erbe
power your performance.

USER MANUAL

USER MANUAL

VIO® 3

CE 0123

Unit REF No. 10160-000

Printed by Erbe Elektromedizin

Printed in Germany

Table of Contents

80115-501_V26386
2025-12

80115-501_V26386
2025-12

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 1
General Instructions for Use

This User Manual describes the normal use of the unit.

Note: Report serious incidents with the product to your local dealer or Erbe. If you are a user in the European Union, also report incidents to the responsible authority in your Member State.

Intended Use / Indications for Use

The Erbe electrosurgical unit (ESU/Generator) model VIO 3 with instruments and accessories is intended to deliver high frequency (HF) electrical current for the cutting and/or coagulation of tissue, as well as vessel sealing.

Compatibility

The VIO 3 can be combined with suitable Erbe units and modules (e.g. APC 3, EIP 2, ERBEJET 2, etc.), instruments and accessories.

The VIO 3 can be combined with compatible therapeutic OR integration and imaging systems.

See the Accessories chapter for information on the compatibility of instruments and accessories.

Contraindications

No known contraindications.

Side effects

Known side effects are:

neuromuscular stimulation.

Intended Patient Population

No restrictions.

Environment

For the intended use, the unit may only be operated in premises used for medical purposes.

80115-501_V26386
2025-12

Qualification of user

For the intended use, the unit may only be operated by medical professionals who have been trained in the use of the unit or combination of units on the basis of the User Manual.

Performance characteristics

Performance characteristics relating to the intended use are:

Provision of a defined HF power.

80115-501_V26386
2025-12

Chapter 2
Safety Instructions

Safety notations

⚠ DANGER

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

indicates a potentially hazardous situation which, if not avoided, may result in property damage.

80115-501_V26386
2025-12

Meaning of the note

"Note:"

Refers a) to manufacturer's information that relates directly or indirectly to the safety of people or protection of property. The information does not relate directly to a risk or dangerous situation.

Refers b) to manufacturer's information that is important or useful for operating or servicing the unit.

Who must read this User Manual?

Knowledge of the User Manual is absolutely essential for correct operation of the unit.

The User Manual must therefore be read by everyone who works with the unit.

Anyone who prepares, sets, disassembles, cleans and disinfects the unit must also read the User Manual.

Please pay particular attention to the safety instructions in each chapter.

Compliance with safety information

Working with medical units is associated with certain risks to patients, medical personnel and the environment. Risks cannot be entirely eliminated by design measures alone.

Safety does not depend solely on the unit. Safety depends to a large extent on the training of medical personnel and correct operation of the unit.

The safety instructions in this chapter must be read, understood and applied by everyone who is working with the unit.

Read the user manuals for all products that are used with the unit.

Structure of safety instructions

The safety instructions are structured according to the following risks:

- Operating errors and incorrect installation by persons without training
- Risks due to the environment
- Malfunctions to other equipment caused by the unit, malfunctions to the unit caused by other equipment
- Electric shock
- Fire / explosion
- Burns
- Risk of infection
- Inadvertent tissue damage
- Stimulation of nerves and muscles
- Risks due to incorrect use of the neutral electrode
- Defective unit
- Damage to the unit and accessories
- Notes

80115-501_V26386
2025-12

Operating errors and incorrect installation by persons without training

⚠ WARNING

Operating errors and incorrect installation by persons without training

Persons without training can operate or install the unit incorrectly.

Risk of injury or death for patients and medical staff! Risk of damage to property.

⇨ The unit may only be used and installed by persons who have been trained on how to use and install it properly according to this User Manual.

⇨ Training may only be carried out by persons who are suitable on the basis of their knowledge and practical experience.

⇨ In the event of uncertainties or if you have any questions, please contact Erbe Elektromedizin. You will find the addresses in the address list at the end of this User Manual.

Risks due to the environment

⚠ WARNING

Unsuitable temperature or level of humidity during operation

If you operate the unit at an unsuitable temperature or level of humidity, it may sustain damage, fail, or not perform properly.

Risk of injury to patient and medical personnel.

⇨ Operate the unit at a suitable temperature and level of humidity. You will find the tolerances for temperature and humidity in the Technical Data.

⇨ If other ambient conditions must be observed for operation of the unit, you will also find them in the Technical Data.

⚠ WARNING

Unsuitable temperature or humidity in transit or storage

If you transport or store the unit at an unsuitable temperature or level of humidity, it may sustain damage and fail.

Risk of injury to patient and medical personnel.

⇨ Transport and store the unit at a suitable temperature and level of humidity. You will find the tolerances for temperature and humidity in the Technical Data.

⇨ If other ambient conditions must be observed for transport and storage of the unit, you will also find them in the Technical Data.

NOTICE

Insufficient acclimatization time, unsuitable temperature during acclimatization

If the unit was stored or transported below or above a certain temperature, it will take a certain time and temperature to acclimatize.

If you do not observe the rules, the unit can sustain damage and fail.

⇨ Acclimatize the unit according to the rules in the Technical Data.

NOTICE

Overheating of the unit due to poor ventilation

If ventilation is poor, the unit can overheat, sustain damage, and fail.

⇨ Install the unit in such a way that there is an unobstructed circulation of air around the housing. Installation in confined wall recesses is prohibited.

⚠ WARNING

Penetration of fluid into the unit during operation or when cleaning the unit

Risk of electric shock to the medical personnel.

The unit may become damaged and fail.

⇨ Make sure no liquid can penetrate the unit.

⇨ Do not place vessels containing liquids on top of the unit.

⇨ If fluid has penetrated into the unit, take the unit out of operation immediately. You can only start using the unit again once it has been checked by a service technician.

80115-501_V26386
2025-12

Malfunctions to other equipment caused by the unit, malfunctions to the unit caused by other equipment

⚠ WARNING

Interference with electronic units due to the electrosurgical unit

The activated electrosurgical unit can affect the performance of electronic units by causing interference.

Risk of injury to patient and medical personnel.

The units may fail or not perform properly.

⇨ Position the electrosurgical unit, the cords of the instruments, and the cord of the neutral electrode as far away as possible from electronic units.

⇨ Position the cords as far away as possible from the cords of electronic units.

⚠ WARNING

Stacked units

If you place the unit next to or stack it with other units, the units may affect each other.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Place the unit where possible only near Erbe units or stack the unit where possible only on Erbe units.

⇨ If it is necessary to operate the unit near or stacked together with units from other manufacturers, keep as much distance as possible between the units. Check whether the units are affecting each other: Are the units behaving unusually? Are faults occurring? If yes, increase the distance between the units.

⚠ WARNING

Use of non-approved EMC-relevant accessories

This can result in the increased emission of electromagnetic interference or reduce the electromagnetic immunity of the unit.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Only use cable that is specified in the table *"EMC-relevant accessories"*, see chapter *"Notes on electromagnetic compatibility (EMC)"*.

⇨ If you are using accessories from other manufacturers, check whether the Erbe unit is interfering with other units or being affected by interference itself. You cannot use the unit if there is any interference.

80115-501_V26386
2025-12

⚠ WARNING

Interference with cardiac pacemakers, internal defibrillators, or other active implants

Activation of the electrosurgical unit may affect the performance of active implants or damage them.

Risk of injury or death for patients!

⇨ In the case of patients having active implants, consult the manufacturer of the implant or the competent department of your hospital prior to performing surgery.

⇨ Do not position the neutral electrode near cardiac pacemakers, internal defibrillators, or other active implants.

⚠ WARNING

Interference with the unit from portable and mobile HF telecommunications units (e.g. mobile phones, WLAN units)

Electromagnetic waves emitted by portable and mobile HF telecommunications units may affect the unit.

Risk of injury to patient and medical personnel.

The unit may fail or not perform properly.

⇨ When using portable and mobile HF telecommunications units, including their accessories, there must be a distance of at least 30 cm between them and the unit and its cords.

Electric shock

⚠ WARNING

Defective grounded power outlet, power supply network without proper grounding, inferior-quality power cord, incorrect line voltage, multiple power outlets, extension cords

Risk of electric shock and other injuries to the patient and medical personnel! Risk of damage to property.

⇨ Connect the unit / cart to a properly installed grounded power outlet.

⇨ Only connect the unit to a power supply network with proper grounding.

⇨ Use the compatible Erbe power cord (see the *Accessories, Compatible power cords* chapter).

⇨ Check the power cord for damage. You must not use a damaged power cord.

⇨ The supply voltage must match the voltage specified on the unit's rating plate.

⇨ Do not use multiple power outlets.

⇨ Do not use extension cords.

80115-501_V26386
2025-12

⚠ WARNING

Damaged unit, damaged accessories, modified unit, and modified accessories

Risk of electric shock to the patient and medical personnel!

Risk of injury to patient and medical personnel!

Risk of burns to the patient and medical personnel!

Risk of material damage.

⇨ Check the unit and accessories for damage before each use (e.g. footswitch, instrument cables and cart).

⇨ You must not use a damaged unit or damaged accessories. Replace defective accessories.

⇨ If the unit or cart is damaged, please contact our customer service.

⇨ Blown power fuses may only be replaced by a competent technician.

⇨ For your safety and that of the patient: Never attempt to perform repairs or make modifications yourself. Any modification will invalidate liability on the part of Erbe Elektromedizin GmbH.

⚠ WARNING

Connection of unit / cart and power supply during cleaning and disinfection

Risk of electric shock to the medical personnel!

⇨ Switch off the unit. Unplug the power plug of the unit / cart.

⚠ WARNING

The user touches the patient and the connections on the unit at the same time.

Patient and medical staff may be put at risk by compensating currents.

Risk of injury to patient and medical staff. The unit can fail.

⇨ Do not touch the patient and the connections on the unit at the same time.

80115-501_V26386
2025-12

Fire / explosion

In electrosurgery electric sparks and arcs occur at the instrument. Flammable gases, vapors, and liquids can be set alight or caused to explode.

⚠ WARNING

Flammable anesthetics

Risk of explosion to the patient and medical personnel! Risk of damage to property.

⇨ Do not use flammable anesthetics when an operation is being performed on the head or thorax.

⇨ If use is unavoidable, you must evacuate the anesthetics before performing electrosurgery.

⚠ WARNING

Flammable gas mixture in TUR (Transurethral Resection) and TCR (Transcervical Endometrial Resection)

Hydrogen and oxygen can ascend into the roof of the bladder, the upper part of the prostate, and the upper part of the uterus. If you resect into this gas mixture, it could combust.

Risk of combustion to the patient!

⇨ Allow the gas mixture to escape through the resectoscope sheath.

⇨ Do not resect into the gas mixture.

⚠ WARNING

Flammable endogenous gases in the gastrointestinal tract

Risk of explosion to the patient!

Risk of burns to the user.

⇨ Extract the gases before performing electrosurgery or irrigate with CO_2.

⚠ WARNING

Combustion-supporting gases, e.g. oxygen, nitrous oxide

The gases can accumulate in materials like cotton wool or gauze. The materials become highly flammable.

Risk of fire to the patient and medical personnel! Risk of damage to property.

⇨ Do not use combustion-supporting gases when an operation is being performed on the head or thorax.

⇨ If use is unavoidable, you must evacuate the combustion-supporting gases before performing electrosurgery.

⇨ Remove any jeopardized (e.g. cotton wool or gauze) materials before performing electrosurgery.

⇨ Check the oxygen-carrying tubes and connections for leaks.

⇨ Check the endotracheal tubes and their cuffs for leaks.

⇨ Before using argon plasma coagulation (APC) in the tracheobronchial system it is absolutely essential that you observe the specific safety information and instructions in the User Manual for the argon plasma unit!

⚠ WARNING

Active or hot instruments in contact with combustible materials

Materials like gauze, swabs, and cloths can catch fire.

Risk of fire to the patient and medical personnel! Risk of damage to property.

⇨ Do not bring active or hot instruments into contact with combustible materials.

⇨ Put instruments down in a safe place: sterile, dry, non-conductive, and easy to see. Instruments that have been put down must not come into contact with the patient, medical personnel, or combustible materials.

80115-501_V26386
2025-12

⚠ WARNING

Flammable detergents and disinfectants, flammable solvents in adhesives used on the patient and on the unit / cart

Risk of fire and explosion to the patient and medical personnel! Risk of damage to property.

⇨ Use products that are not flammable.

If the use of flammable products is unavoidable, proceed as follows:

⇨ Allow the products to evaporate completely before switching on the unit.

⇨ Check whether flammable liquids have accumulated under the patient, in body recesses such as the navel, or in body cavities such as the vagina. Remove any liquids before performing electrosurgery.

⚠ WARNING

Ignition of anesthetics, skin cleansers, and disinfectants in potentially explosive atmospheres

If you place the unit in a potentially explosive atmosphere, anesthetics, skin cleansers, and disinfectants can ignite.

Risk of fire and explosion to the patient and medical personnel! Risk of damage to property.

⇨ Do not place the unit in potentially explosive atmospheres.

⚠ WARNING

Application of electrosurgery using an oxygen concentration in the tracheobronchial system that is too high

Risk of fire in the respiratory tract for the patient!

⇨ Reduce the oxygen supply below a critical threshold in accordance with therapeutic guidelines before activating the instrument in the tracheobronchial system.

80115-501_V26386
2025-12

Burns

⚠ WARNING

Damaged unit, damaged accessories, modified unit, and modified accessories

Risk of electric shock to the patient and medical personnel!

Risk of injury to patient and medical personnel!

Risk of burns to the patient and medical personnel!

Risk of material damage.

⇨ Check the unit and accessories for damage before each use (e.g. footswitch, instrument cables and cart).

⇨ You must not use a damaged unit or damaged accessories. Replace defective accessories.

⇨ If the unit or cart is damaged, please contact our customer service.

⇨ Blown power fuses may only be replaced by a competent technician.

⇨ For your safety and that of the patient: Never attempt to perform repairs or make modifications yourself. Any modification will invalidate liability on the part of Erbe Elektromedizin GmbH.

⚠ WARNING

Using unsuitable accessories

Risk of injury to patient and medical personnel.

⇨ Observe the notes in the *Accessories* chapter.

⚠ CAUTION

HF leakage current flows through metal parts

The patient must not have contact with electrically conductive objects. That includes metal parts of the operating table, for example. HF current can be discharged through points of contact accidentally (HF leakage current).

Risk of burns to the patient!

⇨ Position the patient on dry, antistatic drapes.

⇨ If the drapes can become wet during the surgery due to sweat, blood, irrigation liquid, urine, etc., lay a waterproof plastic sheet under the drapes.

⚠ CAUTION

The connecting cables (e.g., instrument cable, neutral electrode cable) are touching each other or the patient.

Risk of burns to the patient and medical personnel!

⇨ Do not place the connecting cables on the patient.

⇨ Place the connecting cables separate from each other.

⚠ CAUTION

HF leakage current flows through monitoring electrodes

HF current can be discharged through points of contact between the skin and monitoring electrodes accidentally (HF leakage current).

Risk of burns to the patient!

⇨ Position monitoring electrodes as far away as possible from the procedural field (area where electrosurgical instruments are used).

⇨ Do not use needle electrodes for monitoring during electrosurgery.

⇨ Where possible, use monitoring electrodes that contain devices to limit high-frequency current.

⚠ CAUTION

HF leakage current flows through skin-to-skin points of contact

HF current can be discharged through skin-to-skin points of contact accidentally (HF leakage current).

Risk of burns to the patient!

⇨ Prevent skin-to-skin points of contact. For example, lay dry gauze between the patient's arms and body.

80115-501_V26386
2025-12

⚠ WARNING

Unintentional activation of the instrument

Risk of burns to the patient and medical personnel!

⇨ Put instruments down in a safe place: sterile, dry, non-conductive, and easy to see. Instruments that have been put down must not come into contact with the patient, medical personnel, or combustible materials.

⇨ Instruments that have been put down must not come into contact with the patient, not even indirectly. An instrument can come into contact with the patient indirectly through electrically conductive objects or wet drapes, for example.

⚠ CAUTION

Mixing up the footswitches if several electrosurgical units are used

The user activates an unwanted electrosurgical unit.

Risk of injury to the patient.

⇨ Place the footswitch of the electrosurgical unit next to the surgeon who is working with the electrosurgical unit.

⇨ Mark the footswitches to allocate them to the electrosurgical units.

⚠ WARNING

Hot instruments

Even non-active instruments that are still hot can burn the patient or medical personnel.

⇨ Put instruments down in a safe place: sterile, dry, non-conductive, and easy to see. Instruments that have been put down must not come into contact with the patient, medical personnel, or combustible materials.

⇨ Instruments that have been put down must not come into contact with the patient, not even indirectly. An instrument can come into contact with the patient indirectly through electrically conductive objects or wet drapes, for example.

⚠ WARNING

The unit does not shut off

The active instrument cannot be deactivated.

Risk of burns to the patient and medical personnel!

⇨ Press the power switch of the unit.

80115-501_V26386
2025-12

⚠ WARNING

Unintentional activation of the instrument during an endoscopic application

If the instrument is activated and remains activated during an endoscopic application, the patient can suffer burns when the instrument is removed.

All points that come into contact with the active part of the instrument are at risk. The cause of unintentional activation can be a fault in the footswitch or unit for example.

You will recognize unintentional activation from the continuous activation signal, even though you have released the footswitch.

Risk of burns to the patient!

⇨ Turn off the power switch on the electrosurgical unit immediately. Only then should the instrument be removed from the patient's body.

⚠ WARNING

Capacitive coupling between the cords of two instruments

When one instrument is activated, current can be transferred to the cord of another instrument (capacitive coupling).

The patient can suffer burns if the non-active, but still live instrument has direct or indirect contact with the patient.

Risk of burns to the patient and medical personnel!

⇨ Lay the cords of instruments so that they are as far apart as possible.

⇨ Put instruments down in a safe place: sterile, dry, non-conductive, and easy to see.

⇨ Instruments that have been put down must not come into contact with the patient, medical personnel, or combustible materials.

⇨ Instruments that have been put down must not come into contact with the patient, not even indirectly. An instrument can come into contact with the patient indirectly through electrically conductive objects or wet drapes, for example.

⇨ In electrosurgical contact procedures: Touch the tissue before activating the instrument.

⇨ In electrosurgical non-contact procedures (APC, spray coagulation): Place the instrument at the usual working distance from the tissue before activating the instrument.

⚠ WARNING

Capacitive coupling between the instrument and the hybrid trocar

When an instrument is activated, current can be transferred to the trocar without any contact (capacitive coupling).

Risk of burns to the patient and medical personnel!

⇨ Do not use hybrid trocars (i.e., a combination of metal and plastic) if you are using monopolar instruments.

80115-501_V26386
2025-12

⚠ WARNING

Unsuitable endoscopes, resectoscopes with electrosurgery

Risk of burns to the patient and medical personnel!

⇨ Use only endoscopes or resectoscopes that have been approved for electrosurgery.

⚠ WARNING

Activation time too long, effects too high

The longer the activation time of the unit and the higher the effect, the higher the risk of accidental tissue damage.

Risk of accidental tissue damage to the patient!

⇨ Activate the unit for as short a time as possible relative to the required surgical effect.

⇨ The temperature at the neutral electrode site increases during long and continuous activations. Therefore, ensure that the cooling phases between activations are sufficient.

⇨ Set the effect as low as possible relative to the required surgical effect. However, an effect level that is too low can be dangerous, e.g. gas embolisms with the APC (Argon Plasma Coagulation), because the plasma does not ignite at an effect level that is too low.

⇨ If you are unable to achieve a surgical effect with an activation time / effect level that is sufficient judging from experience, this can be due to a problem with the electrosurgical unit or accessories:

⇨ Check the instrument regularly for soiling with insulating tissue remnants. Clean the instrument if it has become soiled.

⇨ Check the neutral electrode to make sure it is secure.

⇨ Check the connectors on all cords to make sure they are secure.

⚠ WARNING

Activation of the unit with no knowledge of active settings

If the user does not understand the active settings of the unit, he can cause the patient accidental tissue damage.

⇨ Check the active settings on the display of the unit, after: switching on the unit, connecting up an instrument, and changing the program.

⚠ WARNING

The user was not informed of a change in maximum activation time

Risk of accidental tissue damage to the patient!

⇨ All users must be informed in good time of any change in maximum activation time. That is, before the user works with the modified maximum activation time for the first time.

⇨ The temperature at the neutral electrode site increases during long and continuous activations; therefore, ensure that the cooling phases between activations are sufficient.

80115-501_V26386
2025-12

⚠ WARNING

Tissue structures / vessels with a cross-section that is small or becoming smaller

If monopolar HF current flows through parts of the body with a relatively small cross-section, there is a risk of unintentional coagulation for the patient!

⇨ If possible, use the bipolar coagulation technique.

⚠ WARNING

Activation signal not audible

You do not hear the signal when the electrosurgical unit is activated.

Risk of burns to the patient and medical personnel!

⇨ Adjust the activation signal so that it is clearly audible.

⚠ WARNING

Contact or too close proximity of the activated instrument to metal objects in or on the patient's body.

Risk of burns to the patient!

Metal implants may be damaged, e.g., hip arthroplasties.

⇨ Do not touch any metal objects, e.g., hemostats, hip arthroplasties, with the activated instrument.

⇨ Keep the activated instrument as far away as possible from metal objects, e.g., hemostats, hip arthroplasties.

80115-501_V26386
2025-12

⚠ WARNING

A hand-held metal instrument is touched with the active instrument (electrode)

Risk of hand burns!

⇨ Do not touch a hand-held metal instrument with the active instrument.

⚠ WARNING

The interconnections of the VIO 3 carry HF voltage during activation.

If you touch the interconnections during activation, you can suffer burns.

⇨ You may only remove the cap (1) (fig. below) if you install the VIO 3 on an APC 3.

⇨ Keep the cap in a safe place. If you disconnect the VIO 3 from the APC 3, you must replace the cap on the interconnections.

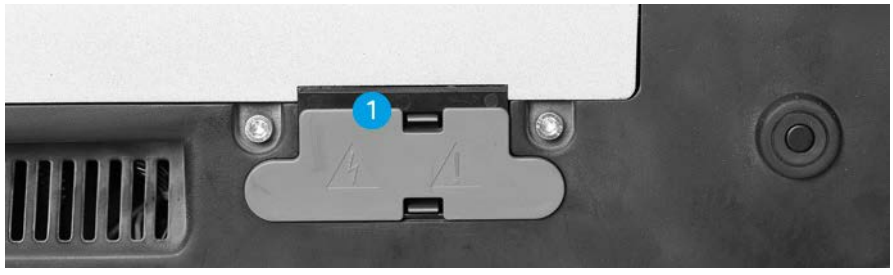


Fig. 2-1

⚠ CAUTION

HF leakage current flows through the skin of medical personnel

Risk of burns to the patient and medical personnel!

⇨ Do not come in contact with the patient while the surgeon is using an active electrosurgical instrument on the patient.

⚠ WARNING

The instrument is inserted into an adapter or cable that is plugged into an activated socket

Risk of burns to the patient and medical personnel!

⇨ Do not insert instruments into an adapter that is plugged into an activated socket.

⇨ Do not insert instruments into a cable that is plugged into an activated socket.

⚠ CAUTION

Activation of the unit during cleaning of an instrument

Risk of burns for the medical personnel!

⇨ Do not activate the unit while you are cleaning an instrument.

Risk of infection

⚠ WARNING

The unit is contaminated

Risk of infection to the patient and medical personnel.

⇨ Follow the instructions for cleaning and disinfecting the unit.

⚠ WARNING

Alternate use of disinfectant solutions based on different active ingredients

The agents may affect one another. The disinfection effect of the disinfectant solution may be weakened. Risk of infection to the patient and medical personnel.

The housing plastic may become brittle and break. A color reaction may occur with plastics.

⇨ Do not use these substances alternately.

Inadvertent tissue damage

⚠ WARNING

Safety margin between the active instrument and sensitive tissue structures too narrow

Adjacent structures can be damaged by the thermal effect of electrosurgery.

⇨ Ensure that there is a sufficient safety margin between the active instrument and sensitive tissue structures (e.g. nerves, muscles).

80115-501_V26386
2025-12

⚠ CAUTION

Electrically conductive implants can redirect or concentrate current flow.

Risk of burns for the patient and possible damage to the implant.

⇨ In the case of patients wearing electrically conductive implants, consult the manufacturer of the implant or the relevant specialist department of your hospital prior to surgery.

⇨ Position the neutral electrode so that the implant is not located between the active electrode (monopolar instrument) and the neutral electrode.

Stimulation of nerves and muscles

⚠ WARNING

Low-frequency currents stimulate nerves and muscles (Neuromuscular Stimulation)

Low-frequency currents arise either due to low-frequency power sources or partial rectification of the HF current. Spasms or muscle contractions can occur.

Risk of injury to the patient.

⇨ Set the effect as low as possible relative to the required surgical effect. However, an effect level that is too low can be dangerous, e.g. gas embolisms with the APC (Argon Plasma Coagulation), because the plasma does not ignite at an effect level that is too low.

80115-501_V26386
2025-12

Risks due to incorrect use of the neutral electrode

⚠ WARNING

Non-compatible or non-split neutral electrode

When applying a non-compatible neutral electrode, it should be expected that monitoring the contact between neutral electrode and skin is faulty.

