



AKTORmed™
ROBOTIC SURGERY

Intelligent assistance systems
for minimally invasive surgery



SOLOASSIST

Robotic camera control

Give yourself freedom



| Surgery



| Gynaecology



| Urology



| Cardiology

AKTORmed
www.aktormed.com



SOLOASSIST II

For a wide variety of surgical interventions laparoscopic techniques have become established as standard procedure. Perfect imaging is the basis for safe and effective surgery. Stable support and flexible positioning of the endoscope are of paramount importance.

This is where the SOLOASSIST is ideal, relieving your team's workload.

Benefits for the surgeon

- **Stable positioning of the endoscope for a steady image**
Thanks to its structure, the SOLOASSIST is stable and vibration-free. It does not shake or tilt the horizon, enabling fatigue-free work.
- **Straightforward and intuitive operation via joystick**
The human hand is the most precise tool at our disposal. Manual work can be performed intuitively without mental stress. That is why you control the SOLOASSIST by an ergonomic JOYSTICK - simply simple.
- **Hands free operation of SOLOASSIST via voice commands**
The SOLOASSIST VOICE CONTROL is your reliable assistant that executes any of your commands with precision. An extensive set of commands allows a reliable control over the positioning of the endoscope during interventions.
- **Precise endoscope positioning within a unique range of movement**
You determine the image yourself. This helps to avoid misunderstandings between surgeon and assistant. The positioning is precise and sensitive. Thanks to the unique range of movement, there is in most cases no need to alter your workflow.
- **Unhindered access to the patient site, no bothersome components impeding the trocar area**
The SOLOASSIST supports the endoscope from above, leaving ample room for your instruments. There is no need to adapt the way you work.
- **Straightforward handling; ready to operate in just a few minutes**
Straightforward and quick set-up and disassembly. The SOLOASSIST is attached directly on the operating table and covered with a sterile cover while the patient is being prepared for surgery.

Benefits for the clinic

- **SOLOASSIST - enhancing your clinic's image**
As a clinic operator, you are increasingly faced with competition for patients and qualified personnel from other clinics and hospitals today. In addition to medical competence, a modern and positive image is one of the most important competitive advantages. Document your leadership in terms of innovation by introducing robotic surgery.
- **Enhanced scheduling efficiency**
The SOLOASSIST is always available to provide assistance, even outside normal working hours.
- **Compatible**
The SOLOASSIST is compatible to most common operating tables and endoscopes, thus protecting your investments. The set-up and dismantling can be performed parallel to the usual workflow, not adding to operating time.
- **Relieving pressure on valuable employees**
For an assistant, static holding of an endoscope is tiresome work. This task is now dealt with by the SOLOASSIST. The assistant is thus freed up to focus on more exacting tasks.
- **SOLOASSIST - beneficial for training**
Being relieved of the tiresome task of having to guide the endoscope, assistant physicians have time to follow their instructors' explanations more attentively and can thus be integrated as equal and valued team members within a shorter period of time.

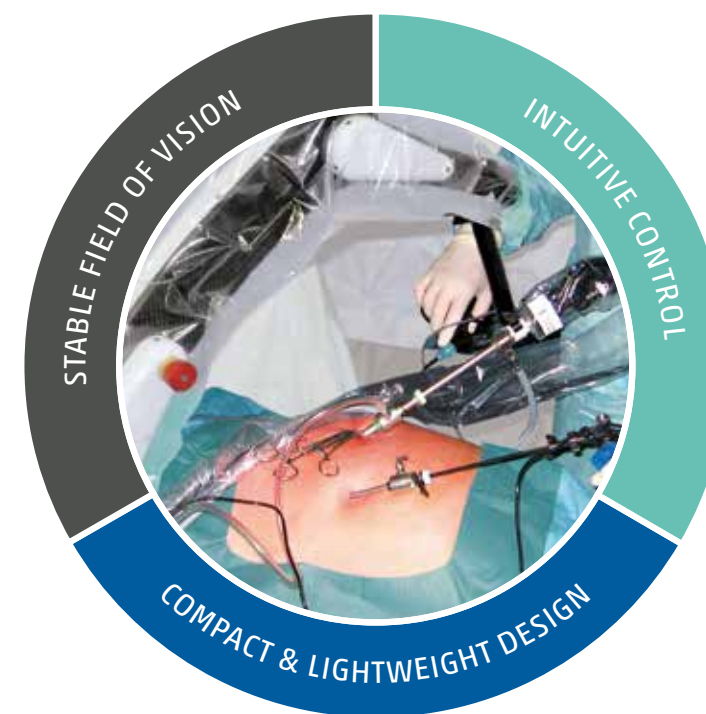
Advantages of the SOLOASSIST

Steady field of vision

- The system provides surgeons with a stable and rock-steady field of vision, even in extreme endoscope positions.
- The wide scope of movement allows surgeons full visibility of the operating sites - without any restrictions. In most cases there is no need to alter your customary way of working.

