almost scarless operation and, in hernia surgery, a further reduced complication rate*), is still possible without restriction.

Due to the material mix of strong alloys, the AlphaDur® instruments can realise trocar outer diameters that cannot be achieved with steel and are therefore the actual MILS instruments. A subtle preparation as well as suture technique can be realised after a short learning phase. The high strength of the reusable instruments also allows complex preparations with sometimes increased force.

Results / case numbers

A total of 1500 hernia operations are carried out each year at the Hanse Hernia Centre Hamburg by "high volume operators" (up to 800 personal operations per year): Endoscopic groin hernia operations using the TAPP and TEP techniques, endoscopic and open abdominal wall/scar hernia surgery (IPOM/sublay) and endoscopic diaphragmatic hernia repairs, including patients with severe gastroesophageal reflux disease. Of these, around 60% can be carried out in a micro invasive manner using AlphaDur® instruments.

* Reduced rate of trocar hernias and chronic postoperative pain.

Operating Procedure by Prof. Niebuhr, M.D.

The monitor is positioned directly at the foot end of the operating table. The surgeon and assistant stand to the side (or in some cases opposite each other) of the patient, who is lying on his back, on the opposite side to the hernia: the surgeon cranial, the assistant at the foot of the patient (depending on his height, it is best for the assistant to stand on a flat footstool: this allows the surgeon and assistant to work in a relaxed manner without obstructing each other).

After sterile washing and draping, the first incision for the 11 mm optic trocar is made transversely in the lower umbilical circumference.

The Veress cannula is inserted with the aid of a Backhaus clamp. The safety test according to Semm (click/spray through/hanging drop is perfomed). The CO_2 gas is insufflated until a pneumo-peritoneum with a pressure of 12 mmHg is established.

Once the Veress cannula has been removed and the aspiration test has been carried out, the 11 mm non-cutting, dilating optical trocar ("bladeless" obturator) is inserted.

The 30° optic is inserted and the overview laparoscopy is carried out with a confirmation of the diagnosis in the form of a general laparoscopic "panorama" to detect any pathologies (adhesions).

The trocar piercing points are set and "preneedling" is carried out to determine the AlphaDur® trocar positioning. Trocar position T1: Skinpick puncture and placement of the first AlphaDur® trocar with a conical bladeless tip obturator (least possible injury to nerves and vessels by purely pushing the tissues apart).

Same procedure at trocar position T2.

Anti-Trendelenburg position and lateral tilt of the operating table to the side opposite the hernia. Incision of the peritoneum slit-shaped above the enlarged hernia gap with protection of the epigastric vessels with the Maryland dissector on one side and the scissors or the monopolar L-hook for haemostasis on the other side. Moistening the instruments before inserting them into the trocars helps to ensure smooth gliding.

As soon as possible – after clear opening of the preperitoneal space – exchange the scissors for a Maryland dissector as well. Dissection of the lateral hernia sac from the inguinal canal from the spermatic cord and its structures as well as the medial hernia and the possible femoral hernia gap. Shearing movements are well tolerated by the instrument shafts with moderate force. Then open the medial preperitoneal compartment significantly above the midline. Where necessary, carry out a flat suture of the protruding transversalis fascia in order to achieve a good mesh surface.

Careful dissection of the lateral preperitoneal compartment leaving the delicate fatty lamella between peritoneum and musculature (optimal nerve protection) up to the spina iliaca anterior superior.

Following careful preparation of the necessary preperitoneal space and removal of the optics, insert the tailored, moistened, lightweight, large-pore, 10 x 15 cm mesh via the optical trocar using a 5 mm instrument. The mesh can usually be advanced directly into the preperioneal space.

It can then be placed well in the preperitoneal space with the two dissectors. First advance the medial edge of the mesh far medially and then retract the mesh laterally so that the lower edge of the mesh comes to rest securely between the bladder and the symphysis. The mesh must be positioned without folds and the upper edge must be well covered by the upper peritoneal fold. It must overlap the three hernia gaps (lateral, medial and femoral) well. In this case, fixation of the mesh (stapler, suture, fibrin glue) is not necessary.