When applying a non-split neutral electrode, the contact between neutral electrode and skin is not monitored. If contact between neutral electrode and skin is inadequate, the unit does not emit any visual or acoustic warning signal.

Risk of burns for the patient under the neutral electrode!

⇨ Check in the accompanying papers of the manufacturer whether the neutral electrode is suitable for the VIO unit used.

⇨ Use only suitable neutral electrodes.

⇨ When applying a non-split neutral electrode: Regularly check the neutral electrode for good skin contact.

⇨ Check in the accompanying papers of the manufacturer whether the neutral electrode cable is suitable for the neutral electrode used.

⇨ Use only suitable neutral electrode cables.

⚠ WARNING

Positioning the neutral electrode above the heart

Risk of cardiac arrhythmia for the patient due to function-related currents from neutral electrode monitoring!

⇨ Do not position the neutral electrode over the heart or in the region of the heart.

⚠ WARNING

Incorrect application of the neutral electrode

Risk of burns to the patient!

⇨ Apply the entire contact surface of the neutral electrode to a muscular part of the body with good blood circulation.

⇨ Apply the neutral electrode as close as possible to the procedural field.

⇨ Insert the contact tab of the neutral electrode completely into the connecting clamp. The contact tab must not touch the patient's skin.

⇨ Align the long edge of the neutral electrode (1) towards the procedural field. The current should flow from the instrument towards the long edge of the neutral electrode. See Fig. 2-2.

⇨ Check the neutral electrode regularly for good contact with the patient's skin.

⇨ Check the neutral electrode especially when the patient has been repositioned and after surgical steps where the unit was activated frequently and for a long time.

80115-501_V26386
2025-12

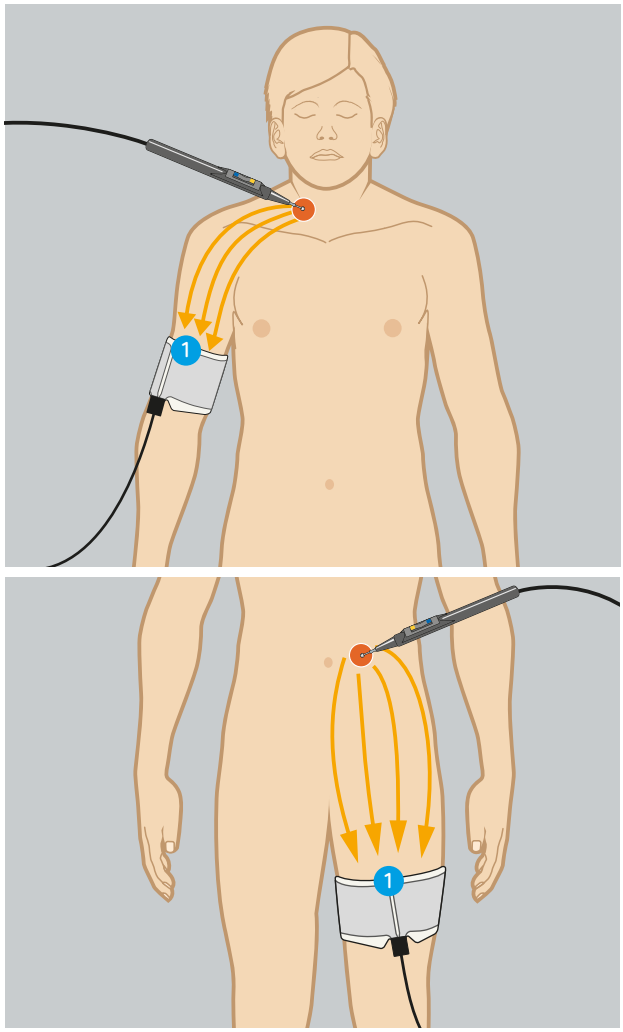


Fig. 2-2

80115-501_V26386
2025-12

Defective unit

⚠ WARNING

Undesirable rise in output level due to failure of electrosurgical unit

Risk of accidental tissue damage to the patient!

⇨ The unit shuts off independently.

⇨ To guard against a possible failure of the electrosurgical unit, have a technical safety check carried out at least once a year.

⚠ WARNING

Technical safety checks not being done

Risk of injury or death for patients and medical staff! Risk of damage to property.

⇨ Have a technical safety check carried out on the unit at least once a year.

⇨ You must not use a unit that is not safe.

⚠ WARNING

Failure of display elements

If display elements fail, you can no longer operate the unit safely.

Risk of injury or death for patients and medical staff!

⇨ You must not use the unit.

Damage to the unit and accessories

⚠ WARNING

Electric load on instrument too high

The instrument can be damaged.

If the damaged area comes into contact with tissue, it can lead to unintentional coagulation.

⇨ Determine the electrical capacity of the instrument. It is either printed on the instrument or can be found in the User Manual. Compare the electrical capacity of the instrument with the maximum HF peak voltage of the required mode.

⇨ Instructions are available in the "Accessories" chapter.

⚠ WARNING

Very long activation cycles without cooling phases

The electrosurgical unit is designed and tested for a relative activation time of 25% (in accordance with IEC 60601-2-2). If you undertake long activation phases without the appropriate cooling breaks, gradual heating under the neutral electrode may occur, or the unit may sustain damage.

Risk of burns to the patient!

⇨ Keep to a 25% relative activation time (see also Technical Data, Operating Mode) if you operate the unit over a prolonged period.

⚠ WARNING

Use of non-approved internal cables by Technical Service

This can result in the increased emission of electromagnetic waves or reduce the immunity of the unit.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Technical Service may only use the internal cables that are listed in the service manual for the unit.

80115-501_V26386
2025-12

Notes

Grounding

Note: If necessary, connect the grounding pin of the unit or the cart to the grounding system of the operating room using a grounding cable.

Use of a defibrillator

Note: All HF sockets and the neutral electrode socket (applied parts) meet Type CF requirements and are protected against the effects of defibrillator discharge.

Measures against smoke during electrosurgical interventions

Note: Erbe recommends using a smoke evacuation system, protective goggles, and a respirator.

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 3
Safety Features

NESSY

What is NESSY?

Should you wish to activate the unit's monopolar mode, you have to connect a neutral electrode and apply it on the patient.

The unit is equipped with a Neutral Electrode Safety System (NESSY), which monitors the neutral electrode, warns of critical situations, and thus prevents burns. Observe the unit's optical and acoustic warning signals. Observe the error and advisory messages from neutral electrode monitoring.

Safety when connecting a split or non-split neutral electrode

You can connect a split or a non-split neutral electrode to the VIO 3. Erbe recommends connecting a split neutral electrode, as it offers enhanced safety with regard to burns.

When connecting a **split neutral electrode**, three safety-relevant properties are monitored:

- the connection to the VIO 3
- the contact to the patient's skin
- the application direction of the neutral electrode (NESSY symmetry monitoring)

When connecting a **non-split neutral electrode**, only one safety-relevant property is monitored:

- the connection to the VIO 3

80115-501_V26386
2025-12

Preferred neutral electrode type

In the VIO 3 *Protected settings*, an authorized person can set whether you wish to work with a split or non-split neutral electrode.

If you connect the preferred type of neutral electrode, you do not need to register the neutral electrode on the VIO 3.

If you connect another type of neutral electrode, VIO 3 asks you: *Which neutral electrode type have you just connected?* You then have to make the decision between a split or a non-split neutral electrode.

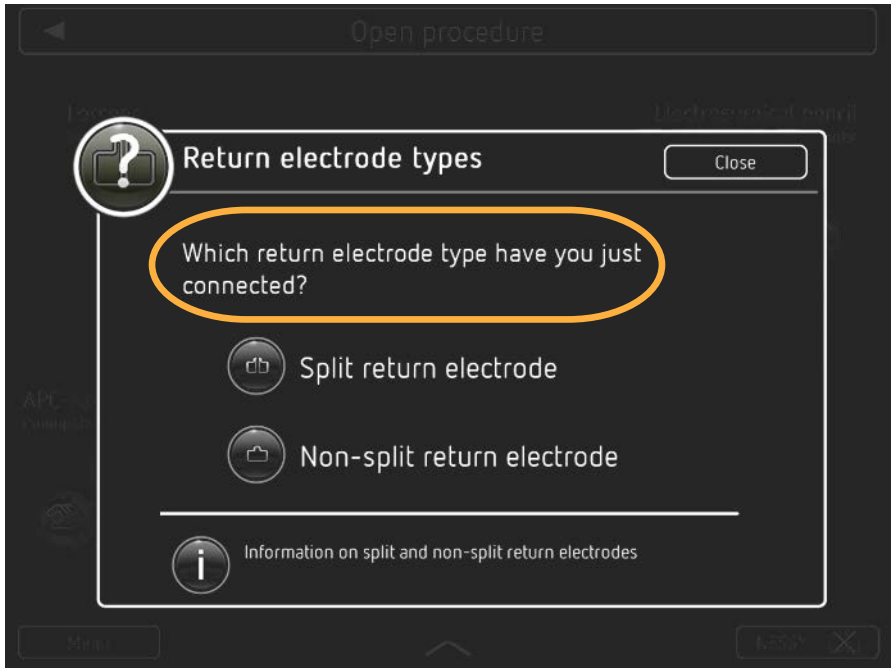


Fig. 3-1

Note: Make sure you actually register the neutral electrode on the VIO 3 that you connect. Otherwise, you cannot activate the monopolar modes.

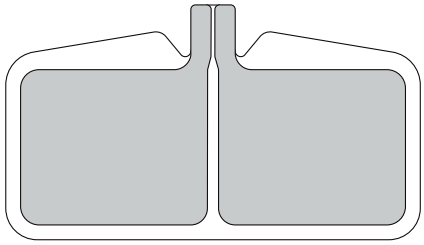


Fig. 3-2

Example: split neutral electrode

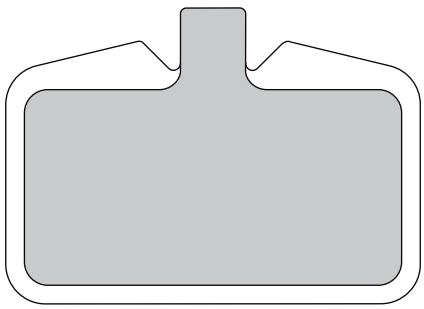


Fig. 3-3

Example: non-split neutral electrode

80115-501_V26386
2025-12

VIO 3 detects no neutral electrode

Fig. 3-4

If you switch on the VIO 3 and the unit detects no neutral electrode, the neutral electrode is crossed out on the screen. The frame of the neutral electrode socket is not lit.

Activation of the monopolar modes is not possible. If you need assistance, touch the *NESSY button*.

Possible cause	Action
No neutral electrode connected	Connect neutral electrode
neutral electrode not applied to the skin	Apply neutral electrode to the skin
Cable damaged	Replace damaged cable
Contact strip is not correctly positioned in the connecting terminal	Insert the contact strip correctly into the connecting terminal
Connector is not correctly in the neutral electrode socket	Plug connector into the neutral electrode socket as far as it goes

80115-501_V26386
2025-12

Split neutral electrode connected

Connection correct

Fig. 3-5

If you connect a split neutral electrode, the unit monitors:

- the connection to the VIO 3
- the contact to the patient's skin
- the application direction of the neutral electrode (NESSY symmetry monitoring)

The neutral electrode on the screen lights green; the frame of the neutral electrode socket lights green. The monopolar mode can be activated.

Connection critical, activation still possible

The neutral electrode on the screen lights green; the frame of the neutral electrode socket lights green. Activation of the monopolar modes is still possible. The neutral electrode monitoring alerts you with a reference to a critical situation.

➢ Check the neutral electrode as soon as possible.

Possible cause	Action
Neutral electrode has too little contact to the skin	The entire surface of the neutral electrode must be applied without creases; the skin must be free of oil, dry and free from hair.
The long edge of the neutral electrode does not point to the procedural field.	Align the long edge of the neutral electrode towards the procedural field
The neutral electrode does not support monitoring of the application direction of the neutral electrode (NESSY symmetry monitoring).	Connect a suitable neutral electrode

Connection faulty, activation not possible

Fig. 3-6

The neutral electrode on the screen lights red; the frame of the neutral electrode socket lights red. Activation of the monopolar modes is not possible. You see a message on the screen.

➢ Check the neutral electrode immediately.

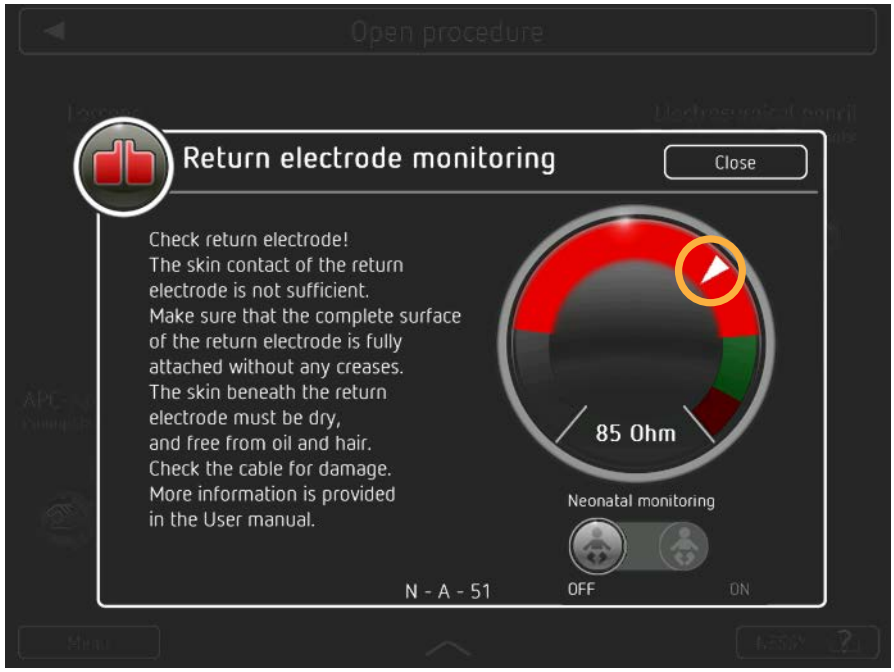


Fig. 3-7

An example for a message from neutral electrode monitoring is given in Fig. 3-7. In addition to the text, you see on the right a resistance display with resistance ranges. If the needle is in the gray or red range, you cannot activate monopolar modes.

80115-501_V26386
2025-12

Possible cause	Action
Cable damaged	Replace damaged cable
Non-split neutral electrode connected, but registered on the VIO 3 as a split neutral electrode	Connect split neutral electrode
Neutral electrode has too little contact to the skin	The entire surface of the neutral electrode must be applied without creases; the skin must be free of oil, dry and free from hair.
The long edge of the neutral electrode does not point to the procedural field.	Align the long edge of the neutral electrode towards the procedural field
The neutral electrode does not support monitoring of the application direction of the neutral electrode (NESSY symmetry monitoring).	Connect a suitable neutral electrode

Assistance on NESSY symmetry monitoring

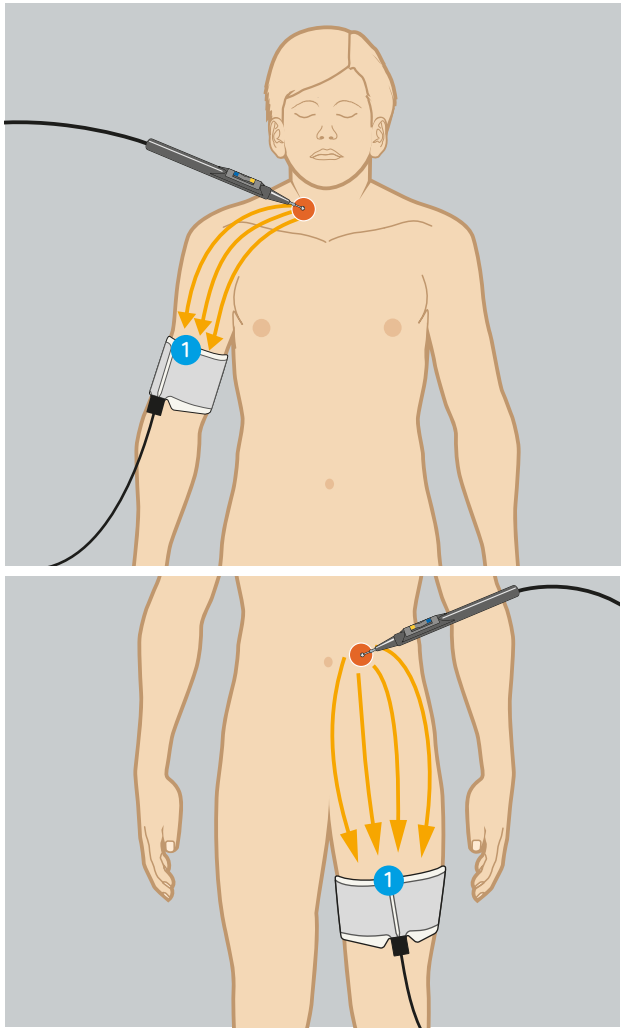


Fig. 3-8

➢ Align the long side of the neutral electrode (1) towards the procedural field. The current should flow from the instrument towards the long edge of the neutral electrode.

80115-501_V26386
2025-12

Non-split neutral electrode connected

Connection correct

Fig. 3-9

If you connect a non-split neutral electrode, the unit monitors:

- the connection to the VIO 3

The neutral electrode on the screen lights green; the frame of the neutral electrode socket lights green. The monopolar mode can be activated.

Connection faulty, activation not possible

Fig. 3-10

The neutral electrode on the screen lights red; the frame of the neutral electrode socket lights red. Activation of the monopolar modes is not possible. You see a message on the screen.

Possible cause	Action
Cable damaged	Replace damaged cable

Note: When applying a non-split neutral electrode, the contact between the skin and the neutral electrode is not monitored! You will not receive a warning if the neutral electrode becomes detached from the skin and there is a risk of burns. The application direction of the neutral electrode is also not monitored. Erbe recommends the use of split neutral electrodes.

80115-501_V26386
2025-12

Neonatal monitoring

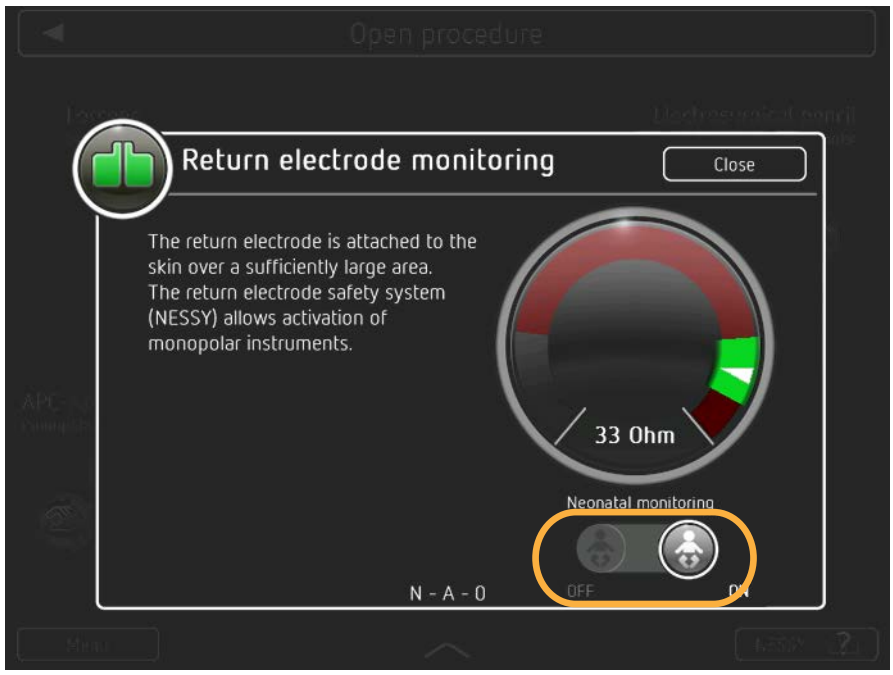


Fig. 3-11

When using a neonatal neutral electrode, you can activate neonatal monitoring. In critical situations you then see the following message on the screen:

"An elevated temperature is possible under the neutral electrode! Activate for as brief a period as possible. Reduce the effect setting if the situation permits."

To switch on the neonatal monitoring, proceed as follows:

1. Touch the *NESSY button* on the main screen.
2. Slide the neonatal monitoring switch to the *ON* position.

Automatic monitoring of the HF output parameters electrical voltage and power

The unit is equipped with automatic monitoring of the HF output parameters (voltage and power). Deviations of the actual value[1] from the setpoint[2] are monitored. If the deviation is so great that the quality of the required CUT or COAG effect is no longer guaranteed, the unit switches off the HF generator and displays a message.

Automatic monitoring of the maximum activation time

With proper application, a HF generator is only briefly activated. A defect in the unit, in the accessories or a user's error may cause the HF generator to be activated unintentionally. To prevent major damage being caused, the activation time is automatically monitored.

The maximum activation time is saved in the unit's *Protected settings*. If the maximum activation time is exceeded, the unit generates an acoustic signal and displays a mes-

1. Actual value: Value actually specified by the unit.
2. Setpoint: Value the unit should specify.

80115-501_V26386
2025-12

sage. The HF generator is automatically switched off. The HF generator can be restarted at any time, resulting in renewed monitoring of the activation time. This prevents major damage being caused by accidental activation over indefinitely long periods.

Custom adaptation of the maximum activation time

Setting of the maximum activation time can only be carried out by an authorized person. The factory setting is 30 seconds.

⚠ WARNING

The user was not informed of a change in maximum activation time

Risk of accidental tissue damage to the patient!

⇨ All users must be informed of a change in the maximum activation time, before the user works with the modified maximum activation time for the first time.

⇨ The temperature at the neutral electrode site increases during long and continuous activations; therefore, ensure that the cooling phases between activations are sufficient.

Protection from operating errors

To prevent operating errors, the displays on the touchscreen are designed such that illogical or incomplete settings are automatically monitored and signalized.

All connection sockets in the application section are arranged in the socket strip next to the front panel. These connection sockets are designed so that only connectors of the proper accessories can be inserted (provided that only the accessories supplied or recommended by the manufacturer of the unit are used).

You can connect up to four instruments simultaneously to the unit. However, for safety reasons you can only activate one instrument. The twinCOAG mode is an exception to this.

Whenever the power switch is switched on, an automatic test program is run. The following errors are detected and are displayed with a message and indicated acoustically:

- The button on the electrode handle is short-circuited or bypassed at low resistance while you switch on at the power switch. The cause can be moisture in the electrode handle.
- The button on the electrode handle is pressed while you switch on at the power switch.
- The contact of a footswitch is short-circuited,a pedal is jammed or a pedal is pressed while you switch on at the power switch.

The message on the touchscreen of the VIO 3 tells you how to remedy the error.

80115-501_V26386
2025-12

Chapter 4
Accessories

Introduction

You can connect a number of instruments and neutral electrodes from different manufactures to the VIO 3.

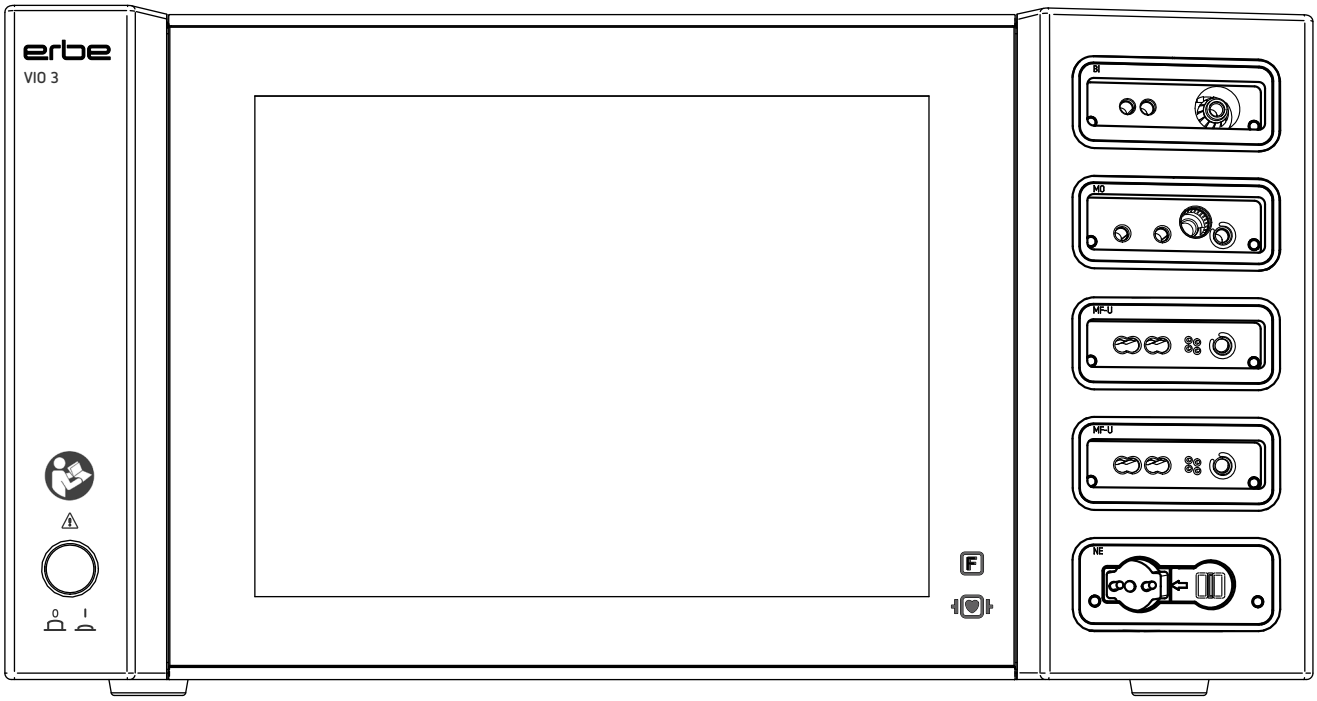
Check Erbe instruments and instruments from other manufacturers for compatibility with the required CUT / COAG mode of the VIO 3 before use. Instructions are available in this chapter.