Safe and sterile work

- A stable image allows surgeons to work in a more relaxed manner, providing them with a reliable view of essentials.
- Even extreme camera positions can be retained as long as required, which is a considerable advantage over manual camera control.
- The STERILE SET which belongs to the SOLOASSIST is multi-use. It includes JOYSTICK, UNIVERSAL JOINT, ENDOSCOPE CLAMP and TENSION SLEEVES which are all autoclavable.
- Before every intervention the SOLOASSIST is covered by a single-use STERILE COVER.



Demo film SOLOASSIST





FDA 510(k) cleared

Intended use

"The intended use of the SOLOASSIST II is a robotic computer driven system whose function is to hold and position a rigid laparoscope/ endoscope.

The SOLOASSIST II is indicated for use in minimally invasive interventions where a rigid laparoscope/ endoscope is indicated for use.

Surgeries, SOLOASSIST II is used, are laparoscopic cholecystectomy, laparoscopic hernia repair, laparoscopic appendectomy, laparoscopic pelvic lymph node dissection, laparoscopically assisted hysterectomy, laparoscopic & thorascopic, decompression fixation, wedge resection, lung biopsy, pleural biopsy, dorsal sympathectomy, pleurodesis, internal mammary artery dissection for coronary artery bypass, coronary artery bypass grafting where endoscopic visualization is indicated and examination of the evacuated cardiac chamber during performance of valve replacement.

The users of the SOLOASSIST II are general surgeons, gynecologists, cardiac surgeons, thoracic surgeons and urologists."

Manual positioning

- At the push of a button, the arm can be moved and pulled into the required position. When the button is released, the arm is locked immediately, remaining in the set position.
- The UNLOCK BUTTON is located on the distal end of the arm in an easily accessible position.



Straightforward docking

- Docking to the operating table is extremely simple thanks to the quick-coupling device.
- After the surgical procedure is completed, the arm is hung onto the TROLLEY. The TROLLEY serves for the transport and storage of the SOLOASSIST.

Control options

- VOICE CONTROL
- Intuitive JOYSTICK for left or right hand



SOLOASSIST II

- The SOLOASSIST II is our flagship product for robotic endoscope control during minimally invasive surgeries. Thanks to the fourth, manually adjustable, axis on the distal arm, the system offers exceptional flexibility.
- A finely tuned system of reusable components allows the adaptation to almost all commercially available endoscopes and most MIS instruments.