Fixation with a medial suture using a commercially available absorbable polyglactin thread is only necessary in the case of a large medial hernia after a planing suture of the rolled-out transversalis fascia (see above). After completion of the mesh positioning, a careful tension-free continuous peritoneal suture

follows for secure closure and complete covering of the inserted mesh (adhesion propylaxis) with a commercially available, shortened (approx. shaft length of a 5-gauge needle holder) absorbable polyglactin suture 3-0 with a semicircular needle, which can be inserted through the free 11 mm optic trocar.

After reinsertion of the optic, the suture is grasped with the AlphaDur® needle holder inserted from the right after 90° positioning of the needle with the dissector inserted from the left.

The first stitch is made laterally to the incision so that the suture can be securely tied without tension using the usual instrument knot technique (two loops forward, one backward and a final one forward again). The suture is made continuously from right to left with a stitch distance of clearly < 1 cm. The final knotting is done with a loop knot in the above technique. The remaining thread can be cut with the scissors inserted from the left.

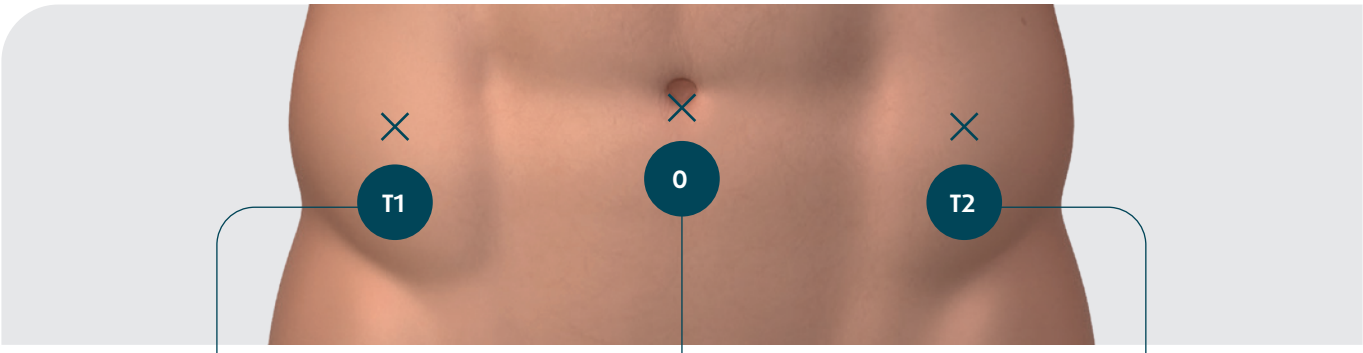
The recovery of the needle and the remaining thread is carried out under optical control and by inserting and passing the needle into and through the optic trocar while simultaneously retracting the optic. It is important to keep the optic trocar in one plane with the instrument to avoid excessive shear forces on the instrument shaft.

Then reinsert the optics for a final overview and documentation.

Removal of the AlphaDur® trocars under visual control. Then desufflation of the abdomen and removal of the optic trocar 0. Fascia closure of the umbilical incision. Skin closure using absorbable intracutaneous suture with countersunk knots. The 2 mm wounds do not require closure T1 + T2.

Plaster dressings of all three incisions (no steristrips -> tension blisters) finish the procedure.

Trocar positioning & setup for surgery



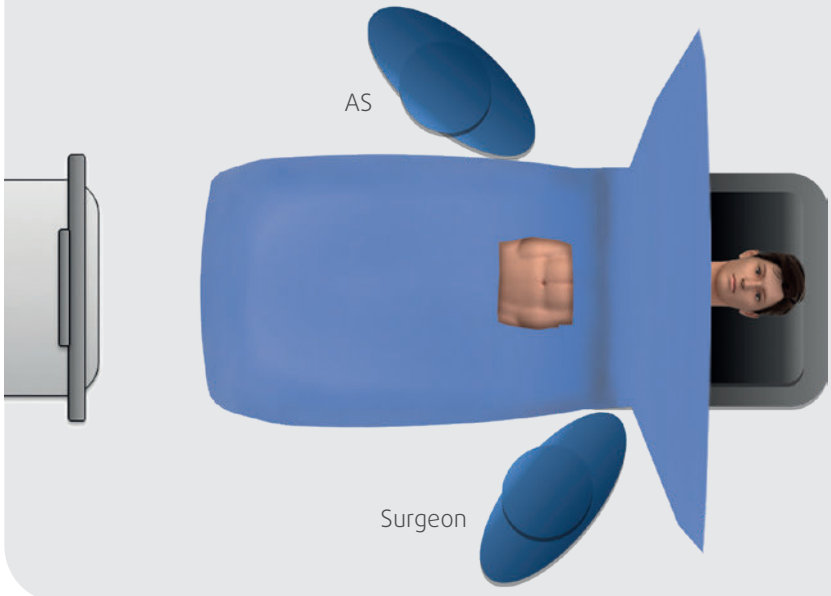
Dilating AlphaDur® trocar
for working instruments
AlphaPort **T.8087.03**
with trocar **T.8047.03**