Check the neutral electrodes from other manufacturers for compatibility with the VIO 3 before use. Instructions are available in this chapter.

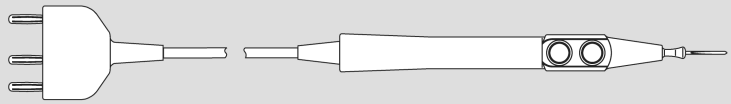
The following offers an overview of example accessories for each accessory category. A complete overview is available in the Erbe accessories catalog and on the Erbe website. We recommend the use of Erbe accessories.

80115-501_V26386
2025-12

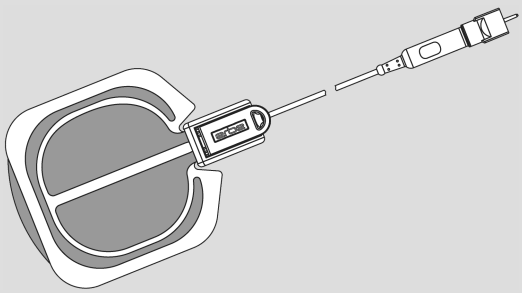
VIO 3 example accessories



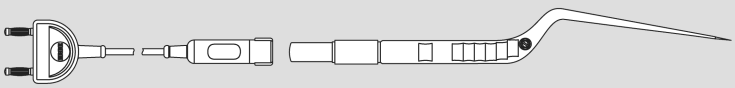
Monopolar electrosurgical pencils, monopolar electrodes



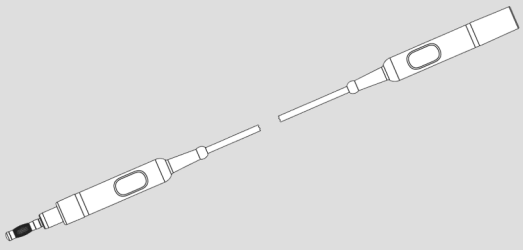
Neutral electrodes



Bipolar instruments, bipolar forceps

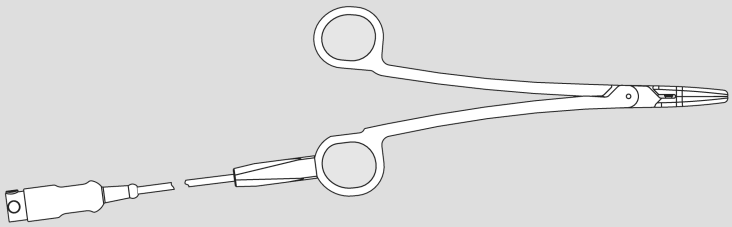


Connecting cables

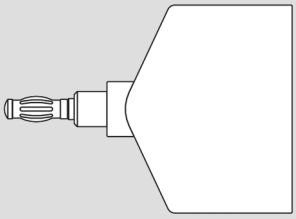


80115-501_V26386
2025-12

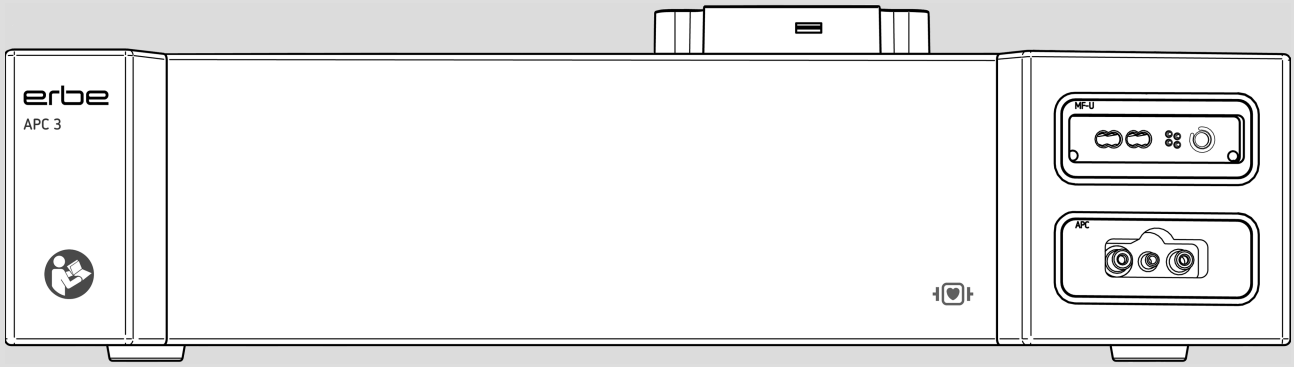
Instruments for vessel sealing



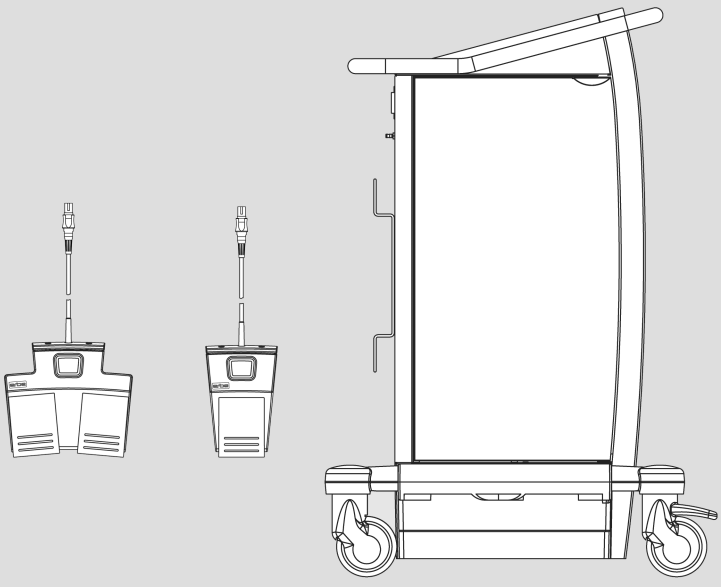
Adapters



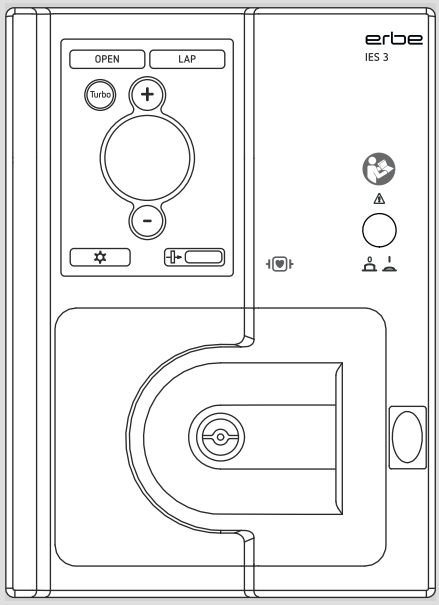
APC 3 (unit for argon-plasma coagulation)



Accessories for units and modules



IES 3 (smoke evacuation)



80115-501_V26386
2025-12

Compatible units

You can connect the VIO 3 with compatible Erbe units using an ECB cable. In this case, the units communicate with each other.

With hybrid instruments, you can use the VIO 3 and other Erbe units simultaneously, without the units being connected via an ECB cable. In this case, the units do not communicate with each other. Please observe the notes on use for the respective hybrid instrument.

With the APC 3 there is a compatible module that is not functional on its own as a unit. It is connected to and controlled by the VIO 3 via the interlayer connection (see APC 3 User Manual).

Compatible instruments

You may only connect an instrument to the VIO 3 if its compatibility with the VIO 3 is indicated in the User Manual.

The supported instrument plugs are described in the chapter *Description of socket hardware*. If you have a compatible instrument whose plug does not fit, you can insert an adapter between the plug and the socket.

If you have an instrument without a cable, connect a suitable cable.

Please see the Erbe accessories catalog for adapters and cables.

Check compatibility of instrument and CUT / COAG mode with the help of the Upmax display

⚠ WARNING

Electric load on instrument too high

The instrument can be damaged.

If the damaged area comes into contact with tissue, it can lead to unintentional coagulation.

⇨ Determine the electrical capacity of the instrument. It is either printed on the instrument or can be found in the User Manual. Compare the electrical capacity of the instrument with the maximum HF peak voltage of the required mode.

⇨ Observe the following instructions.

1. Determine the electrical capacity of the instrument

The maximum electrical capacity of the instrument is indicated on the instrument or in the User Manuals of the instruments. The unit of measurement for electrical capacity is Vp. For example, an instrument can have a maximum electrical capacity of 5 kVp (5000 Vp). Another instrument can have a maximum electrical capacity of 500 Vp. You are not permitted to load the instrument beyond these values.

Example

You wish to operate an instrument that has a maximum electrical capacity of 500 Vp. You wish to operate an instrument in autoCUT mode with effect 5.5. See the display *max. voltage* in the CUT effect window.

80115-501_V26386
2025-12

2. Call up the CUT effect window

1. If the instrument symbol for the required instrument is not highlighted, touch the relevant instrument symbol.
2. Touch the CUT effect display.

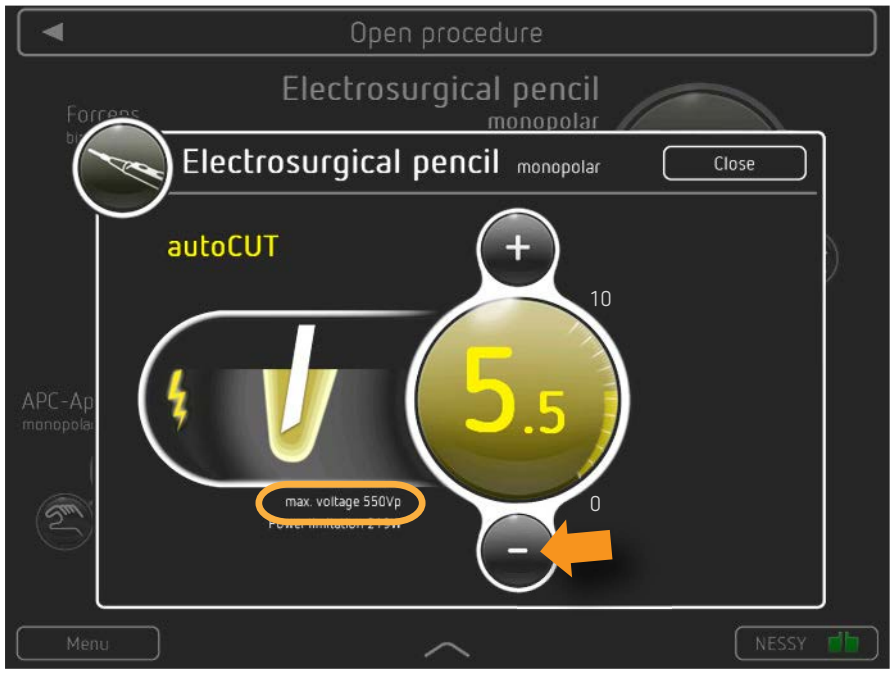


Fig. 4-1

The autoCUT mode with effect 5.5 would burden the instrument with a peak voltage of 550 Vp. You must not operate the instrument with effect 5.5 in autoCUT mode. The electrical capacity of the instrument (500 Vp) is lower than the maximum HF peak voltage (550 Vp) of the autoCUT mode with effect 5.5.

➢ Reduce the effect. Touch the minus button until the HF peak voltage is equal to or less than 500 Vp.

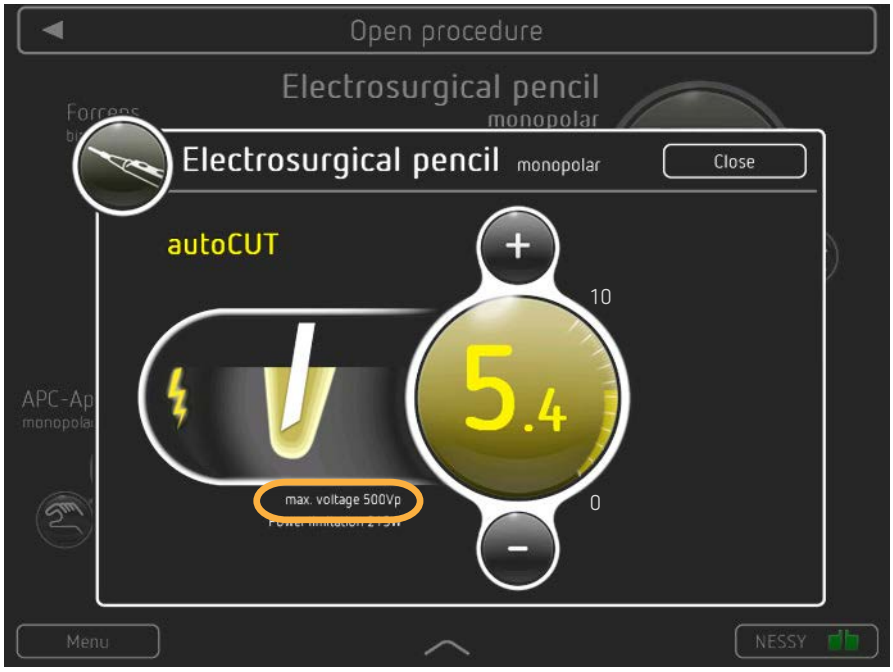


Fig. 4-2

80115-501_V26386
2025-12

The HF peak voltage (500 Vp) of the autoCUT mode with effect 5.4 is the same as the electrical capacity of the instrument (500 Vp). You may work with this setting.

In the same way, you can test the compatibility of the instrument and COAG mode. Touch the COAG effect display for this purpose.

Compatible APC instruments

You can only connect Erbe APC instruments with an integrated filter to the APC socket of the APC 3. You can only set the mode, effect and argon flow within a specified range with these instruments.

Compatible neutral electrodes

⚠ WARNING

Non-compatible or non-split neutral electrode

When applying a non-compatible neutral electrode, it should be expected that monitoring the contact between neutral electrode and skin is faulty.

When applying a non-split neutral electrode, the contact between neutral electrode and skin is not monitored. If contact between neutral electrode and skin is inadequate, the unit does not emit any visual or acoustic warning signal.

Risk of burns for the patient under the neutral electrode!

⇨ Check in the accompanying papers of the manufacturer whether the neutral electrode is suitable for the VIO unit used.

⇨ Use only suitable neutral electrodes.

⇨ When applying a non-split neutral electrode: Regularly check the neutral electrode for good skin contact.

⇨ Check in the accompanying papers of the manufacturer whether the neutral electrode cable is suitable for the neutral electrode used.

⇨ Use only suitable neutral electrode cables.

80115-501_V26386
2025-12

The supported neutral electrode plugs are described in the chapter *Description of socket hardware*.

If you have a neutral electrode without a cable, connect a suitable cable. Please see the Erbe accessories catalog.

Depending on the neutral electrode (non-split or split), the Neutral Electrode Safety System (NESSY) of the Erbe VIO and compatible neutral electrodes monitors various parameters:

- The unit / neutral electrode connection
- The skin / neutral electrode contact
- The application direction of the neutral electrode

Familiarize yourself in the chapter Safety Features which individual parameters are monitored. When using non-split neutral electrodes, the skin / neutral electrode contact is not monitored.

When using third-party neutral electrodes, you must check in the accompanying papers of the manufacturer whether the neutral electrode is suitable for the VIO used.

Compatible footswitches

You can only connect Erbe footswitches to the VIO 3. There are special footswitches for the VIO 3 series.

If you connect a footswitch, refer to the chapter *Controls on the back, Footswitch sockets*.

Compatible power cords

Use the following compatible Erbe power cords.

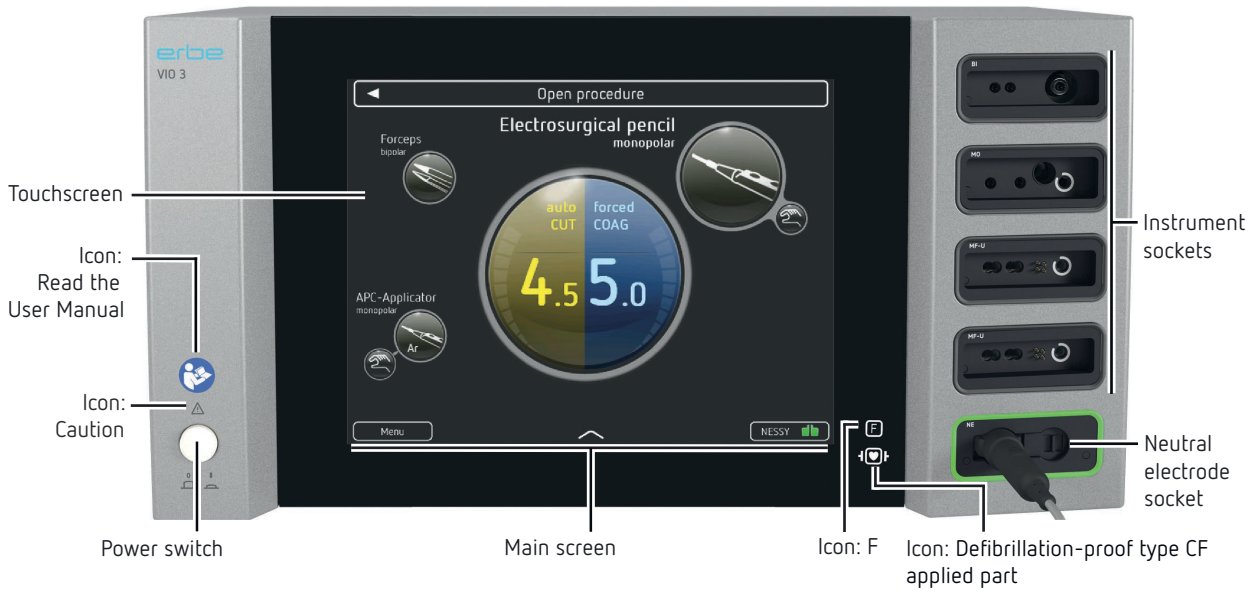
REF no. (supplied with the unit)	REF no. (spare part)	Length, amperage	Power plug Erbe designation	Power plug international designation
51704-037	52704-037	2.5 m, 10 A	303A	E+F
51704-038	52704-038	2.5 m, 10 A	404	G
51704-039	52704-039	4 m, 10 A	NEMA 5-15 P	B
51704-040	52704-040	2.5 m, 10 A	403	L
51704-042	52704-042	5 m, 10 A	303A	E+F
51704-043	52704-043	5 m, 10 A	404	G
51704-045	52704-045	5 m, 10 A	403	L
51704-050	52704-050	4 m, 10 A	PRC/3	I
51704-051	52704-051	4 m, 10 A	RA/3	I
51704-052	52704-052	4 m, 10 A	512	J
51704-053	52704-053	4 m, 10 A	DK3	K
51704-054	52704-054	4 m, 10 A	BR/3	N
51704-057	52704-055	5 m, 10 A	VII	E+F
51704-058	52704-058	5 m, 10 A	IL/3G	H
51704-075	52704-075	5 m, 10 A	I	I

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 5
Description of the Controls

Controls on the front panel



80115-501_V26386
2025-12

Fig. 5-1

Power switch

Unit on/off. The unit is only fully disconnected from the power supply once the power plug is pulled out. Install the unit such that the power plug could be easily disconnected from the power source.

Main screen

On the main screen you see all information and controls necessary for operating the unit during surgery.

The main screen is the control center of the VIO 3. On this screen you can select the instruments , set the instruments, monitor the neutral electrode and call up other screens.

"F" icon

The symbol designates a constructional safety measure. The patient circuit is insulated from ground. The risk of leakage currents and therefore the risk of burns is substantially reduced for the patient.

Icon: Defibrillation-proof type CF applied part

All HF sockets and the neutral electrode socket (applied parts) meet Type CF requirements and are protected against the effects of defibrillator discharge.

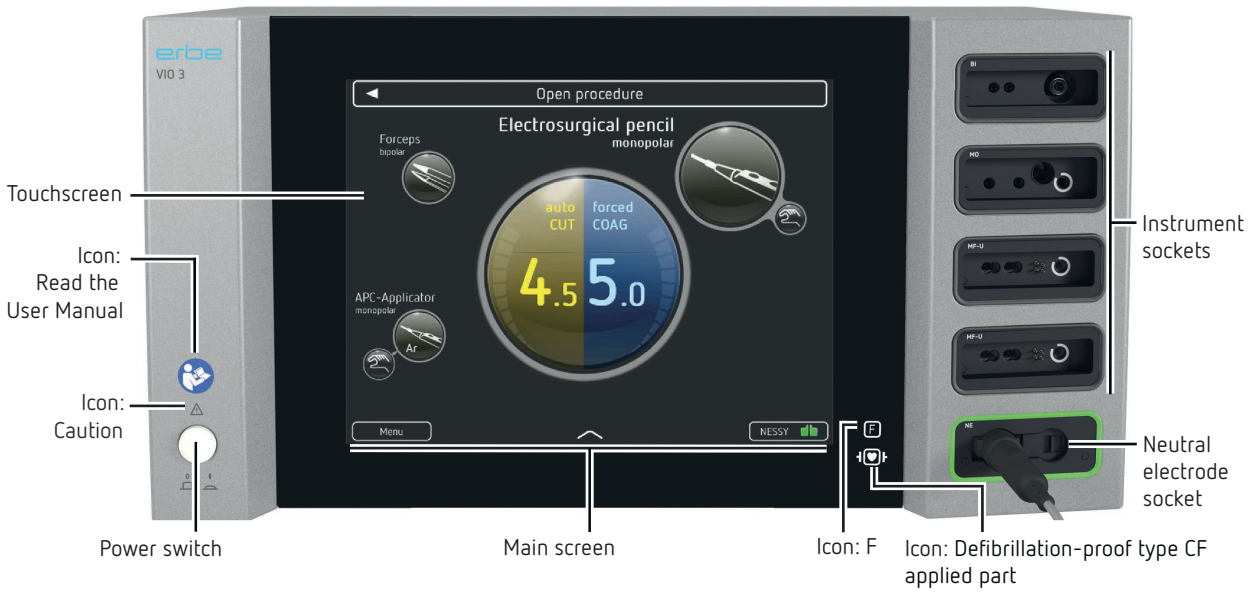


Fig. 5-2

Neutral electrode socket

Should you wish to activate the unit's monopolar mode, you have to connect a neutral electrode and apply it on the patient.

Instrument sockets

Connect HF instruments at these sockets.

Touchscreen

Touch-sensitive screen to set the VIO 3. The controls on the touchscreen change dependent on the task currently undertaken. Use your fingers to control the VIO 3.

Icon: Read the User Manual

Read the User Manual before switching on and using the unit.

Icon: Caution

Indicates that the safety instructions in the user manual must be read before switching the unit on.

80115-501_V26386
2025-12

VIO 3 main screen

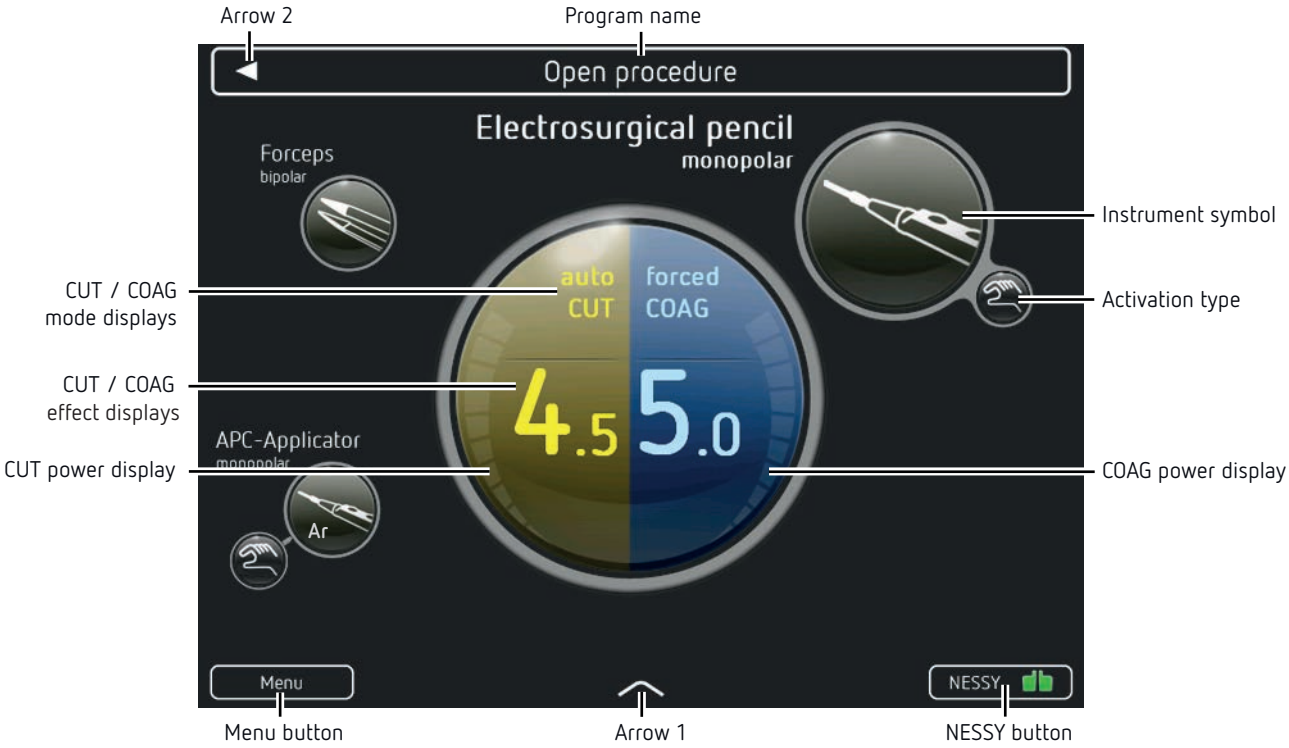


Fig. 5-3

80115-501_V26386
2025-12

On the main screen you see the symbols of the instruments stored in the program. A series of further controls are also visible.