Intuitive set of commands

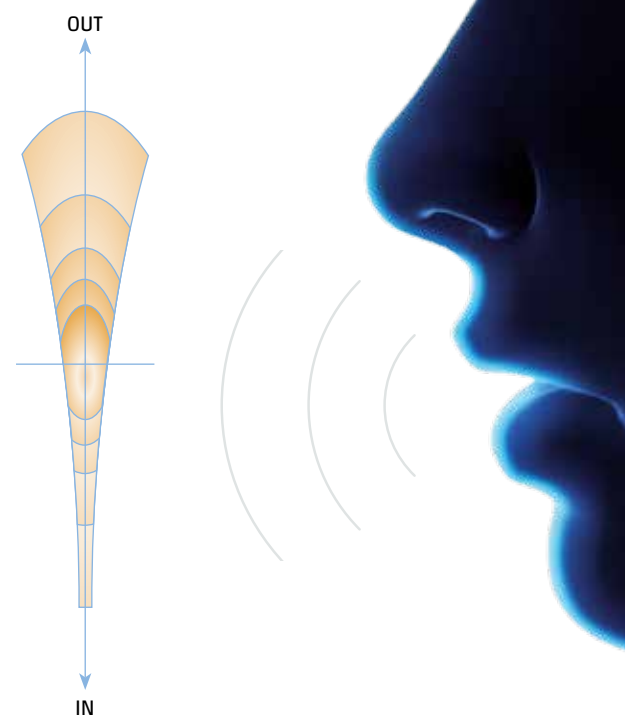
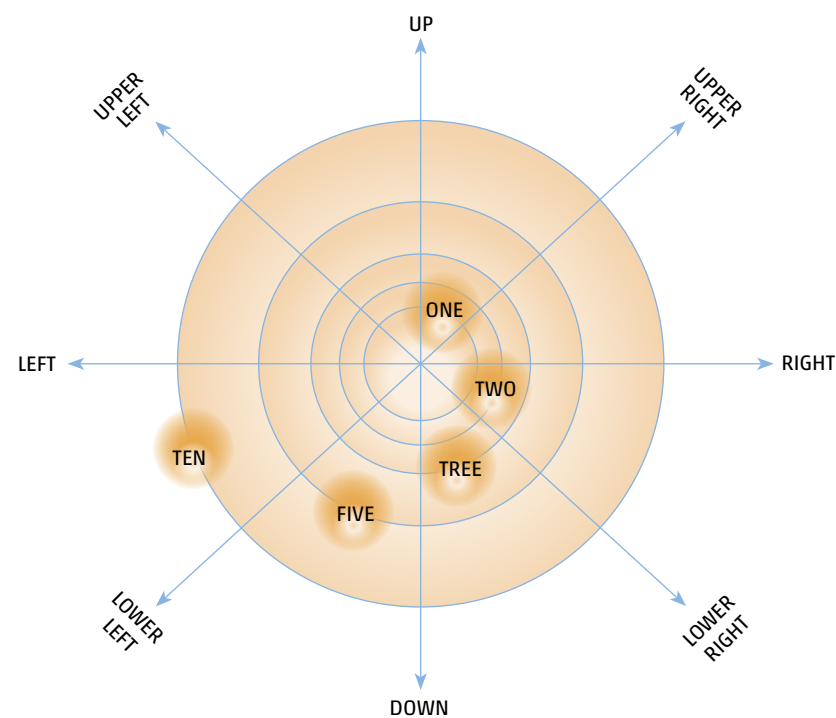
The command set of the SOLOASSIST VOICE CONTROL allows a precise control over the positioning of the endoscope during operation. Any command sequence is started with the hotword SOLO. After recognition of the hotword, commands are accepted for ten seconds. If no command is recognized within this time the VOICE CONTROL returns to standby mode, waiting for the hotword again. The SOLOASSIST VOICE CONTROL is provided with English command recognition as standard. Other languages are available on request.

Saving positions

Sometimes it may be helpful to memorize a special endoscope position. With the SAVE and RESTORE key-words you can save up to three positions and restore this view when needed. With RETURN it is possible to undo the last movement.

Speed settings

With the SPEED keyword followed by ONE, TWO or THREE the speed of the SOLOASSIST can be adjusted to three preset speeds.

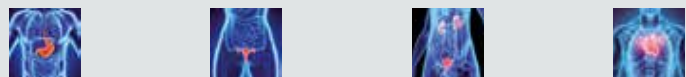


Moving the endoscope

The four main directions (UP, DOWN, LEFT, RIGHT) as well as zooming (IN, OUT) can be combined with a distance modifier (ONE, TWO, THREE, FIVE, TEN) to enable an accurate control over the scope. In addition it is possible to use the keywords UPPER and LOWER to move diagonal. The command MOVE repeats the last movement.