11 mm trocar for optics with insufflation
Insertion of the mesh and the suture material
AlphaPort **T.8094.11**
with trocar **T.8062.11**

Dilating AlphaDur® trocar
for working instruments
AlphaPort **T.8087.03**
with trocar **T.8047.03**

Setup for surgery

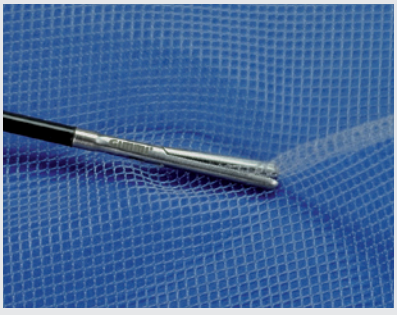
For a patient with a right inguinal hernia.



Mesh implant

A lightweight, monofilament poly-propylene mesh is used for the AlphaDur® instruments.

The large-pored mesh is anatomically cut to size before insertion, so fixation to the Cooper's ligament is not necessary in most cases.



Comparison & advantages of AlphaDur® Fortis

Comparison to other 5 mm instruments

- The instrument diameter has been almost halved from 5.0 to 2.7 mm
- Reduction of traumatized incision area by ⅔
- Axial handle for a high level of ergonomics compared to pistol handle
- Complication management is entirely micro invasive with suction/rinsing instruments and hemostasis

Advantages for the user

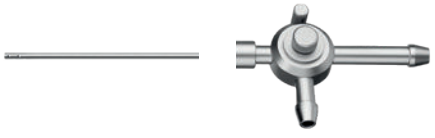
- The usual surgical procedure is maintained
- Trocar positioning and the instrument application remain the same
- The stiffness of the AlphaDur® instruments is similar to the 5 mm instruments
- No suture required for trocar incisions T1 and T2

Advantages for the patient

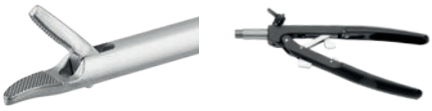
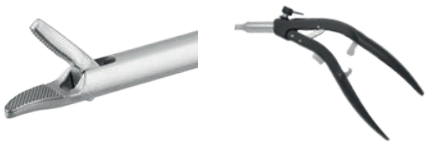
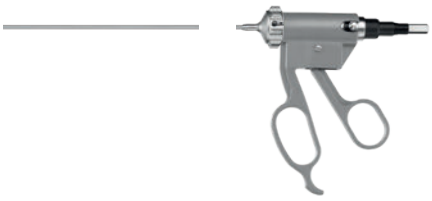
- Barely any postoperative pain
- Gentle on tissue due to less injury to nerves and blood vessels
- Almost scarless
- The probability of a trocar hernia is significantly reduced

TAPP instruments set recommendation

Working instruments

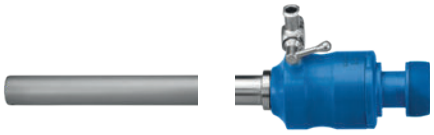
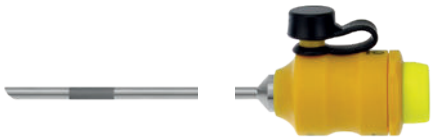
Quantity	Item No.	Description	
1	S.0598.22	AlphaDur® Fortis, grasper atraumatic, Ø 2.7 mm, WL 300 mm	
1	S.0598.67	AlphaDur® Fortis, grasping forceps, atraumatic, fenestrated, Ø 2.7 mm, WL 300 mm	
1	S.0598.32	AlphaDur® Fortis, Maryland dissector, Ø 2.7 mm, WL 300 mm	
1	S.0598.53	AlphaDur® Fortis, scissors, left curved, Ø 2.7 mm, WL 300 mm	
1	S.0598.62	AlphaDur® Fortis, needle holder, Ø 2.7 mm, WL 300 mm	
1	T.0120.62	AlphaDur®, HF hook rigid, Ø 2.8 mm, WL 280 mm	
1	S.0598.95	AlphaDur®, mesh hook, Ø 2.8 mm, WL 300 mm	
1	T.0034.03	AlphaDur®, suction irrigation set, Ø 2.8 mm, WL 300 mm	