If you touch an instrument symbol, connect or activate the corresponding instrument, the instrument symbol is highlighted (Example: monopolar electrode handle). In addition to information on the allocated activation type, you then obtain information on:

- CUT mode / COAG mode
- CUT effect / COAG effect
- Power output for CUT / COAG and progress display for sealing in the thermoSEAL mode

Only if the instrument symbol is highlighted, can you change the instrument mode and effect.

Menu button

If you touch the menu button you call up a menu to adapt a large number of unit settings. These settings are explained in detail in the next chapter.

Arrow 1

If you touch Arrow 1, you call up the 'Assign activation type' field. Using symbols you can assign footswitches, AUTO START and AUTO STOP to the instruments.

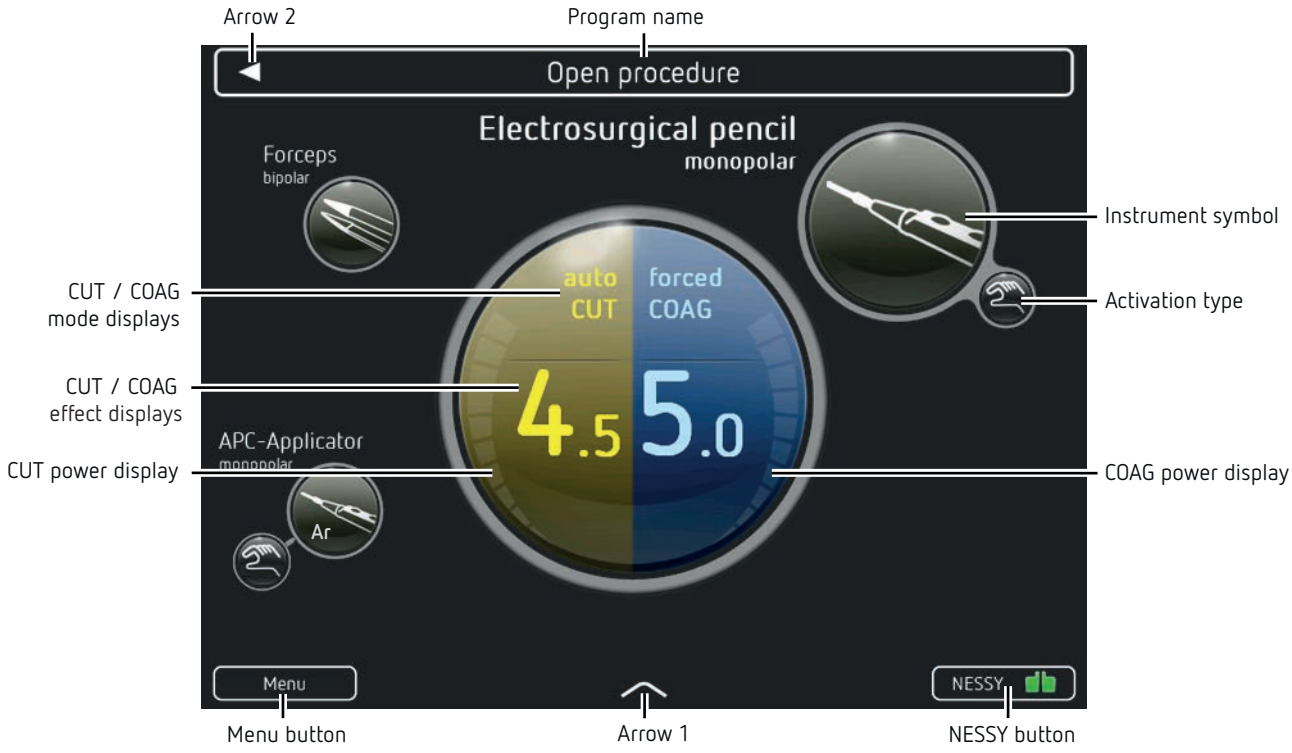


Fig. 5-4

NESSY button

The neutral electrode symbol provides information on what neutral electrode you have connected: split or non-split. If the neutral electrode symbol is green, you can activate monopolar modes. If the neutral electrode symbol is red, you cannot activate monopolar modes.

If you touch the NESSY button, you call up the 'neutral electrode monitoring' window. Here you receive information about the status of the neutral electrode. You can also switch the neonatal monitoring on and off.

CUT and COAG power display

The segments of the CUT and COAG power displays show you whether and how much power is output.

In the thermoSEAL mode, the display is a progress display for sealing.

Activation type

Shows the activation types assigned to the instrument.

Instrument symbol

The instrument symbols show the instruments in the program. If you connect an instrument which is not stored in the program, the unit displays an additional instrument symbol.

If an instrument is connected to the unit, there is a connection between the instrument symbol and the mode/effect displays. The outer circle of the instrument symbol is highlighted white. No instrument is connected in the above fig.

If you touch an instrument symbol, you see the set modes and effects for the instrument in the mode and effect displays.

80115-501_V26386
2025-12

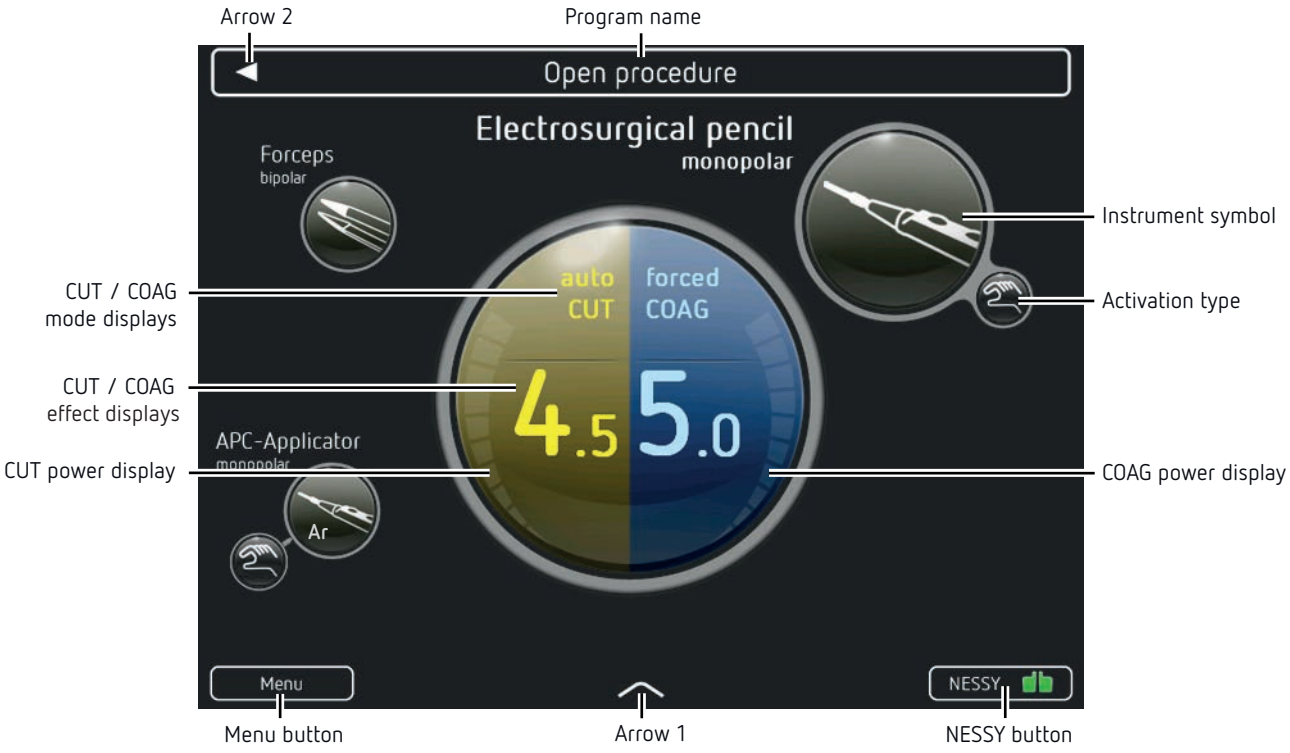


Fig. 5-5

80115-501_V26386
2025-12

Program name

Name of the selected program.

Arrow 2

If you touch Arrow 2, you call up the program list.

CUT and COAG mode displays

Displays the CUT and COAG mode for the selected instrument. If you touch the display, you call up the window to change the mode.

CUT and COAG effect displays

Displays the CUT and COAG effect for the selected instrument. If you touch the display, you call up the window to change the effect.

Controls on the back

Fig. 5-6

Footswitch sockets

You connect a two-pedal and a one-pedal footswitch to these sockets. The combinations of two two-pedal footswitches or two one-pedal footswitches are not possible.

ECB sockets (Erbe Communication Bus)

These sockets serve to connect other units with the VIO 3.

Grounding terminal connection

If necessary, connect the grounding pin of the unit to the grounding system of the operating room using a grounding cable.

Power connection

Open the cover. The symbol on the cover means: Notice, consult accompanying documents. In addition to the User Manual, please also consult all other documents included with the unit.

Connect the unit to a properly installed, grounded power outlet. Use the compatible Erbe power cord (see the Accessories, Compatible power cords section). If the unit is installed on an Erbe cart with auxiliary network outlet: Connect the unit to an auxiliary network outlet. Connect the unit to the mains power using the cart power cord. Follow the instructions in the user manual for the cart.

Optionally, you can connect a power cord with V lock. The unit plug locks into the power connection of the VIO 3 and cannot loosen on its own.

Power fuses

The unit is protected with power fuses. If one of these power fuses has blown, the unit may not be used on the patient again until it has been checked by a competent technician. The values of the power fuses are specified on the unit's rating plate. Only spare fuses with these values may be used.

80115-501_V26386
2025-12

Chapter 6
Working with VIO 3

Checking the unit and accessories

⚠ WARNING

Damaged unit, damaged accessories, modified unit, and modified accessories

Risk of electric shock to the patient and medical personnel!

Risk of injury to patient and medical personnel!

Risk of burns to the patient and medical personnel!

Risk of material damage.

- ⇨ Check the unit and accessories for damage before each use (e.g. footswitch, instrument cables and cart).
- ⇨ You must not use a damaged unit or damaged accessories. Replace defective accessories.
- ⇨ If the unit or cart is damaged, please contact our customer service.
- ⇨ Blown power fuses may only be replaced by a competent technician.
- ⇨ For your safety and that of the patient: Never attempt to perform repairs or make modifications yourself. Any modification will invalidate liability on the part of Erbe Elektromedizin GmbH.

80115-501_V26386
2025-12

Make power connection

The supply voltage must match the voltage specified on the unit's rating plate.

Connect the unit to a properly installed, grounded power outlet. Use the compatible Erbe power cord (see the Accessories, Compatible power cords section). If the unit is installed on an Erbe cart with auxiliary network outlet: Connect the unit to an auxiliary network outlet. Connect the unit to the mains power using the cart power cord. Follow the instructions in the user manual for the cart.

Switching on, self-test

- ➢ Use the power switch to switch the unit on. The unit then carries out a self-test and tests all sockets. The units and footswitches connected are detected. All socket frames are lit. You see the version number of the software on the screen.

In the unit's *Further settings* you can set which start screen you wish to start with after the self-test:

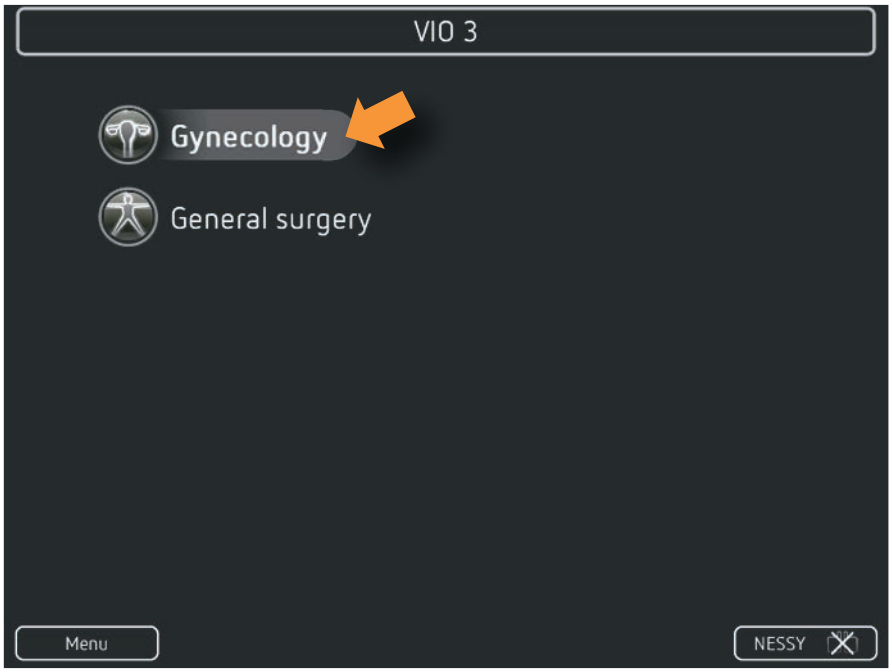
- *Program group list*,
  e.g. with the program groups Gynecology, General surgery

- Last used *Program list*, e.g. the Gynecology program list with the programs Open Procedure, Laparoscopic Procedure
- *FocusView* from the last used program = main screen of the unit with symbols of the instruments stored in the program and further controls

Although this setting is freely accessible, it should only be changed in coordination with all those who use the unit.

These instructions start with the *Program group list*.

Selecting the program



80115-501_V26386
2025-12

Fig. 6-1

1. Select a program group. Example: *Gynecology*

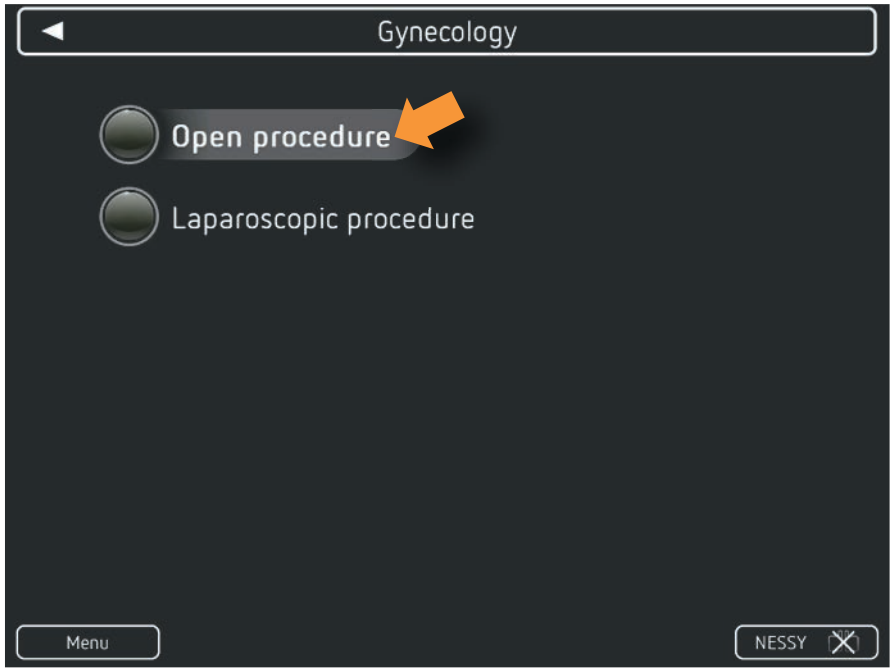


Fig. 6-2

2. Select a program. Example: *Open Procedure*

Connecting neutral electrode, applying it on the patient

Fig. 6-3

1. Apply the neutral electrode on the patient.
2. Connect the neutral electrode cable to the neutral electrode socket.

Note: Under certain circumstances, the VIO 3 may ask you: *Which return electrode type have you just connected?* You then have to make the decision between a split or a non-split neutral electrode.

Make sure you actually connect the neutral electrode to the VIO 3 you register. Otherwise, you cannot activate the monopolar modes.

80115-501_V26386
2025-12

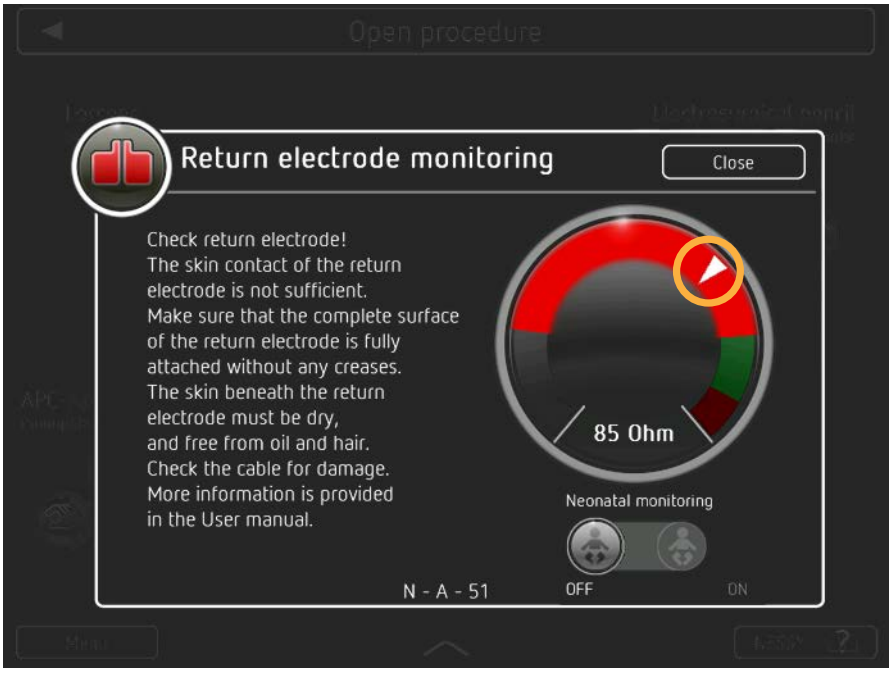
Check neutral electrode

Fig. 6-4

If you have connected the neutral electrode correctly, the neutral electrode on the screen lights green and the frame of the neutral electrode socket also lights green. The monopolar mode can be activated.

If the neutral electrode lights red or is crossed out, the frame of the neutral electrode socket lights red or is not lit, touch the NESSY button to obtain assistance.

Read detailed information on the function of the neutral electrode in the *Safety Features* chapter. Here you also find assistance for various error situations.



80115-501_V26386
2025-12

Fig. 6-5

If a neutral electrode error arises during the surgery, e.g. too little contact with the patient's skin, a window for neutral electrode monitoring opens with a message.

An example for a message from neutral electrode monitoring is given in Fig. 6-5. In addition to the text, you see on the right a resistance display with resistance ranges. If the needle is in the gray or red range, you cannot activate monopolar modes.

Connecting the first instrument

Connecting the instrument with the aid of the pin configuration

Each instrument has a pin configuration showing the type and separations of the plug-in contacts. Each socket has a pin configuration showing the type and separations of the socket inputs. The pin configuration of the instrument and the socket must match.

1. Determine whether the instrument is monopolar or bipolar.
   Monopolar instruments can be connected to monopolar sockets, multifunctional sockets and MF-U sockets. Bipolar instruments can be connected to bipolar sockets, multifunctional sockets and MF-U sockets. APC instruments must be connected to the APC sockets.
2. Consult the pin configuration of the instrument and socket.
3. Connect the instrument to the socket with suitable pin configuration.

If you plug the instrument into the wrong socket, the unit displays a message. Then you cannot activate the instrument.

Connecting the instrument with the aid of the VIO 3

Fig. 6-6

1. Touch the instrument symbol. Example: *Forceps bipolar*

80115-501_V26386
2025-12

Fig. 6-7

The outer circle of the instrument symbol is flashing. The instrument symbol is highlighted.

Fig. 6-8

2. Connect the instrument to the socket with flashing socket frame.

80115-501_V26386
2025-12

Connecting a second instrument

➢ Connect a second instrument. Example: *Electrode handle monopolar*

Fig. 6-9

After plugging in the instrument, the socket frame lights white. The instrument symbol of the instrument is highlighted on the main screen.

Meaning of the instrument symbols in different displays

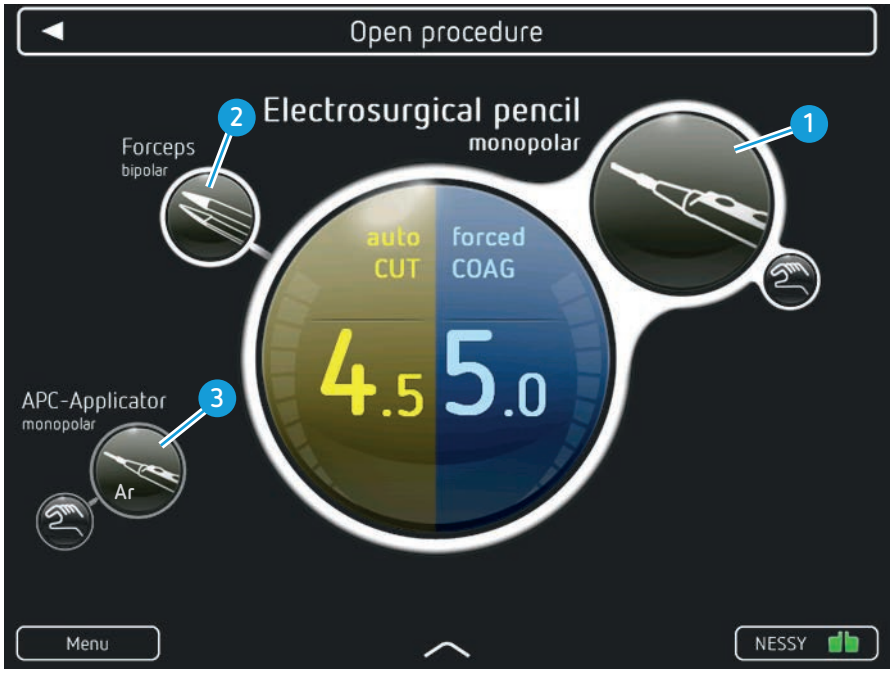


Fig. 6-10

If you touch an instrument symbol, connect or activate the corresponding instrument, the instrument symbol is highlighted (Example: monopolar electrode handle). In addition to information on the allocated activation type, you then obtain information on:

- CUT mode / COAG mode
- CUT effect / COAG effect

80115-501_V26386
2025-12

- Power output for CUT / COAG and progress display for sealing in the thermoSEAL mode

Only if the instrument symbol is highlighted, can you change the instrument mode and effect.

The monopolar electrode handle (1) has just been plugged, activated or the corresponding instrument symbol touched:

- The instrument symbol is highlighted in size.
- The outer circle of the instrument symbol is white.
- The instrument symbol is closely connected to the mode and effect displays.

You can check and change the instrument mode and effect in this display.

The bipolar forceps are connected to the unit (2):

- The outer circle of the instrument symbol is white.
- The instrument symbol is connected to the mode and effect displays with a thin line.

The APC applicator is not connected to the unit (3):

- The outer circle of the instrument symbol is grayed out.
- The instrument symbol is not connected to the mode and effect displays.

Connecting an instrument which is not stored in the program

If required, you can connect instruments which are not stored in the program. The unit then displays an additional instrument symbol on the main screen. Under certain circumstances, a window with an instrument list may open.

➢ Select the instrument in the instrument list.

Note: The instrument additionally connected is not saved in the program. After switching off the unit, it no longer exists.

You can only save modified programs if you have access to the unit's *Protected settings*. See section: *Overwrite modified program or save as a new program*.

80115-501_V26386
2025-12

Checking program settings

In order to check the mode and effect settings of an instrument, the instrument symbol has to be highlighted.

➢ Prior to activation of instruments, check the program settings. You have to know which instrument you are activating with which activation type and which mode and effect settings.