Surgery | Gynaecology | Urology | Cardiology

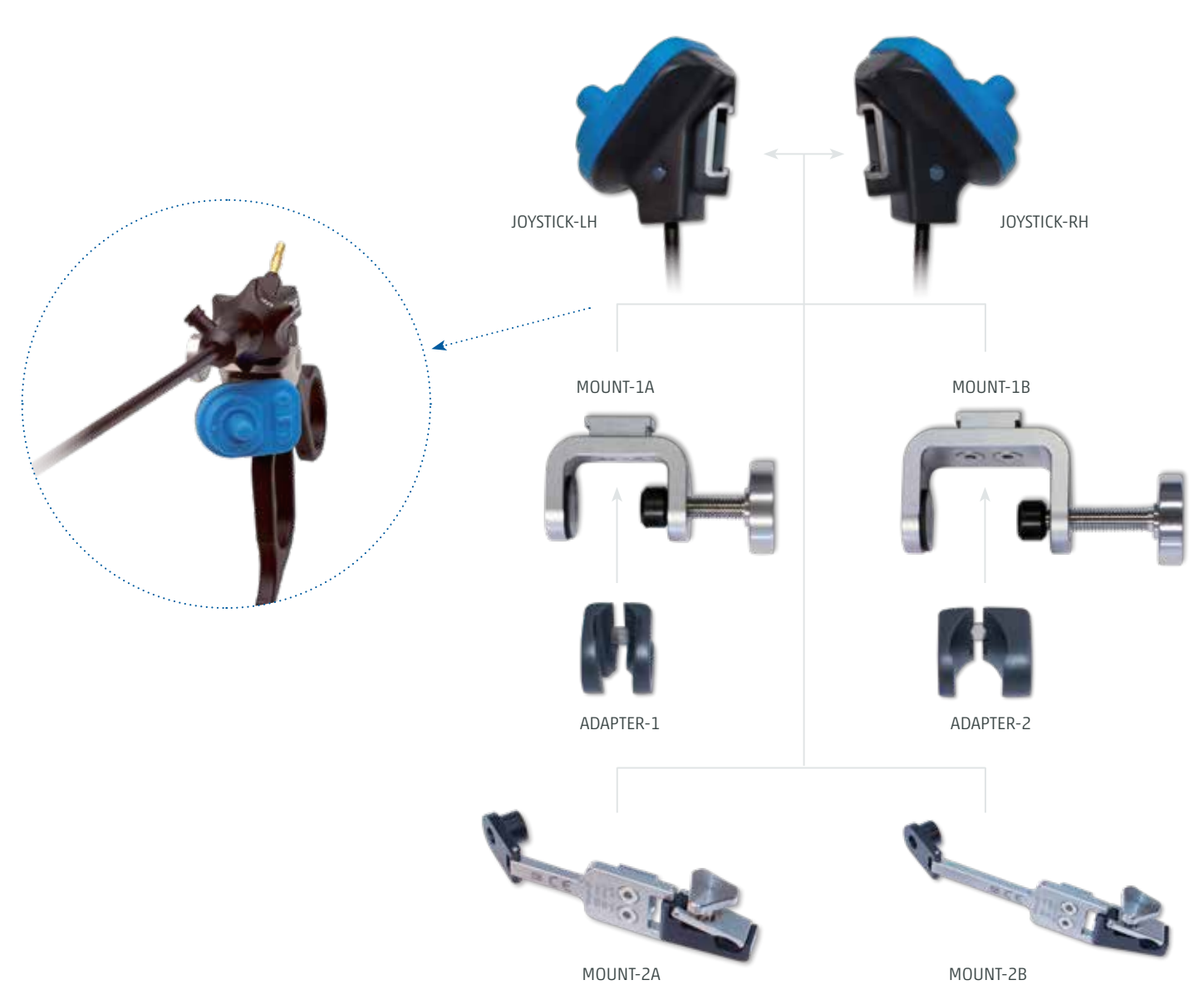


Optimum usability

In minimally invasive interventions, the surgeon works with both hands.

The JOYSTICK is designed for an intuitive control of the SOLOASSIST II and is available for both, left and right hand. The JOYSTICK can be connected to the majority of common MIS instruments by means of magnetically locked MOUNTS.

The JOYSTICK as well as the MOUNTS are designed to be reprocessed.





This is what the users say

Prof. Dr. Hubertus Feußner

"I am convinced that surgical assistance systems have a future in the operating theatre. Thanks to them, surgeons are regaining control of their field of vision for the very first time. This is something that has been lacking in the field of laparoscopy so far."

Prof. Dr. Alois Fürst

"In my experience the SOLOASSIST system provides a completely steady and shake-free image. Although I perform the surgery practically alone, the system has made surgical interventions even easier and safer."

Dr. Yasushi Ohmura

"The SOLOASSIST II is available without additional time and stress in any laparoscopic surgery. It provides a reliable view of the essentials without need to alter a customary way of working. It is required to stabilize the scope to take image quality specifications including 3D and 4K to the maximum. Then I think that the time will be over when a surgeon holds a laparoscope with his own hands. At the point, I'm convinced that the SOLOASSIST II is playing a very important role in a future of laparoscopic surgery."

Prof. Dr. Dieter Birk

"We have performed more than 1.000 procedures with the SOLOASSIST so far. From our point of view, the SOLOASSIST can be used in the upper and lower abdomen, but it can also be used very efficiently in more challenging procedures such as in bariatric surgery."