Optional needle holder

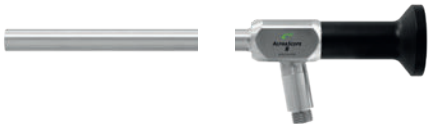
Quantity	Item No.	Description	
1	S.1329.31	Cernicalo II needle holder, axial handle, TC jaws left curved Ø 3 mm, WL 330 mm	
1	S.2329.31	Cernicalo II needle holder, pistol handle, TC jaws left curved, Ø 3 mm, WL 330 mm	
Optional bipolar instruments			
1	T.0054.10 + T.0054.14	AlphaActive Grip Micro, bipolar, handle with rotatable sheath, Ø 3 mm, WL 290 mm	
1	T.0054.16	AlphaActive Grip Micro, bipolar, insert only, scissors, curved, Ø 3 mm, WL 290 mm	
1	T.0054.17	AlphaActive Grip Micro, bipolar, insert only, grasping forceps, fenestrated, Ø 3 mm, WL 290 mm	
1	T.0054.20	AlphaActive Grip Micro, bipolar, insert only, Maryland dissector, Ø 3 mm, WL 290 mm	

TAPP instruments set recommendation

Trocar system

Quantity	Item No.	Description	
1	T.8094.11	AlphaPort trocar cannula, port 0 Ø 11 mm, WL 100 mm	
1	T.8062.11	AlphaPort bladeless trocar, Port 0, Ø 11 mm, WL 100 mm	
1	S.0598.91	AlphaDur® incision pick, port T Ø 2.5 mm, pick length 14 mm	
2	T.8087.03	AlphaPort trocar cannula, port T, Ø 3 mm, WL 100 mm	
2	T.8047.03	AlphaPort bladeless trocar, port T Ø 3 mm, WL 100 mm	

Optical system

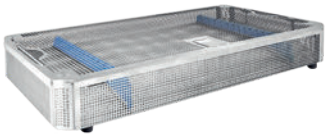
Quantity	Item No.	Description	
1	**E.8293.11 IV**	AlphaScope 4HD, 30°, Ø 10 mm, WL 330 mm	
1	**E.8230.48 LED**	Optical light cable with adapters, Ø 4.8 mm, L 2.3 m LED	
Optional instruments for the lateral view			
1	**E.8297.43 I**	AlphaScope II, 30°, Ø 2.9 mm, WL 300 mm	
1	**S.2000.47**	Swap adapter, long version, for use with AlphaDur® scope, permits scope changing under sterile conditions	

TAPP instruments set recommendation

Cleaning

Quantity	Item No.	Description	
1	S.0598.90	High pressure syringe for AlphaDur® instrument cleaning, 10 ml	
1	J.8860.08 II	Instruments oil refill bottle complete*, with hand spray attachment, 500 ml	
1	J.8860.06 II	Instruments oil spray*, with spray shutter, 50 ml	

Sterilization and storage

Quantity	Item No.	Description	
2	S.0598.86 II	Sterilization tray with feet for AlphaDur® Fortis instruments, Tray only: 540 x 253 x 67 mm Tray with feet: 540 x 253 x 90 mm	
1	R.0146.10 + R.0455.02	Safety container, blue 585 x 274 x 188 mm	

* Original product distributed by Gimmi®

Spare parts

Quantity	Item No.	Description	
2	T.9110.12	Sealing cap blue for AlphaPort 11 mm (1 pck. of 10 pcs.)	
4	T.9050.16	Sealing cap for AlphaPort 3.0 mm (1 pck. of 10 pcs.)	
2	T.8004.42	Silicon valve for AlphaPort 11 mm (1 pck. of 5 pcs.)	
4	T.8004.36	Silicon valve small for AlphaPort 3.0 mm (1 pck. of 5 pcs.)	
5	Z.0001.04	LL cap for AlphaPort 3.0 mm (1 pc.)	

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By Vitalmex