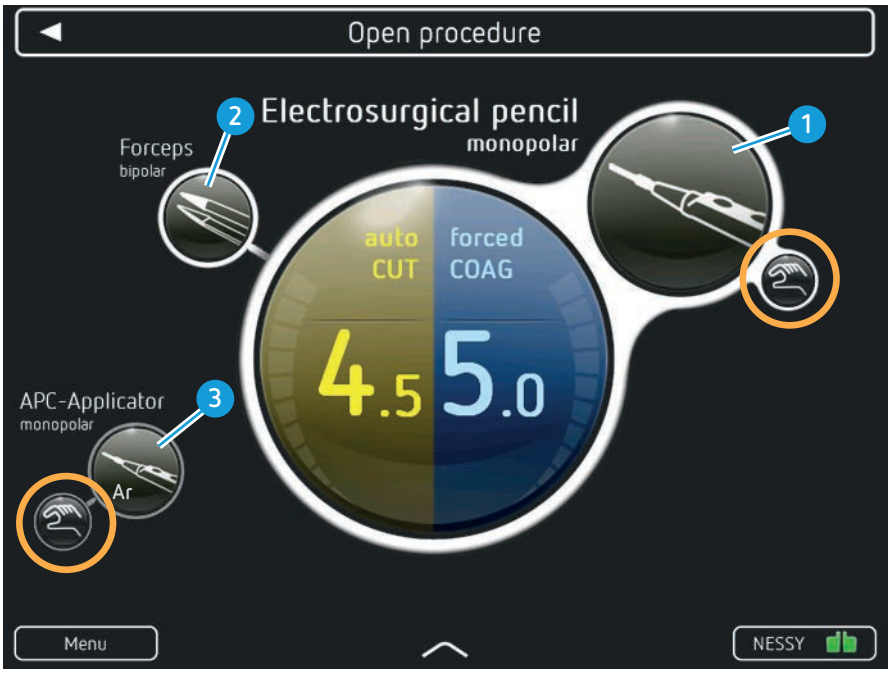


Fig. 6-11

In the main screen you see at a glance which instruments are connected and which activation type is assigned to them:

In the *Open procedure* example program, a monopolar electrode handle (1) and bipolar forceps (2) are connected.

- The monopolar electrode handle (1) can be activated with the finger switch.
- The bipolar forceps (2) are not assigned any activation type. They cannot be activated.
- The APC applicator (3) is not connected. It could be activated with the finger switch.

In the *Open intervention* example program the instrument symbol for the monopolar electrode handle (1) is touched. You would activate the instrument with the following settings:

- autoCut, effect 4.5
- forcedCoag, effect 5.0

80115-501_V26386
2025-12

Changing mode and effect

Changing mode

1. If the instrument symbol for the required instrument is not highlighted, touch the relevant instrument symbol.
2. Touch the CUT or COAG mode display.

Fig. 6-12

3. A window with an mode list opens. The active mode is highlighted gray (Example: forcedCOAG). Touch the required mode.

Changing effect

1. If the instrument symbol for the required instrument is not highlighted, touch the relevant instrument symbol.
2. Touch the CUT or COAG effect display.

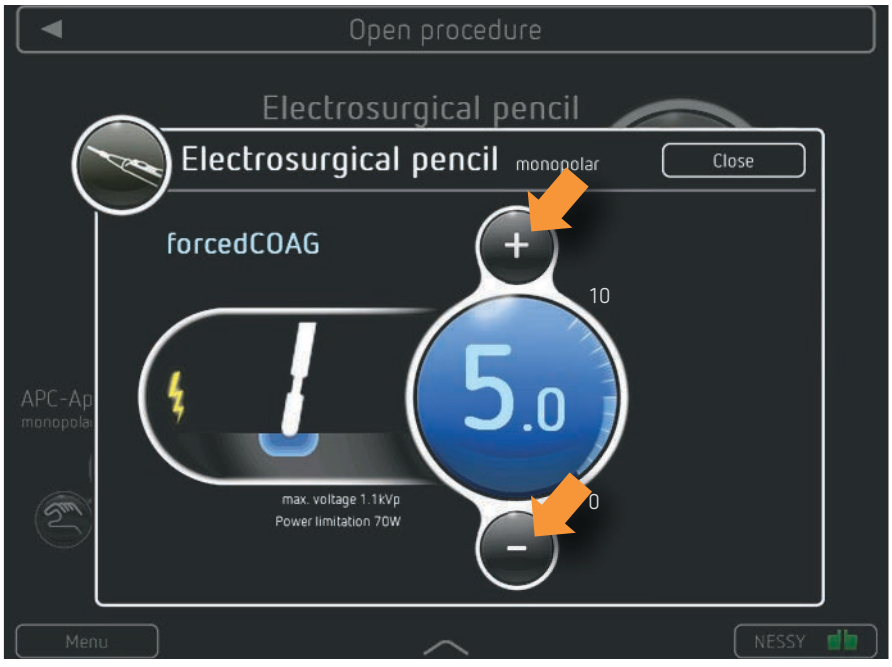


Fig. 6-13

80115-501_V26386
2025-12

3. A window with an effect display opens (Example: forcedCOAG, effect 5.0). Select the required effect with the + / - buttons.
4. Close the window.

Note: While you change the effect, the operating surgeon cannot activate the unit for several seconds.

Note: The changes are not stored in the program. After switching off the unit, they no longer exist.

You can only save modified programs if you have access to the unit's *Protected settings*. See section: *Overwrite modified program or save as a new program*.

Assigning activation type

➢ Touch the arrow on the lower edge of the main screen (Arrow 1).

Fig. 6-14

The *Assign activation type* field opens. The field contains symbols for the activation types two-pedal footswitch, one-pedal footswitch, AUTO START, AUTO STOP.

Meaning of the symbols in different displays

Fig. 6-15

If a footswitch is not connected, the corresponding symbol is crossed out.

Fig. 6-16

If *"Assignment of two-pedal footswitch"* is permitted in the *Protected settings*, you also see two symbols: the yellow CUT pedal and the blue COAG pedal of the two-pedal footswitch.

80115-501_V26386
2025-12

Fig. 6-17

If the instruments stored in the program do not permit AUTO START or AUTO STOP, the corresponding symbol is grayed out.

If the *"Use of AUTO START"* is blocked in the *Protected settings* , the corresponding symbol is grayed out.

Assigning activation type

80115-501_V26386
2025-12

Fig. 6-18

1. Touch a symbol. Example: Two-pedal footswitch
   You see docking points on all instruments, which allow the selected activation type.
2. Drag the symbol to the docking point of the required instrument.
   In the 'Assign activation type' field, the field is grayed out after assignment.

You can also drag symbols from one instrument to another.

Note: The changes are not stored in the program. After switching off the unit, they no longer exist.

You can only save modified programs if you have access to the unit's *Protected settings*. See section: *Overwrite modified program or save as a new program*.

Activating VIO 3

⚠ WARNING

Activation of the unit with no knowledge of active settings

If the user does not understand the active settings of the unit, he can cause the patient accidental tissue damage.

⇨ Check the active settings on the display of the unit, after: switching on the unit, connecting up an instrument, and changing the program.

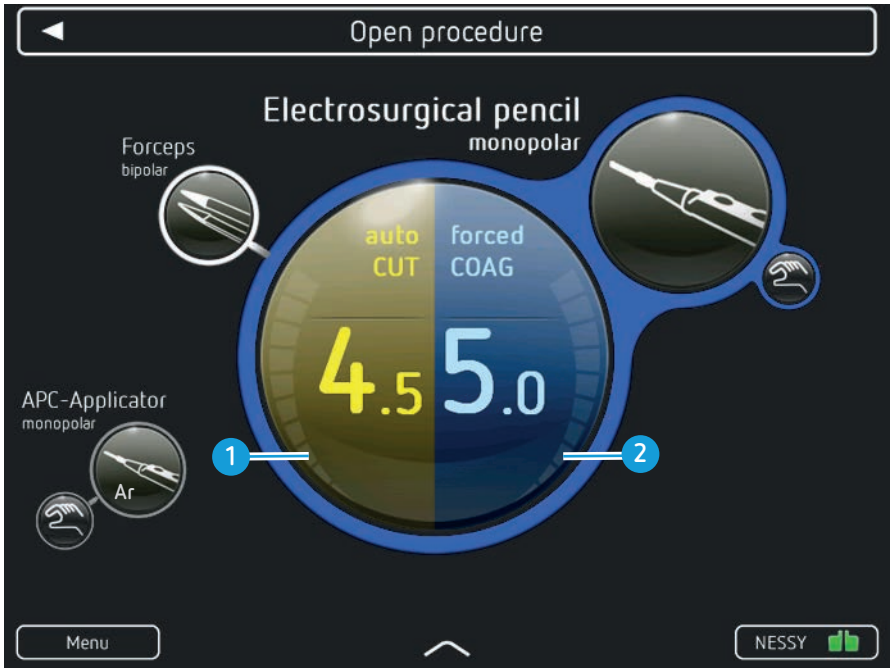


Fig. 6-19

You can activate all instruments to which an activation type is assigned.

➢ Operate the finger switch, footswitch or use AUTO START. Example: The monopolar electrode handle is activated in COAG mode.

The outer circle of the mode and effect displays and the outer circle of the instrument symbol lights up blue with COAG activation, yellow with CUT activation.

The segments of the CUT and COAG power displays (1) (2) show you whether and how much power is output.

In the thermoSEAL mode, the display is a progress display for sealing.

80115-501_V26386
2025-12

Fig. 6-20

The socket frame of the activated instrument symbol lights up blue with COAG activation, yellow with CUT activation.

You hear an activation sound.

Note: You can also activate instruments whose settings you do not see. You should be sure which settings you activate.

Subprograms, changing between subprograms

Function of subprograms

Subprograms can only be created by authorized persons. Each program can have up to 6 subprograms.

Different settings are saved in the subprograms of a program for the instruments. Settings may be e.g. mode, effect or assignment of a footswitch. Subprograms therefore offer you the possibility of switching settings of an instrument, without changing the mode, effect, footswitch assignment etc. on the touchscreen.

80115-501_V26386
2025-12

Appearance of subprograms

Fig. 6-21

You see subprograms as tabs under the name of the program (3). Example: Subprogram *monopolar* (1) and *bipolar* (2). The tab of the active subprogram is highlighted in white.

Changing between subprograms

➢ Press the ReMode button of the footswitch.

– Or –

➢ If the handpiece of the instrument has a ReMode button, press the ReMode button of the handpiece.

– Or –

➢ If the handpiece of the instrument does not have a ReMode button, press the CUT and COAG buttons at the same time. ReMode change-over with the buttons CUT and COAG is not possible with handpieces with so-called "compensators."

– Or –

➢ An assistant can touch the tab of the subprogram on the touchscreen.

Functions in the "Menu" screen

Calling up the Instructions

1. Call up the *Menu* with the Menu button.
2. Select the *Instructions* menu item in the left column.
   The VIO 3 instructions are opened on the display.

Last messages called up

1. Call up the *Menu* with the Menu button.
2. Select the *Last messages* menu item in the left column.
   The *Last messages* screen shows you the last messages VIO 3 has displayed.

Calling up the System overview

1. Call up the *Menu* with the Menu button.
2. Select the *System overview* menu item in the left column.
   The *System overview* screen shows you information on the VIO 3 and the connected system components.

80115-501_V26386
2025-12

Change system settings (Further settings)

The *Menu* offers you the opportunity to change various system settings (e.g. *Brightness*, *Volume*, *Start screen* etc.).

1. Call up the *Menu* with the Menu button.

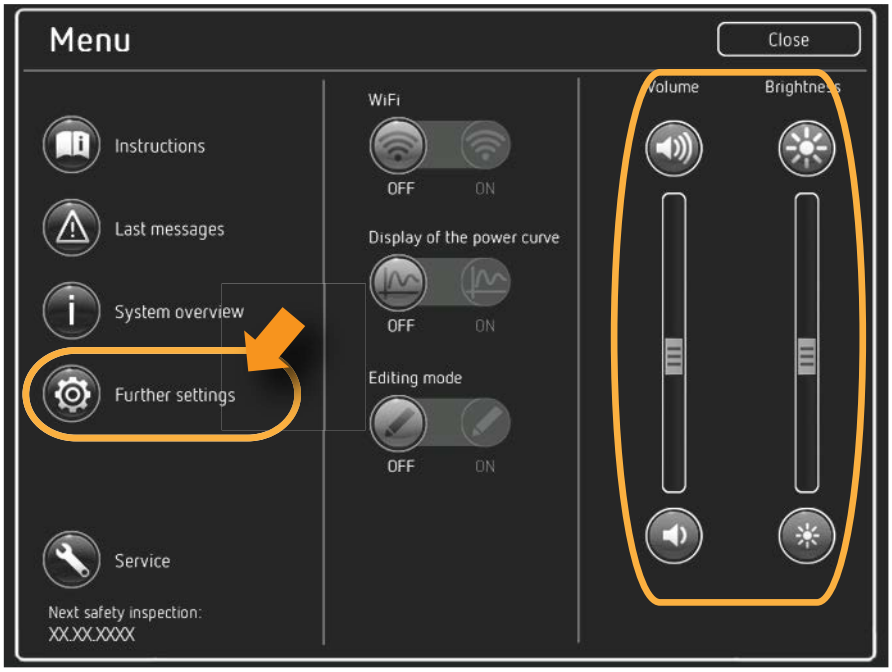


Fig. 6-22

Note: You can change the global *Volume* and *Brightness* directly in the *Menu*. You will find detailed setting options for *Volume* or *Brightness*, as well as a series of further system parameters, under menu item *Further settings*.

2. Change the global *Volume* or *Brightness* using the appropriate controller.
   – Or –
3. Touch the *Further settings* button.

80115-501_V26386
2025-12

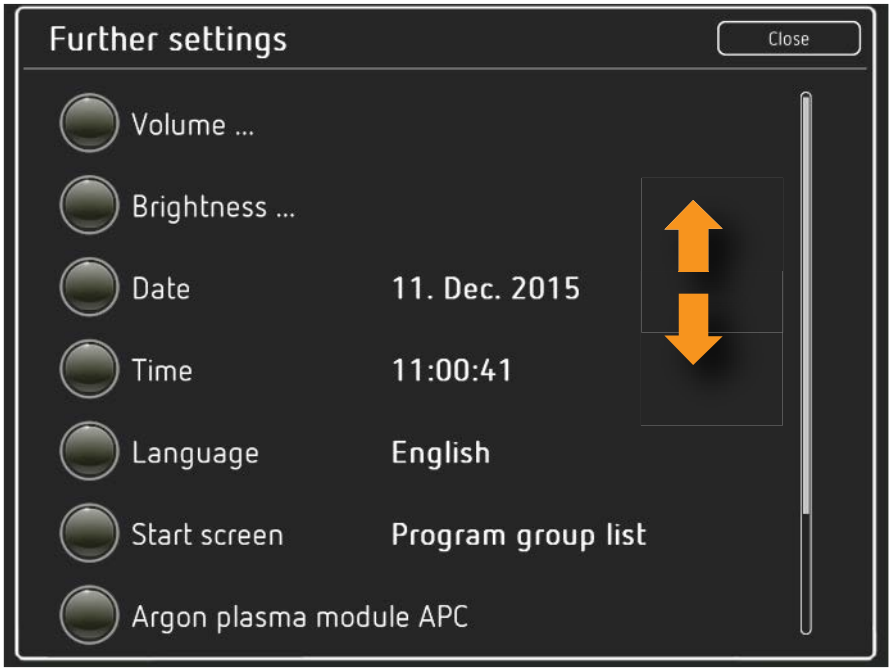


Fig. 6-23

The *Further settings* screen is displayed.

4. Scroll through the list, as required.

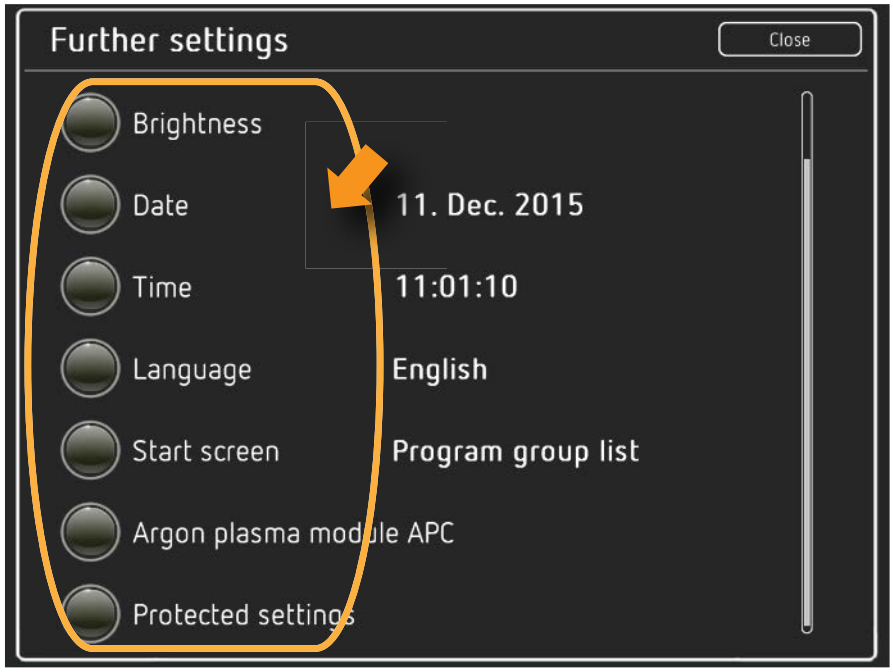


Fig. 6-24

The above figure shows the lower part of the list.

5. Select the setting you wish to change.
   A different setting screen opens depending on the setting selected.
6. Carry out the required setting.

Note: The *Protected settings* at the end of the list are not accessible for the user. The *Protected settings* can be changed as you wish by an authorized person.

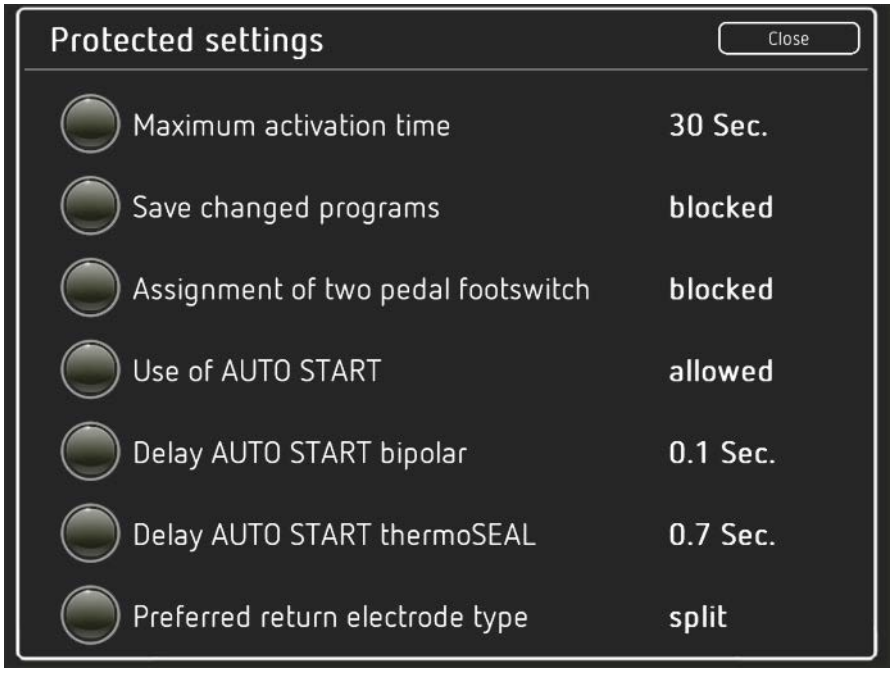


Fig. 6-25

Service functions

The service functions behind the *Service* menu item are only accessible for the service personnel.

80115-501_V26386
2025-12

WiFi function

WiFi On / Of

The WiFi function serves to connect the VIO 3 with a Windows PC or an iPad on which the Erbe Support App is installed. With the help of a WiFi connection, user programs can be replaced and service functions can be perceived by registered persons.

You can switch the WiFi on and off in the *Menu* screen. If you switch on WiFi, a network name and password are displayed for you after a short time.

Connecting a Windows PC or iPad with VIO 3

1. Switch on the VIO 3 WiFi.
2. Display the network in the system settings of your unit.
3. Search for the name of the VIO 3 network.
4. Enter the VIO 3 password.

Display of the power curve

Switching on the display of the power curve

➢ Switch on the *Display of the power curve* on the *Menu* screen.

Display power curve

➢ Touch the arrow on the right side of the main screen once the unit has been activated.

The window shows the power values + activation time of last activation.

Editing mode

The editing mode is only accessible for the authorized persons.

The editing mode is described in detailed in the chapter "Editing mode" (see page 73).

80115-501_V26386
2025-12

Overwriting a modified program or saving as a new program

If you have changed a program setting, the program name in the screen title is provided with the supplement *changed*.

Fig. 6-26

You can overwrite a modified program or save it as a new program. *Saving modified programs* must be *permitted* in the *Protected settings* for this purpose.

1. Touch the screen title.

If *Saving modified programs* is **blocked**, the *Program list* opens and the modified program is shown in the list with the supplement *changed* (without figure). You can return to the unmodified program or to the modified program.

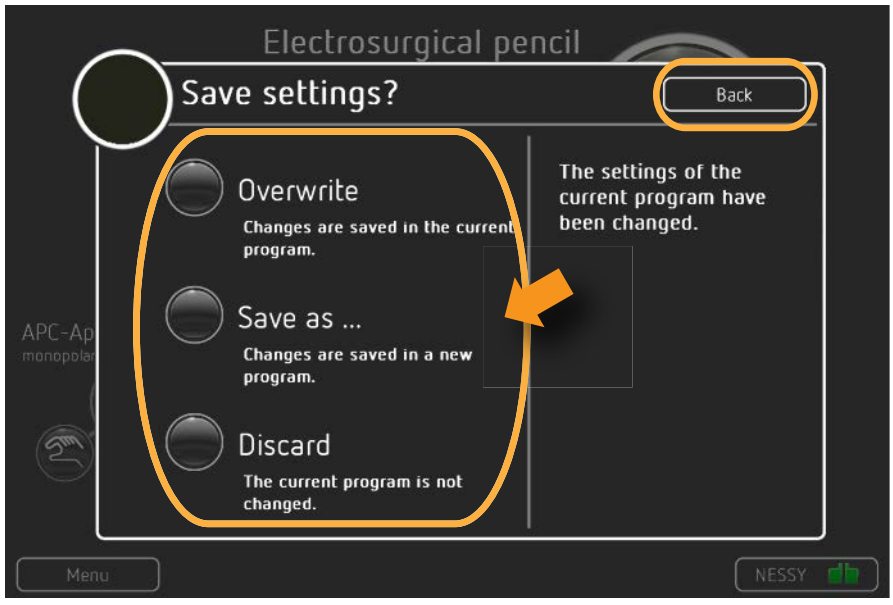


Fig. 6-27

80115-501_V26386
2025-12

If *Saving modified programs* is **permitted**, the *Save settings?* window opens.

2. Overwrite the existing program or save the modified program under a new name. Alternatively, you can reject the changes (= irrevocably deleted) or return to the modified program without action with the *Back* button.

80115-501_V26386
2025-12

Chapter 7
Editing mode

Authorized persons

The editing mode is only accessible for the authorized persons.

The editing mode may only be used by competent persons who can precisely assess the impacts of the changes undertaken.

Editing options

The editing mode offers the following options:

- Changing the unit name (in the *Program group list* screen title)
- Renaming, adding or deleting program groups, programs, subprograms and instruments
- Adding / changing pictograms in the *Program group list* and the *Program list*
- Changing program settings, such as mode and effect, without the changes having to be saved separately.

Note: In the editing mode, all changes are automatically accepted without a confirmation request. Changes can only be undone manually, e.g. by repeated entry of the previous names, values, etc.

80115-501_V26386
2025-12

Renaming, adding and deleting elements

Selecting the screen

You can edit the following screens:

- *Program group list*
- *Program list*
- *Main screen*

➢ Select the screen in which you wish to edit, e.g. *Program list*.

Switch on editing mode

Note: The unit cannot be activated in the editing mode.

Note: The editing mode, once switched on, remains active until the editing mode or the unit is switched off.

1. Call up the *Menu* with the Menu button.

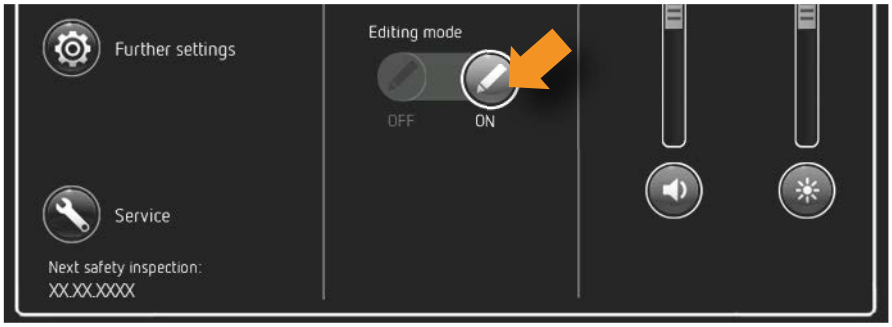


Fig. 7-1

2. Slide the *Editing mode* switch to *ON*.
   The screen keyboard is displayed. You are requested to enter a password.
3. Enter the password on the screen keyboard and press the *Enter* button.
4. Close the *Menu*.