Prof. Dr. Hermann Hertel

"The new system permits a greater degree of freedom compared to its predecessor. It is also easier to handle and can be set up more quickly. The SOLOASSIST II has become a permanent part of our demanding gynaecological and oncological laparoscopic work."

Put us to the test!

We would welcome the opportunity to visit you and provide you with a device for a free and non-binding trial.



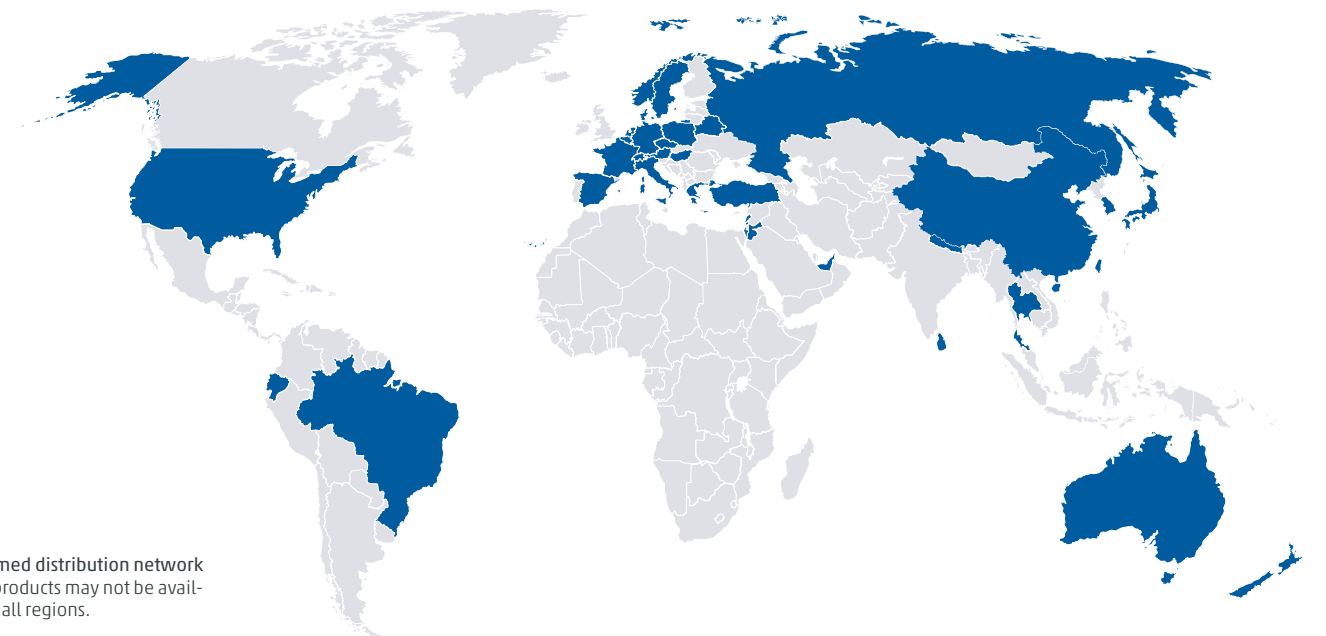
Demo film SOLOASSIST

This is who we are

We have been providing unparalleled solutions to our customers for more than 20 years, supporting surgeons worldwide in minimally invasive surgery.

Minimally invasive techniques have a long surgical tradition. Robot-assisted surgery completes them and brings them to perfection. Our assistance systems enable surgeons to perform minimally-invasive procedures with a high degree of precision, profiting from a maximum relief of their workload.

Thanks to our above-average outlay for development, our superior know-how and a large cooperation network, we create innovative products of highest precision. In order to achieve such a supreme performance, partnerships are essential. In cooperation with a steadily increasing network of qualified sales partners*, we supply and service clinics worldwide. We consider our customers as partners with whom we strive to be successful together, our object being long-term cooperation rather than short-term profit.



* AKTORmed distribution network
Some products may not be available in all regions.