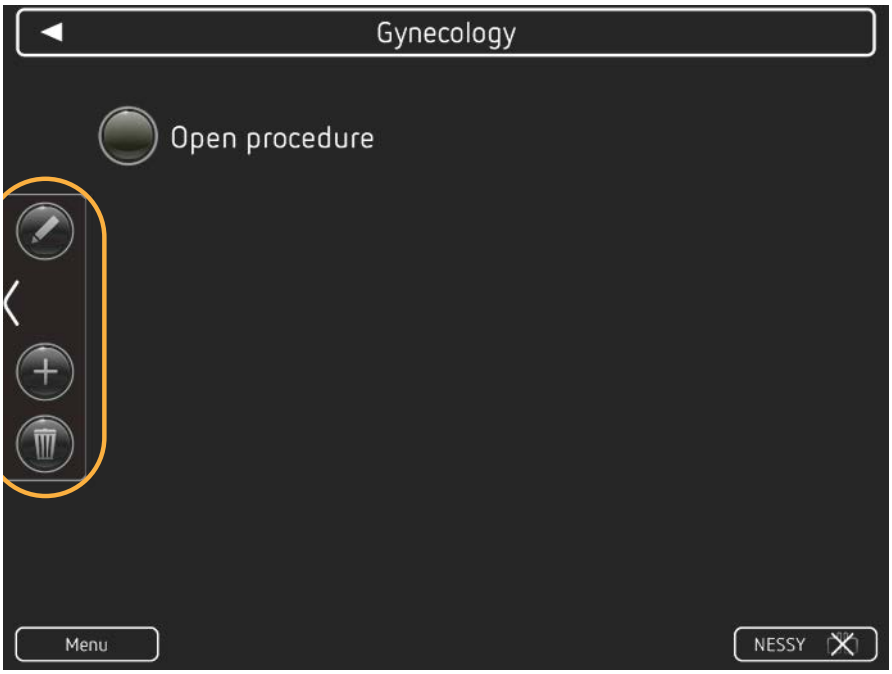


Fig. 7-2

The screen is displayed from which you called up the menu. The "Editing functions" field appears on the left side of the screen.

Using the arrow on the left side of the screen, you can show or hide the "Editing functions" field on the left side of the screen, as required.

Selecting the editing function

Note: To add, delete or rename elements, there is a dedicated editing function. You can change program settings (e.g. mode and effect) without selecting an editing function.

80115-501_V26386
2025-12

Fig. 7-3

In the "Editing functions" field you can select between the following editing functions: "Rename", "Add", and "Delete" (from top to bottom).

➢ Touch the required editing function (e.g. "Rename").
The selected function and the editable elements are color-marked.

Performing change

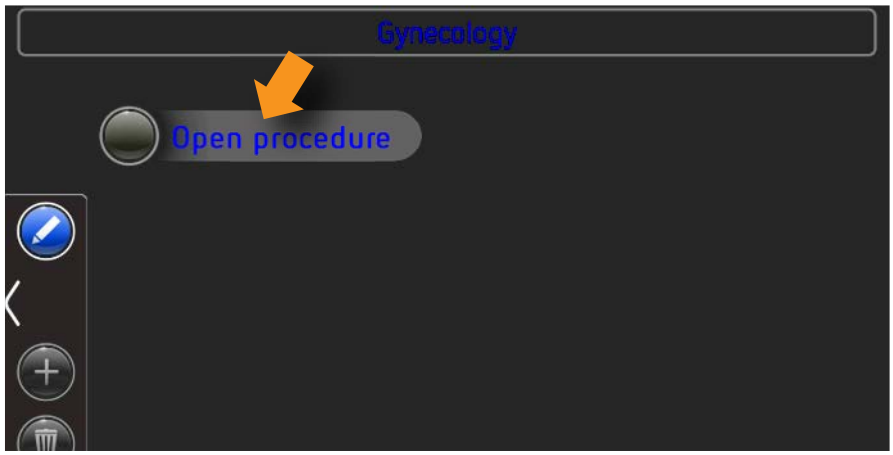


Fig. 7-4

1. Touch the element you wish to edit (e.g. a program name).
   A different window is displayed depending on the element and editing mode. By touching the program name, the screen keyboard opens, for example.
2. Carry out the required change.

The selected editing function is automatically ended after each change. For each further change you have to select the required editing function again.

Switching off the editing mode

1. Call up the *Menu* with the Menu button.
2. Slide the *Editing mode* switch to *OFF* and close the *Menu*.

Note: When you switch off the unit, the editing mode is automatically ended.

80115-501_V26386
2025-12

Creating a program with 2 subprograms; a monopolar and a bipolar instrument

The following describes, by way of example, how you create a program with two subprograms for laparoscopy.

This program enables the use of monopolar scissors and bipolar coagulation forceps within a program.

In the example described, it is assumed that no instruments and no neutral electrode are connected when editing.

Subprograms at a glance

The tables show both subprograms created in the example.

Subprogram 1 "monopolar"

	Instrument 1: Monopolar scissors	Instrument 2: Bipolar coagulation forceps
CUT mode, CUT effect	dryCUT, 4	–
COAG mode, COAG effect	swiftCOAG, 5	–
Assigned footswitch	Two pedal footswitch	–

Subprogram 2 "bipolar"

	Instrument 1: Monopolar scissors	Instrument 2: Bipolar coagulation forceps
CUT mode, CUT effect	–	–
COAG mode, COAG effect	–	softCOAG bipolar, 5
Assigned footswitch	–	Two pedal footswitch

80115-501_V26386
2025-12

Switch on editing mode

➢ Switch on the editing mode in the *Menu* and close the *Menu*.

Creating a new program

1. Call up the *Program list* to which you wish to add a new program.
2. In the "Editing function" field on the left side of the screen, select the "Add" editing function (plus button).
   A new program is available in the program list.

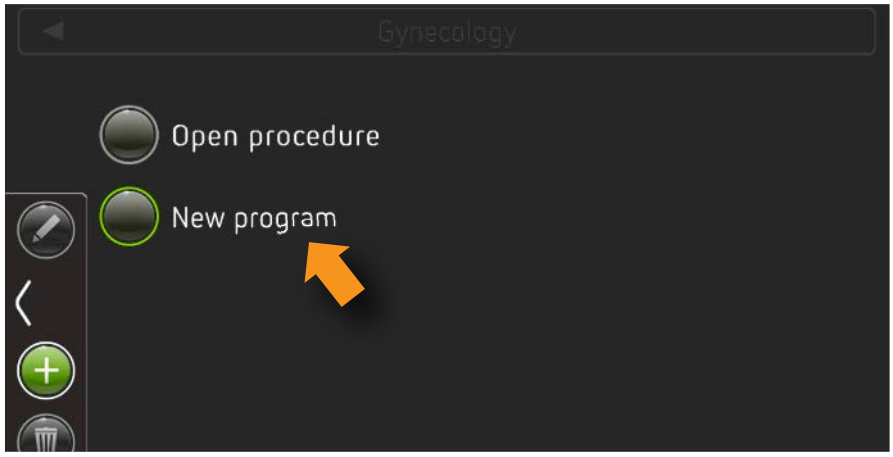


Fig. 7-5

3. Touch *New program*.
   The screen keyboard is displayed.
4. Enter the required program name, e.g., *Laparoscopic procedure* on the screen keyboard.
5. Confirm the program name with the *Enter* button.

Adding instruments

1. Select the new program *Laparoscopic intervention*.
   The *Main screen* is displayed.

Fig. 7-6

2. Touch the *Monopolar* instrument symbol 2×.
3. Select the *Scissors* instrument and confirm the selection with the *Close* button.
4. Touch the *Bipolar* instrument symbol 2×.
5. Select the *Coagulation forceps* instrument and confirm the selection with the *Close* button.

80115-501_V26386
2025-12

Creating subprograms

1. Select the "Add" editing function (plus button).

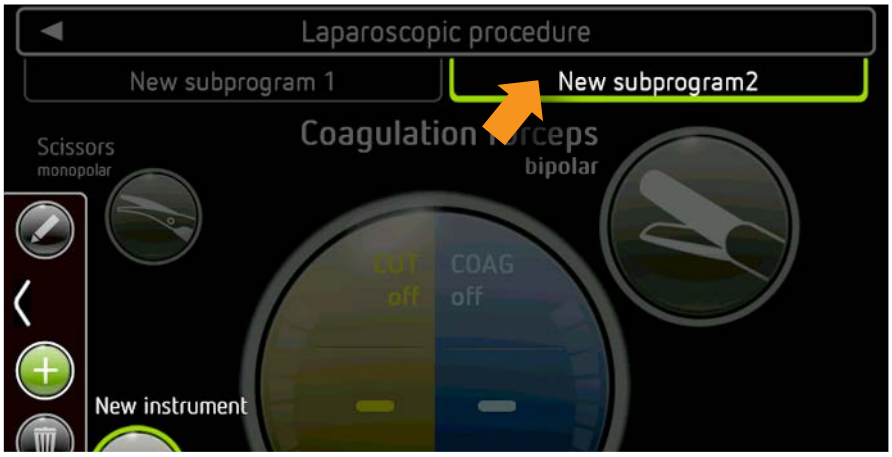


Fig. 7-7

2. Touch the *New subprogram 2* tab.
3. Enter the required subprogram name (e.g., *Bipolar*) on the screen keyboard and touch the *Enter* button.
4. Select the "Rename" editing function (pen button).
5. Touch the *New subprogram 1* tab.
6. Enter the required subprogram name (e.g., *Monopolar*) on the screen keyboard and touch the *Enter* button.

Editing the *monopolar* subprogram

1. Select the tab of the *monopolar* subprogram.
2. Touch the *Monopolar scissors* instrument symbol.
3. Assign the scissors to the two pedal footswitch by dragging the corresponding footswitch symbol from the "Activation type" field to the instrument.
4. Select the CUT mode dryCUT and set the CUT effect to 4.
5. Select the COAG mode swiftCOAG and set the COAG effect to 5.

80115-501_V26386
2025-12

The *Main screen* now looks as follows:

Fig. 7-8

Editing the *bipolar* subprogram

1. Select the tab of the *bipolar* subprogram.
2. Touch the *Bipolar coagulation forceps* instrument symbol.
3. Assign the coagulation forceps to the two pedal footswitch by dragging the corresponding footswitch symbol from the "Activation type" field to the instrument.
4. Select the COAG mode softCOAG bipolar and set the COAG effect to 5.

The *Main screen* now looks as follows:

Fig. 7-9

80115-501_V26386
2025-12

Switching off the editing mode

➢ Switch off the editing mode in the *Menu*.

Note: When you switch off the unit, the editing mode is automatically ended.

Creating a program with 2 subprograms; 2 different instruments on one socket

The following describes, by way of example, how to create a program with 2 subprograms for polypectomy.

With this program you can use a polypectomy loop and coagulation forceps on the same monopolar socket with only one connecting cable. The connecting cable remains connected to the socket during the intervention. Only the instrument connected to the connecting cable is changed.

Note: The option described here of using 2 instruments on one socket only applies for instruments with no instrument detection.

In the example described, it is assumed that no instruments and no neutral electrode are connected when editing.

Subprograms at a glance

The tables show both subprograms created in the example.

Subprogram 1 "Stomach/Esophagus"

	Instrument 1: Monopolar polypectomy loop
CUT mode, CUT effect, Cut duration, Cut interval	endoCUT Q, 3, 1, 6
COAG mode, COAG effect	forcedCoag, 4
Assigned footswitch	Two pedal footswitch

80115-501_V26386
2025-12

Subprogram 2 "Hemostasis"

	Instrument 1: Monopolar coagulation forceps
CUT mode, CUT effect	–
COAG mode, COAG effect, QuickStart	softCOAG, 5, ON
Assigned footswitch	Two pedal footswitch

Switch on editing mode

➢ Switch on the editing mode in the *Menu* and close the *Menu*.

Creating a new program

1. Call up the *Program list* to which you wish to add a new program.
2. In the "Editing function" field on the left side of the screen, select the "Add" editing function (plus button).
   A new program is available in the program list.
3. Touch *New program*.
   The screen keyboard is displayed.
4. Enter the required program name, e.g., *Polypectomy / EMR* on the screen keyboard.
5. Confirm the program name with the *Enter* button.

Adding *Polypectomy loop* instrument, removing bipolar instrument

1. Select the new *Polypectomy / EMR* program.
   The *Main screen* is displayed.
2. Touch the *Monopolar* instrument symbol 2×.
3. Select the *Polypectomy loop* instrument. Scroll through the instrument list, as required.
4. Confirm the selected instrument with the *Close* button.
   The *Polypectomy loop* instrument is added to the program.
5. Assign the polypectomy loop to the two pedal footswitch by dragging the corresponding footswitch symbol from the "Activation type" field to the instrument.
6. Select the "Delete" editing function (waste bin button).
7. Touch the *Bipolar* instrument symbol.
   The following prompt appears: *Do you really want to delete the "Instrument 2" instrument?*
8. Confirm the prompt with the *Delete* button.
   The *Bipolar* instrument is removed from the program.

Creating subprograms

1. Select the "Add" editing function (plus button).
2. Touch the *New subprogram 2* tab.
3. Enter the required subprogram name (e.g., *Hemostasis*) on the screen keyboard and touch the *Enter* button.
4. Select the "Rename" editing function (pen button).
5. Touch the *New subprogram 1* tab.
6. Enter the required subprogram name (e.g., *Stomach/Esophagus*) on the screen keyboard and touch the *Enter* button.

80115-501_V26386
2025-12

Editing *Stomach/Esophagus* subprogram

1. Select the tab for the *Stomach/Esophagus* subprogram.
2. Select the CUT mode endoCUT Q.
3. Set the CUT effect to 3, the cut duration to 1, and the cut interval to 6.
4. Select the COAG mode forcedCOAG and set the COAG effect to 4.

Editing *Hemostasis* subprogram (with instrument exchange)

1. Select the tab for the *Hemostasis* subprogram.
2. Touch the *Monopolar polypectomy loop* instrument symbol.
3. Select the instrument *Coagulation forceps*. Scroll through the instrument list, as required.
   The following prompt appears: *Do you want to change this instrument symbol only in this subprogram?*
4. Confirm the prompt with the *Yes* button.
5. Confirm the selected instrument with the *Close* button.
   In the Hemostasis subprogram, the *Monopolar polypectomy loop* instrument is replaced by the *Monopolar coagulation forceps* instrument.
6. Select the COAG mode softCOAG and set the COAG effect to 5.
7. Switch on *QuickStart*.

Switching off the editing mode

➢ Switch off the editing mode in the *Menu*.

Note: When you switch off the unit, the editing mode is automatically ended.

80115-501_V26386
2025-12

Chapter 8
Description of socket hardware

Individual socket configuration

You can individually configure the sockets of your unit when ordering the unit.

Purchasing further sockets

After purchase, it is possible to add further sockets or to replace existing sockets with others. Please contact Erbe Elektromedizin. You will find the addresses in this User Manual.

Monopolar socket MO 3-pin; 9/5

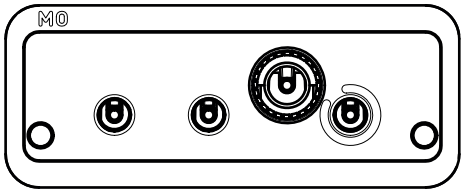


Fig. 8-1

REF No. 20160-001

Connectors supported

- 3-pin single use (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- 3-pin reusable (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- 9/5

Monopolar socket MO 3-pin; Bovie

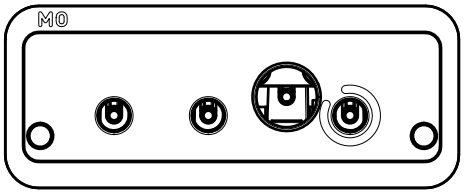


Fig. 8-2

REF No. 20160-002

Connectors supported

- 3-pin single use (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- 3-pin reusable (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- Bovie jack

80115-501_V26386
2025-12

Bipolar socket BI 2-pin 22–28; 8/4

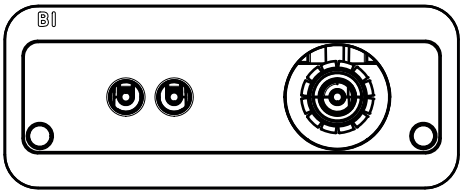


Fig. 8-3

REF No. 20160-003

Connectors supported

- 2-pin single use (22 or 28.5 mm pin distance)
- 2-pin reusable (22 or 28.5 mm pin distance)
- 8/4

Multifunction socket MF

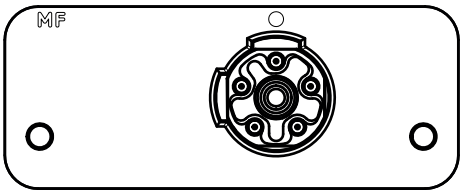


Fig. 8-4

REF No. 20160-004

Connectors supported

- MF plug (Erbe-specific)

80115-501_V26386
2025-12

MF-U socket

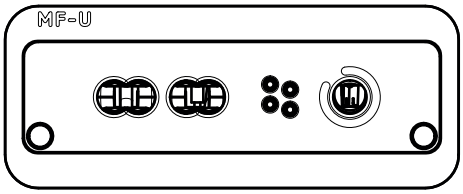


Fig. 8-5

REF No. 20160-005

Connectors supported

- 3-pin single use (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- 3-pin reusable (12.7 mm; 19.1 mm pin distance; 31.8 mm outer pin distance)
- 2-pin single use (22 or 28.5 mm pin distance)
- 2-pin reusable (22 or 28.5 mm pin distance)
- MF-2 (Erbe-specific)
- MF-U (Erbe-specific)

Neutral electrode socket NE 6; 2-pin

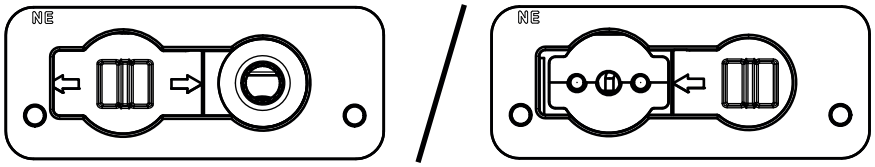


Fig. 8-6

REF No. 20160-006

Function The socket is used to connect a neutral electrode.

Connectors supported Optionally, you can connect ONE of the following plugs: Erbe neutral electrode plug with Ø 6.35 mm; neutral electrode plug with 2 pins (10.2 mm pin distance). The socket is equipped with a slider which, depending on the position, allows the connection of the plug with Ø 6.35 mm or the plug with 2 pins (see figure above).

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 9
Monopolar CUT modes

autoCUT

Properties

Reproducible, smooth cuts, minimal to moderate hemostasis.

PPS (Power Peak System)

The autoCUT mode is equipped with PPS.

A special problem during incision may be posed by the initial incision phase, in particular when the cutting electrode is pressed firmly against the tissue to be cut, before activation of the HF generator. The cutting electrode therefore has a relatively extensive, low-resistance contact with the tissue, e.g. in TUR.

In such cases, the HF generator must offer an above-average power so that the initial incision is not delayed, as otherwise an excessive coagulation necrosis may be produced at the point of initial incision.

The VIO 3 is equipped with automatic power control (PPS). PPS detects low resistance loads and controls the HF generator such that it briefly provides sufficient power to ensure the HF voltage necessary or intensity of the electrical arc for the cutting quality selected even with low-resistance loads.

Thanks to PPS, the average power can be limited to relatively low levels, something which represents improved protection from unintentional thermal tissue damage.

Areas of use

All cutting procedures in electrically conductive tissue: e.g. muscle tissue and vascular tissue. Exposure and cutting of fine structures.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.62 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	750 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	400 watts
Max. RMS current (maximum HF output current in normal use)	190 mA

80115-501_V26386
2025-12

Diagrams

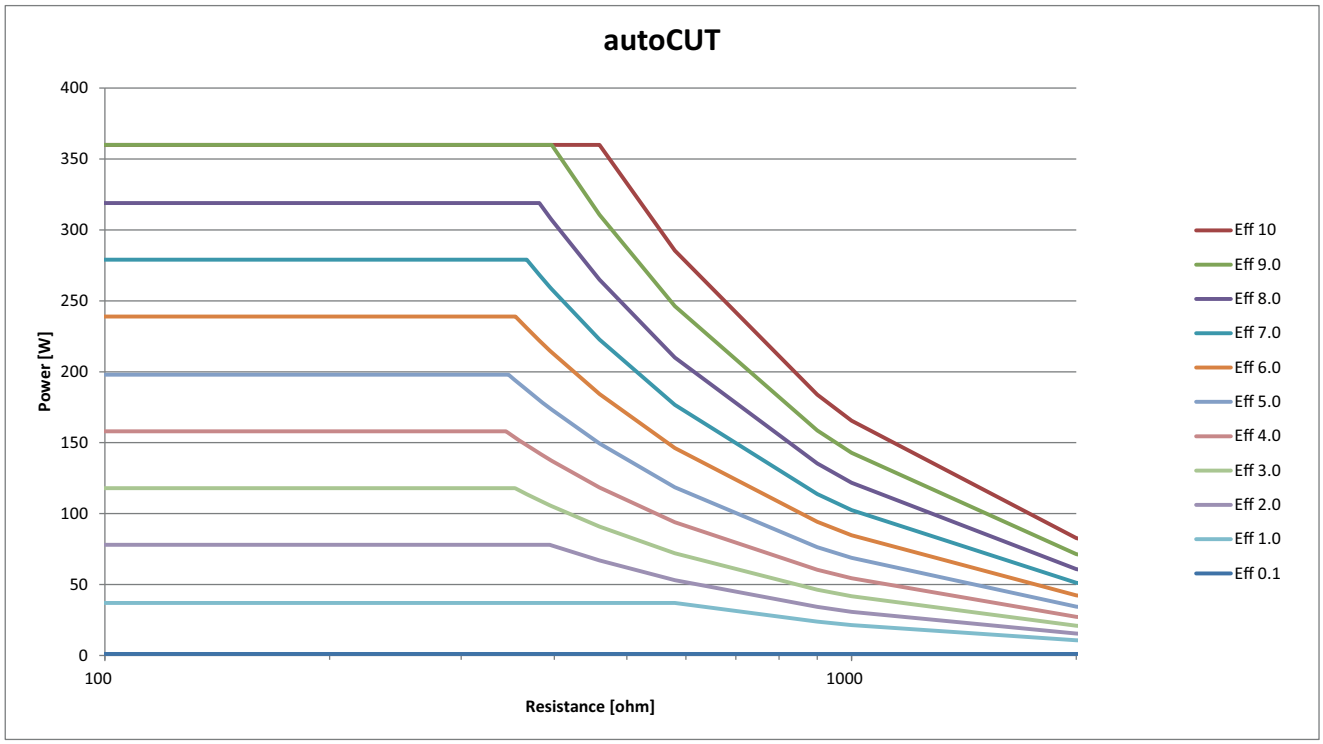
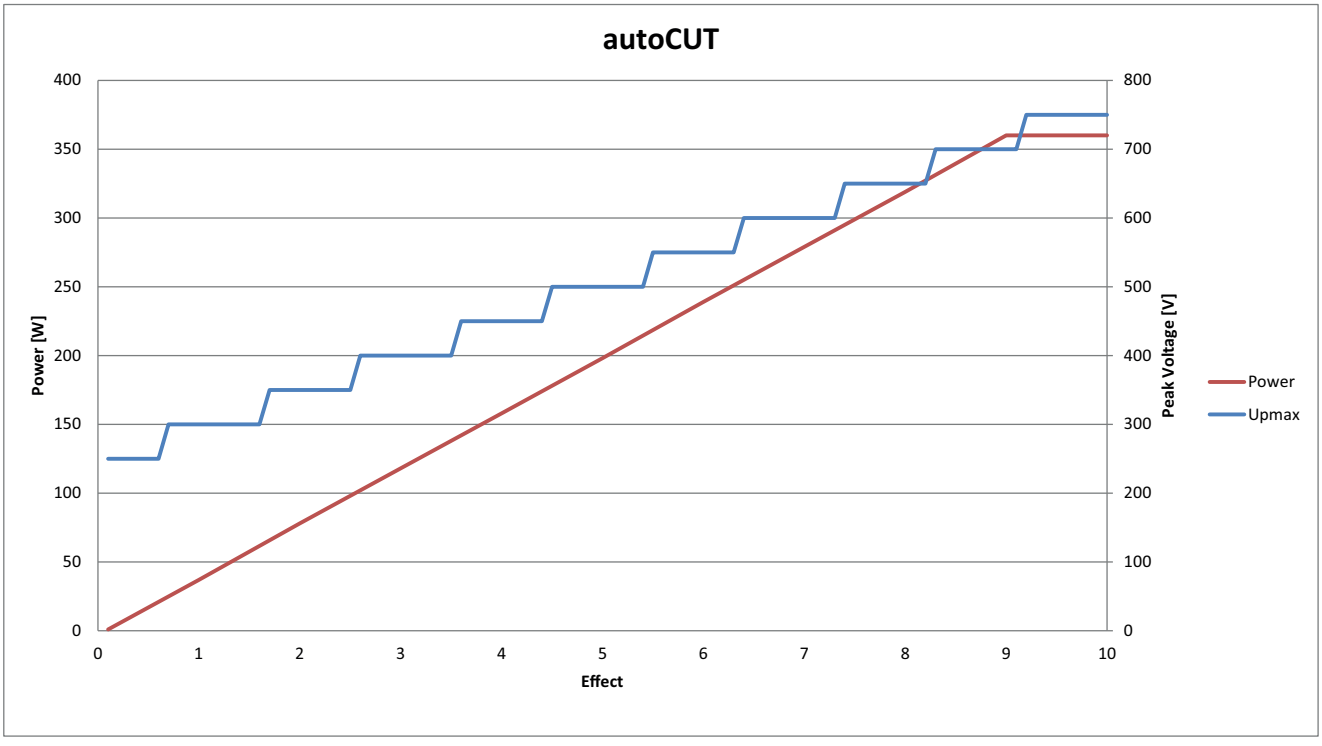


Fig. 9-1



80115-501_V26386
2025-12

Fig. 9-2

highCUT

Properties

Reproducible, smooth cuts, in particular in poorly conductive and varying tissue.

PPS (Power Peak System)

The highCUT mode is equipped with PPS.

A special problem during incision may be posed by the initial incision phase, in particular when the cutting electrode is pressed firmly against the tissue to be cut, before activation of the HF generator. The cutting electrode therefore has a relatively extensive, low-resistance contact with the tissue, e.g. in TUR.

In such cases, the HF generator must offer an above-average power so that the initial incision is not delayed, as otherwise an excessive coagulation necrosis may be produced at the point of initial incision.

The VIO 3 is equipped with automatic power control (PPS). PPS detects low resistance loads and controls the HF generator such that it briefly provides sufficient power to ensure the HF voltage necessary or intensity of the electrical arc for the cutting quality selected even with low-resistance loads.

Thanks to PPS, the average power can be limited to relatively low levels, something which represents improved protection from unintentional thermal tissue damage.

Areas of use

For example, for cutting fat-containing structures, cutting under water, e.g. with TUR-P.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.62 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1100 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of arc intensity
Max. output across the designed load resistor	400 watts
Max. RMS current (maximum HF output current in normal use)	410 mA

80115-501_V26386
2025-12

Diagrams

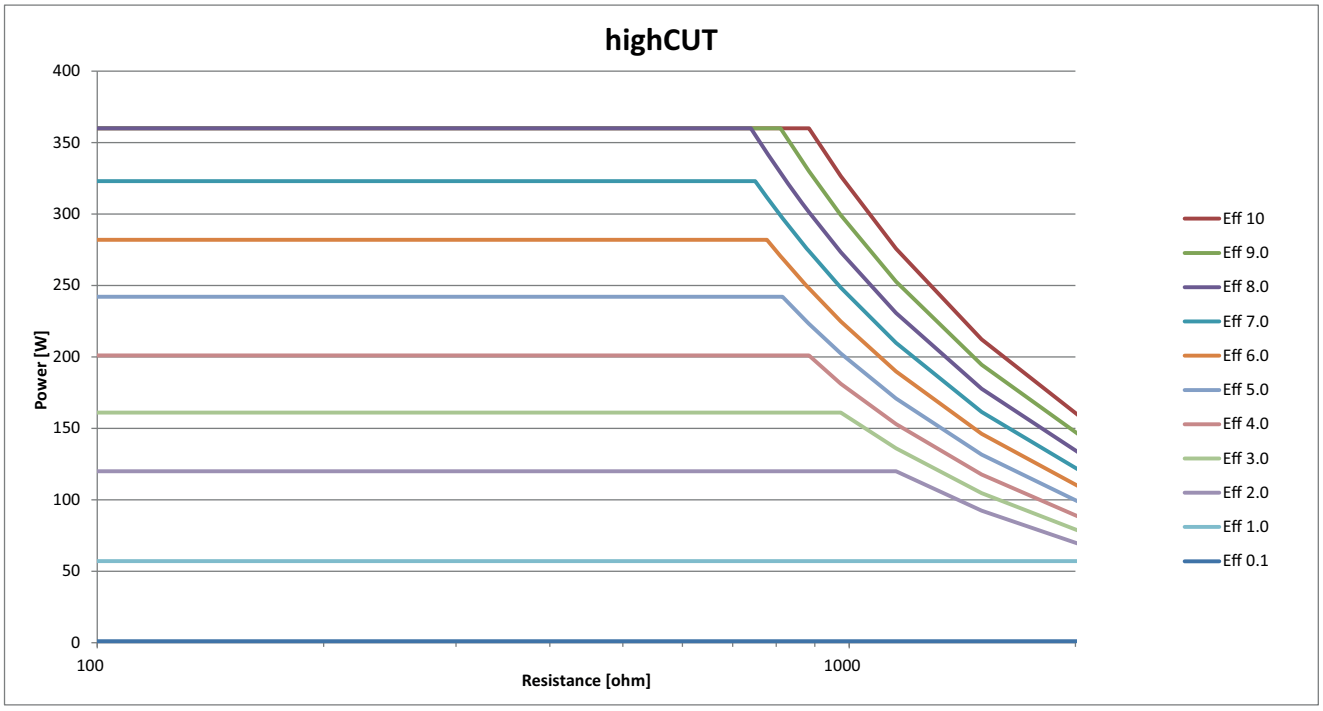


Fig. 9-3

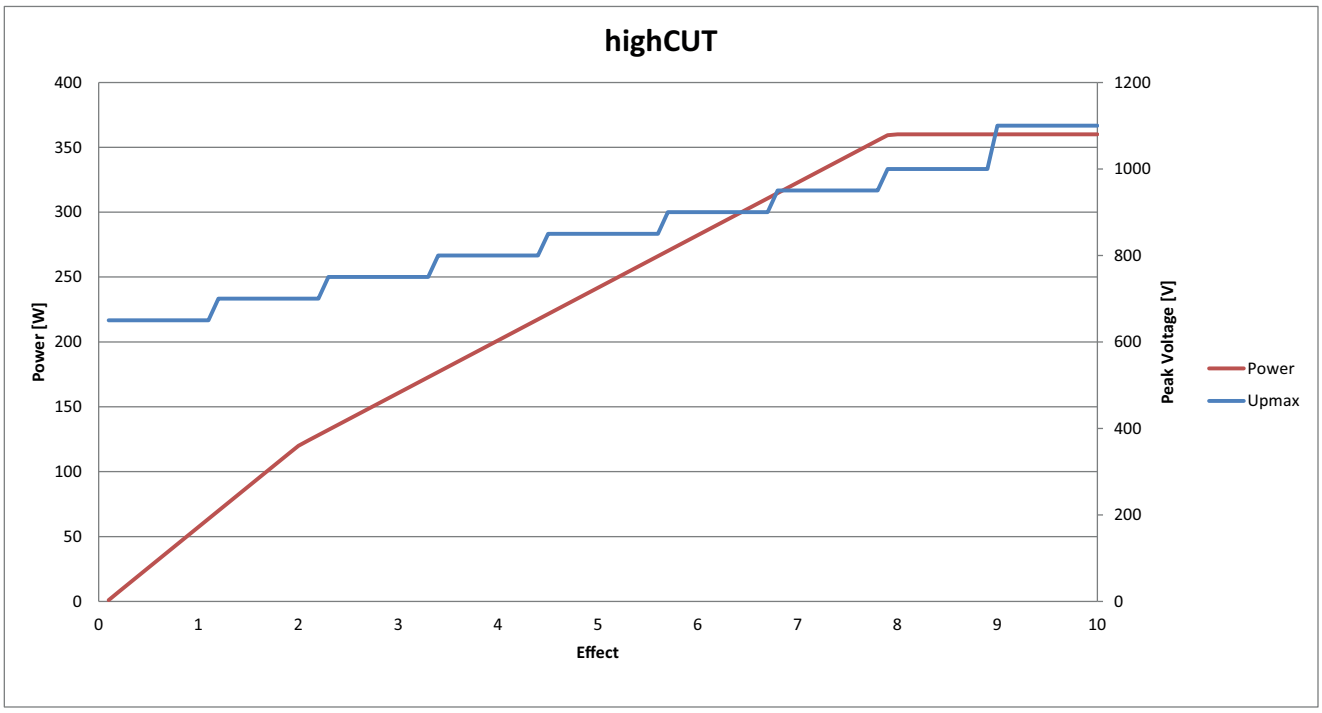


Fig. 9-4

80115-501_V26386
2025-12

dryCUT

Properties

Reproducible, slightly slower cut with pronounced hemostasis.

Areas of use

For example, cuts in "open surgery" and cuts in endoscopic interventions that require very good primary hemostasis during the cut and require a somewhat slower cutting speed.

miC switchable

Switching on miC ("Moderate Initial Cut") slows the initial cutting phase somewhat, in order to reduce the energy input during the process.

Touch the CUT effect display on the main screen if required. A window opens in which you can switch on miC.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	Effect: 0.1 – 4.9: 3.1 (at R_L = 300 Ohm) Effect: 5.0 – 7.9: 3.38 (at R_L = 300 Ohm) Effect: 8.0 – 10.0: 3.8 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1400 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	290 mA

80115-501_V26386
2025-12

Diagrams

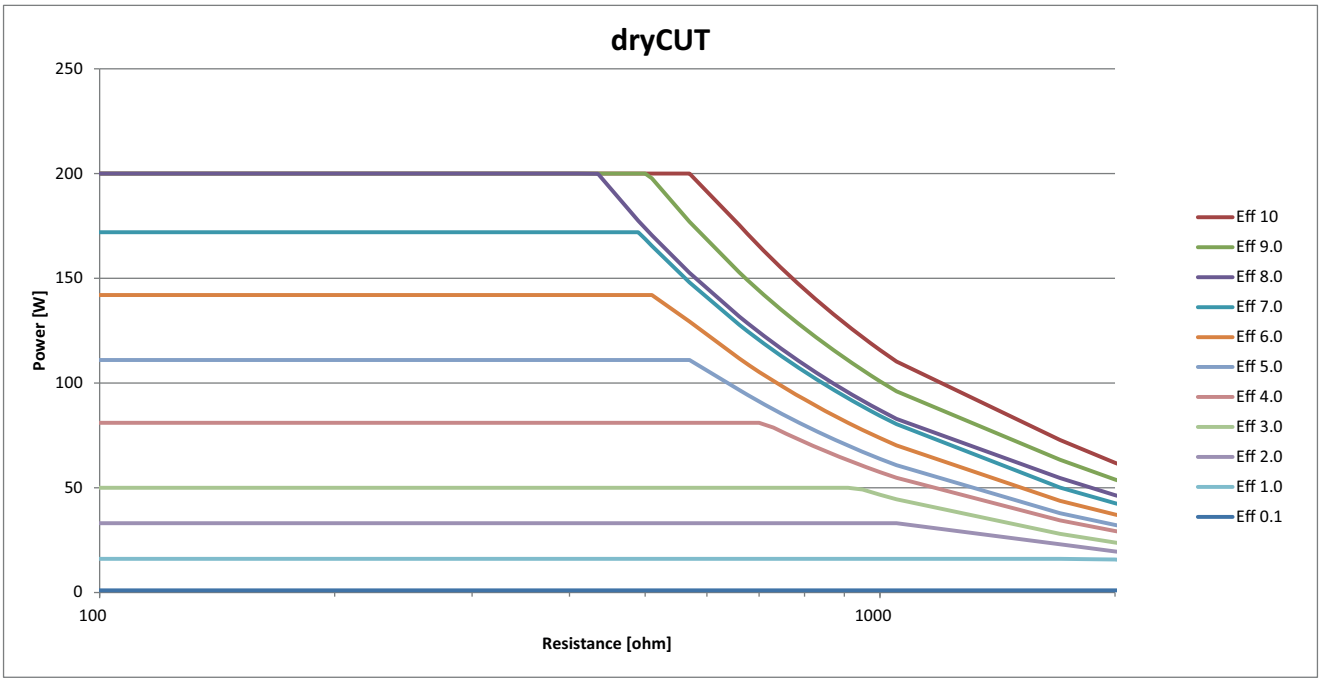


Fig. 9-5

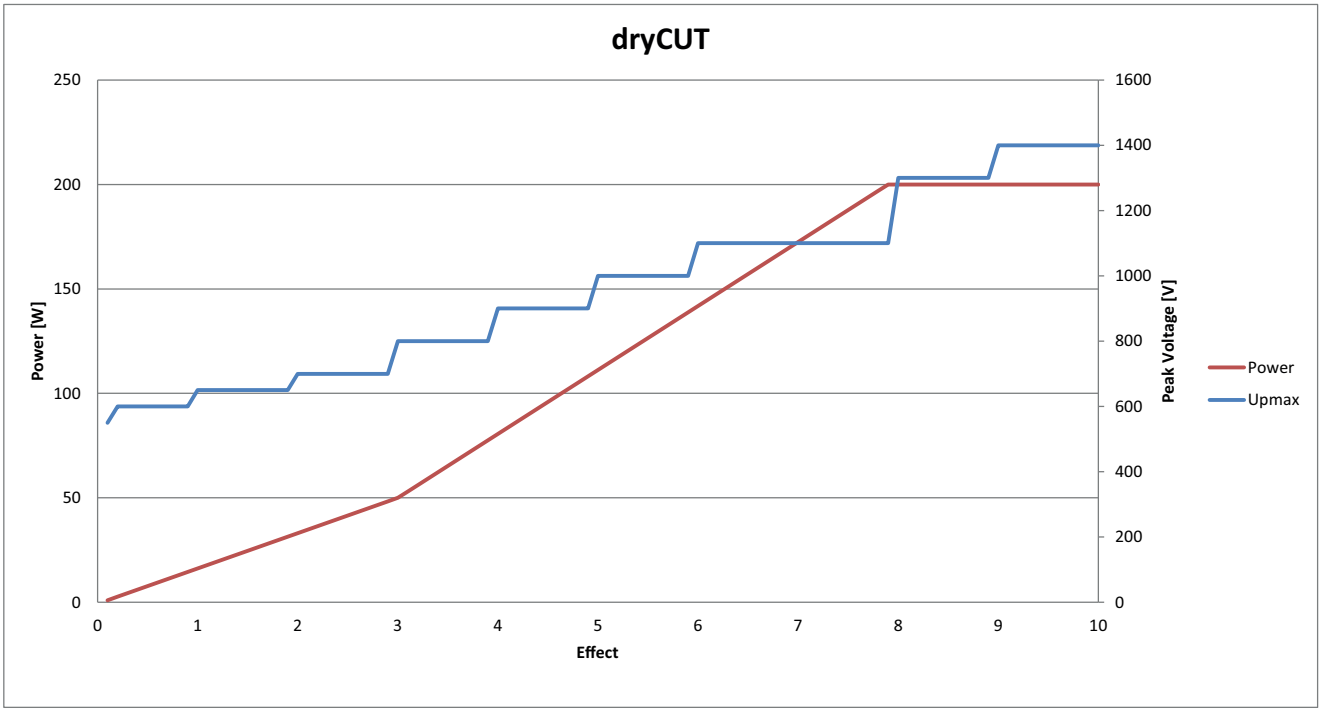


Fig. 9-6

80115-501_V26386
2025-12

endoCUT I

Properties

The cut consists of alternating cutting and coagulating phases. The cut is easy to control and is characterised by a reproducible, preselectable coagulation property while cutting.

Areas of use

Endoscopic interventions in which alternating cutting and coagulation with activation is called for.

Cut duration

Depending on the size, type and location of lesions, it may be advantageous to vary cut duration. You can set cut duration to one of 4 levels. Cut duration has a major influence on cutting width.

Cut interval

The cut interval is the amount of time between the start of a cutting cycle and the start of the next cutting cycle. The cut interval thus comprises one cutting cycle and one coagulation cycle. You can set the cut interval to one of 10 levels. The higher the level, the longer the cut interval and coagulation cycle. A short cut interval makes it easier to remove the lesion quickly. A long cut interval makes it easier to remove the lesion slowly under control.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	Initial incision: 1.54 (at R_L = 100 Ohm)
Designed load resistance	100 Ohm
Max. HF peak voltage	700 V
Number of effects	1 – 4
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	110 watts
Max. RMS current (maximum HF output current in normal use)	770 mA

80115-501_V26386
2025-12

Diagram

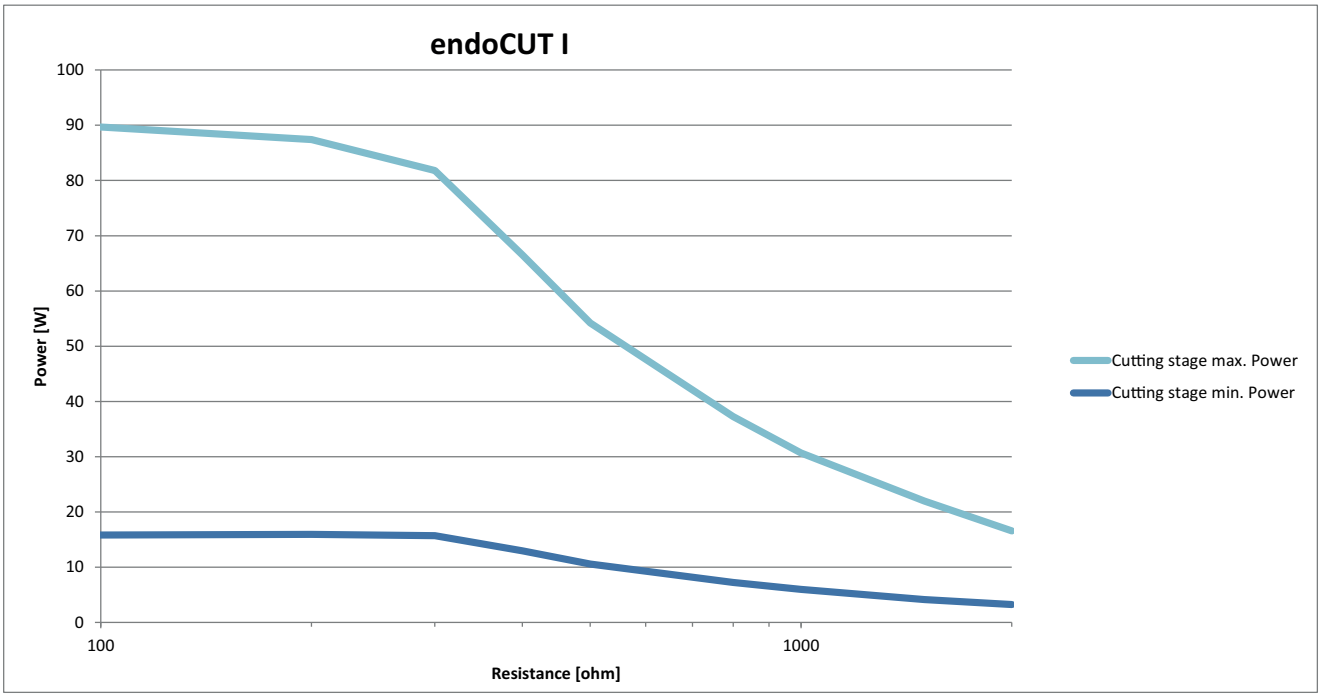


Fig. 9-7

endoCUT Q

Properties

The cut consists of alternating cutting and coagulating phases. The cut is easy to control and is characterised by a reproducible, preselectable coagulation property while cutting.

Areas of use

Endoscopic interventions in which alternating cutting and coagulation with activation is called for.

Cut duration

Depending on the size, type and location of lesions, it may be advantageous to vary cut duration. You can set cut duration to one of 4 levels. Cut duration has a major influence on cutting width.

Cut interval

The cut interval is the amount of time between the start of a cutting cycle and the start of the next cutting cycle. The cut interval thus comprises one cutting cycle and one coagulation cycle. You can set the cut interval to one of 10 levels. The higher the level, the longer the cut interval and coagulation cycle. A short cut interval makes it easier to remove the lesion quickly. A long cut interval makes it easier to remove the lesion slowly under control.

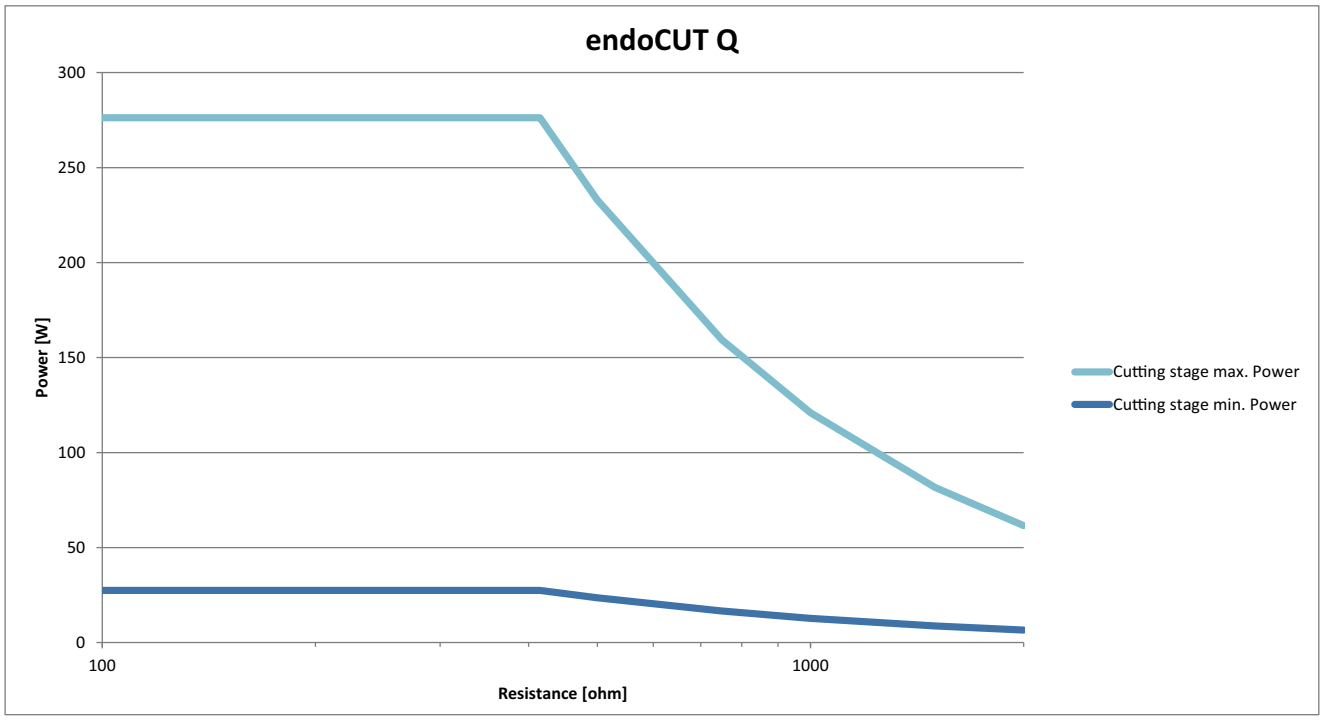
Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	Initial incision: 1.63 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm

80115-501_V26386
2025-12

Max. HF peak voltage	800 V
Number of effects	1 – 4
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	330 watts
Max. RMS current (maximum HF output current in normal use)	720 mA

Diagram



80115-501_V26386
2025-12

Fig. 9-8

80115-501_V26386
2025-12

Chapter 10
Monopolar COAG modes

softCOAG

Properties

Slow, deep coagulation without spark generation, consequently no carbonization of the tissue. Adhesion of the electrode to the tissue is greatly reduced.

Areas of use

All surgical interventions that call for safe, "deep" coagulation or in which adhesion of the electrode would have a negative effect on the coagulation process.

AUTO STOP switchable

AUTO STOP ends activation automatically on attainment of sufficient desiccation. Increasing the effect level reduces the interval until automatic termination of activation when using AUTO STOP. Coagulation depth essentially remains unchanged for the same instrument and the same tissue.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

QuickStart switchable

With QuickStart, a brief voltage pulse is applied to the tissue to attain a tissue effect quicker, without essentially influencing the coagulation result.