Technical specifications

| Feature | SOLOASSIST II |
|---|--|
| Approval | Compliant with CE standards FDA 510 (k) cleared (K200473) |
| Supply voltage | 100 - 240 Volt, 50 - 60 Hz |
| Maximum power consumption | 60 VA |
| Size | 291 x 167 x 1059 mm |
| Weight | 25.35 lbs |
| Safe working load | 2.2 lbs |
| Driven axis | 3 |
| Joystick | Yes |
| Voice control | Yes, optional |
| Universal Joint & Endoscope holder multiuse | Yes |
| Endoscope size | 4 to 12.7 mm |
| OR table adaption | Quick fastener, suitable for OR tables with European and US size rails, UK rails with additional adapters |
| Main application fields | <ul style="list-style-type: none"> • General surgery • Urology • Gynaecology • Thoracic surgery • Cardiac surgery |
| Manual axis at distal end | Yes, selectable, 8 x 45° |



Surgery | Gynaecology | Urology | Cardiology



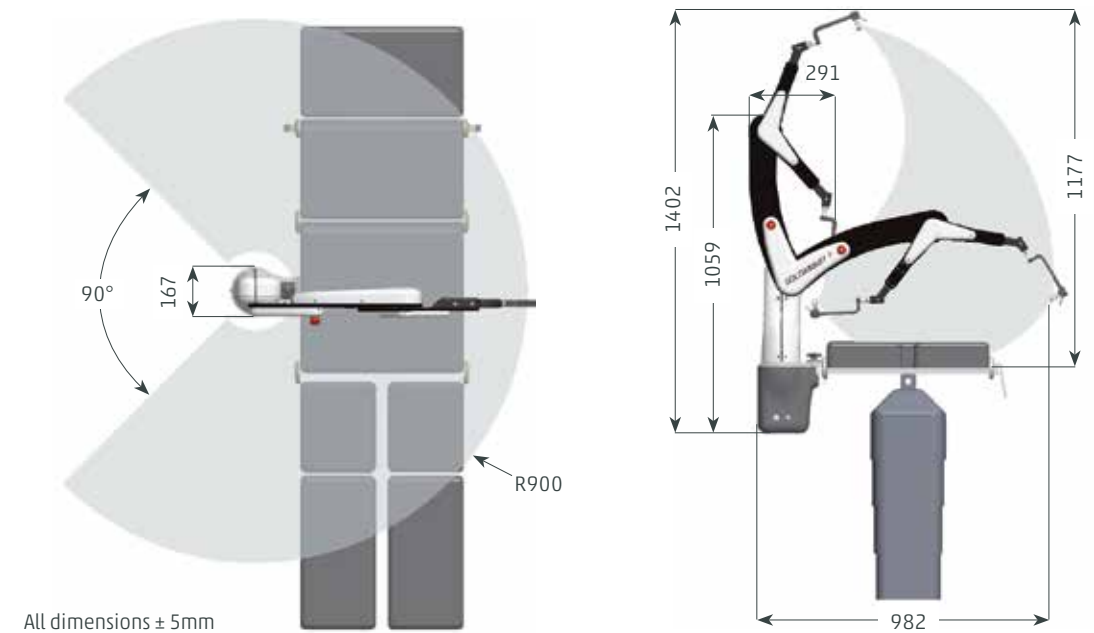
Selected components and accessories

| Article number | Designation | Content |
|----------------------|------------------------------------|---|
| SOLOASSIST II | | |
| 171910 | SOLOASSIST II SET | <ul style="list-style-type: none"> • 1 SOLOASSIST II(141364) • 1 TROLLEY(120874) |
| 182235 | STERILE SET | <ul style="list-style-type: none"> • 1 ENDOSCOPE CLAMP(141363) • 1 UNIVERSAL JOINT(141362) • 1 TENSION SLEEVE D10(141339) • 1 TENSION SLEEVE D5(141365) • 1 STERILISATION TRAY(172099) |
| 182246 | BUNDLE JOYSTICK-LH (LEFT HAND) | <ul style="list-style-type: none"> • 1 JOYSTICK-LH(172091) • 3 STERILE COVER PU/50 ea.....(110084) |
| 182248 | BUNDLE JOYSTICK-RH (RIGHT HAND) | <ul style="list-style-type: none"> • 1 JOYSTICK-RH(182198) • 3 STERILE COVER PU/50 ea.....(110084) |
| 171914 | VOICE CONTROL | <ul style="list-style-type: none"> • 1 VOICE CONTROL UNIT(171894) • 1 CONNECTION CABLE(171896) (SOLOASSIST II - VOICE CONTROL) • 1 HEADSET(171882) • 1 CHARGER HEADSET(172039) |

Movement space

In respect to the endoscope

- Rotation: 360° multi turn
- Tilt: 0° to >90° in respect to the vertical axis
- Zoom: > 300 mm



All dimensions ± 5mm

AKTORmed and SOLOASSIST are registered
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