Touch the COAG effect display on the main screen if required. A window opens in which you can switch on QuickStart.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.51 (at R_L = 50 Ohm)
Designed load resistance	50 Ohm
Max. HF peak voltage	200 V 450 V QuickStart
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	1120 mA

80115-501_V26386
2025-12

Diagrams

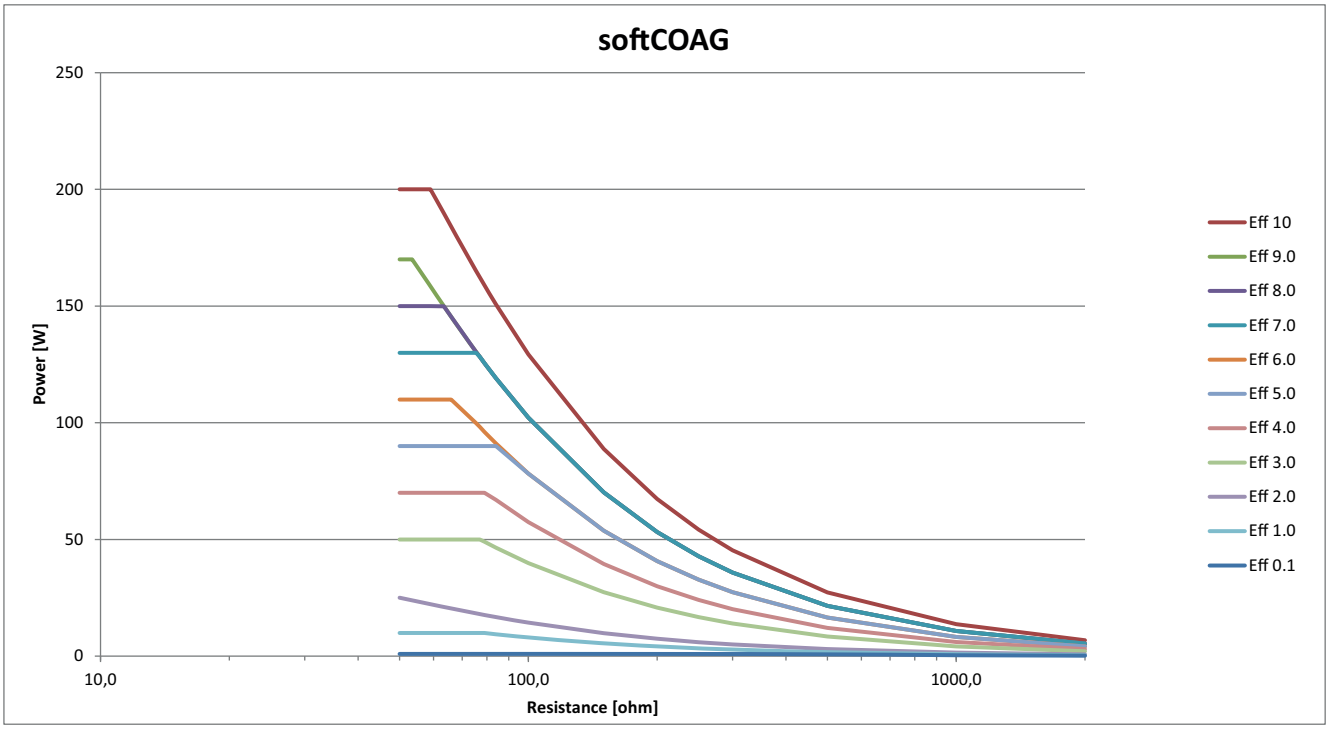


Fig. 10-1

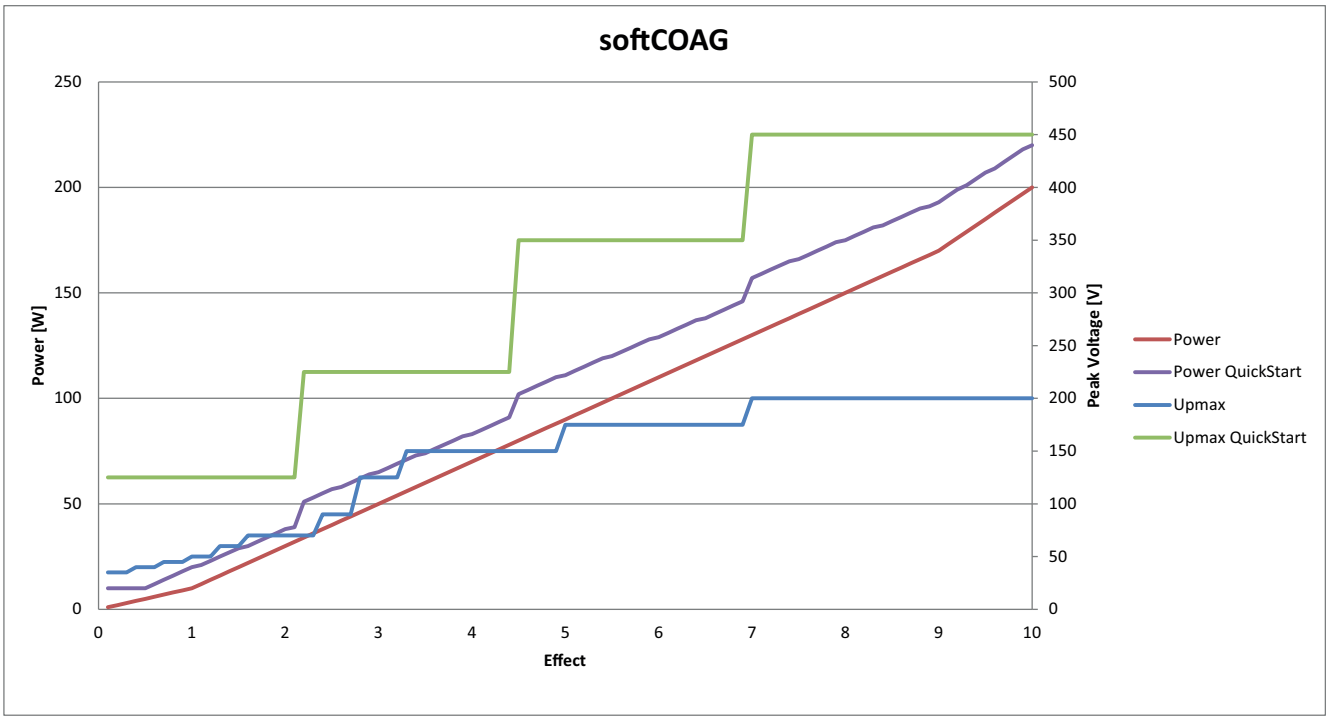


Fig. 10-2

80115-501_V26386
2025-12

forcedCOAG

Properties

Effective, fast "standard" coagulation.

Areas of use

Contact coagulation, clamp coagulation, e.g. via insulated monopolar forceps.

AUTO STOP switchable

On detection of a spark, adhesion of tissue to the instrument and carbonization is significantly reduced by automatically switching off.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	5.8 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1800 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	870 mA

80115-501_V26386
2025-12

Diagrams

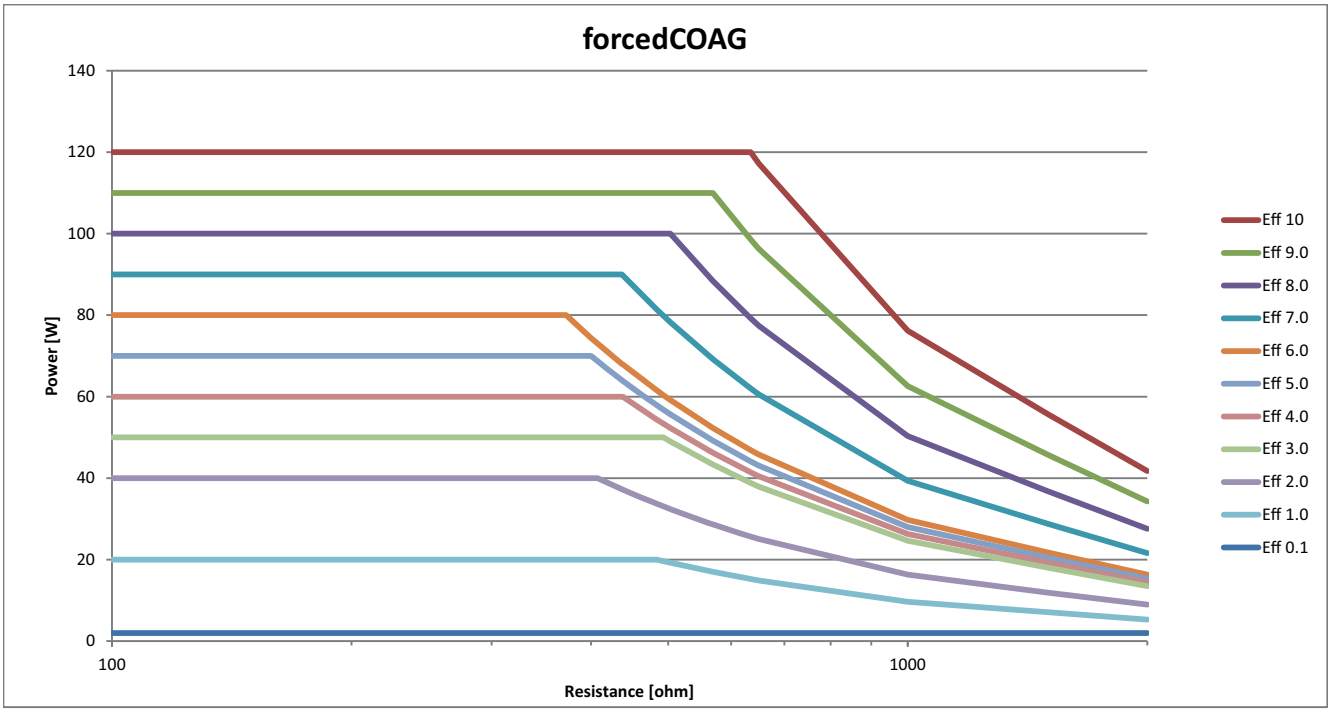


Fig. 10-3

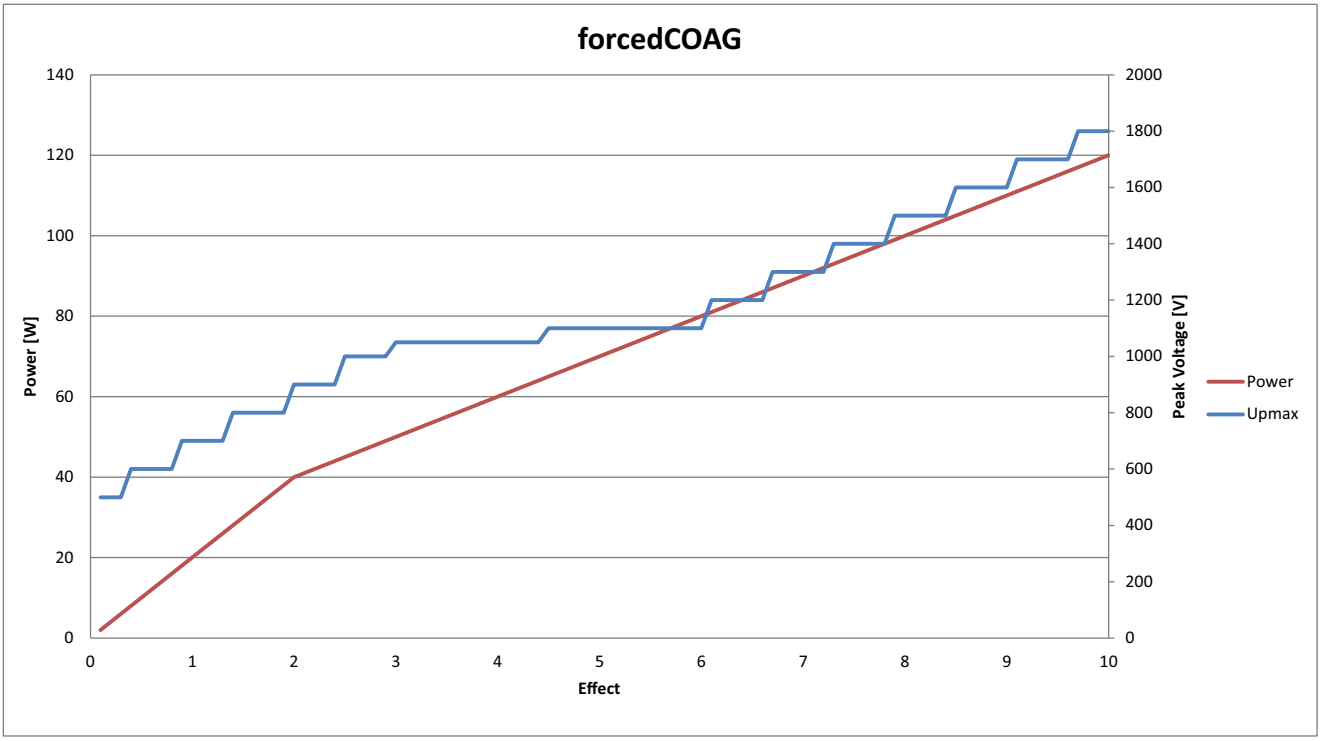


Fig. 10-4

80115-501_V26386
2025-12

swiftCOAG

Properties

Fast, effective coagulation, which is highly suitable for exposure with high hemostasis owing to its limited tissue-cutting property.

Areas of use

Coagulation and exposure.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	6.0 (at R_L = 200 Ohm)
Designed load resistance	200 Ohm
Max. HF peak voltage	2500 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	630 mA

80115-501_V26386
2025-12

Diagrams

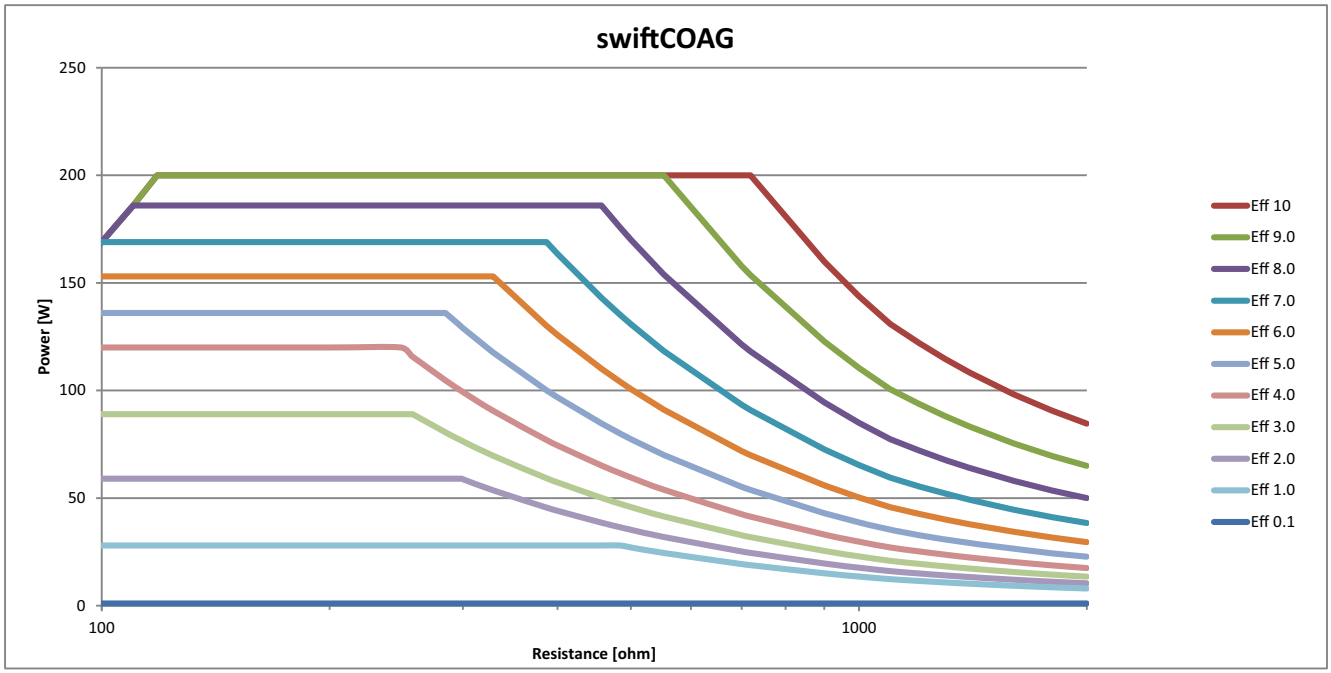


Fig. 10-5

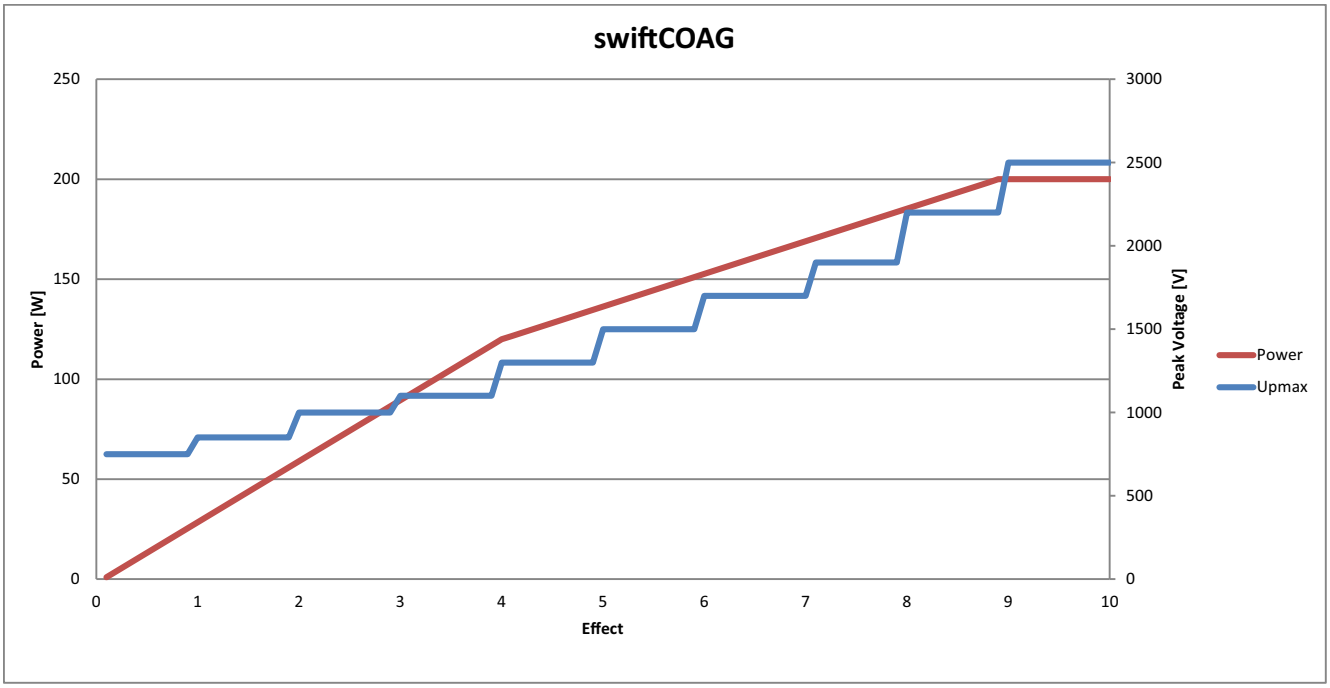


Fig. 10-6

sprayCOAG

Properties Contact-free, efficient surface coagulation, with low penetration depth.

Areas of use Coagulation of diffuse hemorrhage. Only use insulated monopolar metal forceps for clamp coagulation.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	7.74 (at R_L = 500 Ohm)
Designed load resistance	500 Ohm
Max. HF peak voltage	4300 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	175 watts
Max. RMS current (maximum HF output current in normal use)	840 mA

80115-501_V26386
2025-12

Diagrams

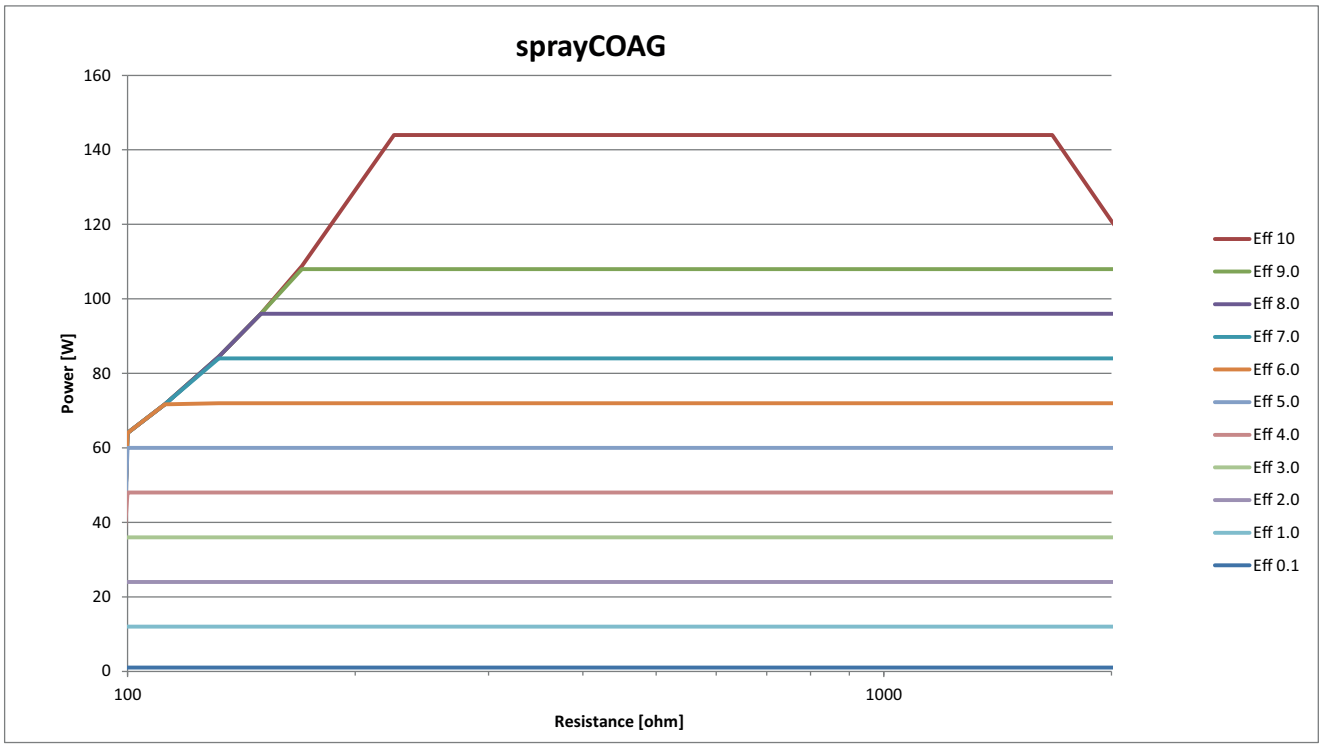


Fig. 10-7

80115-501_V26386
2025-12

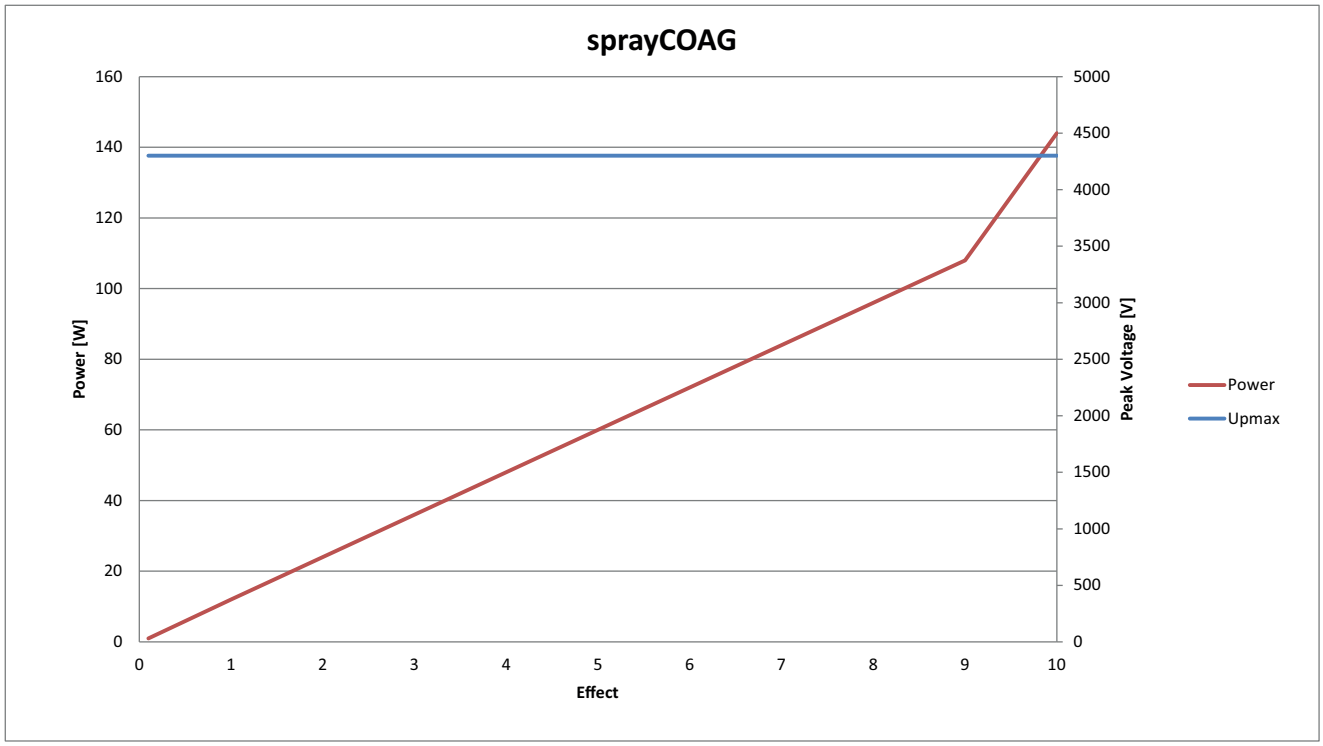


Fig. 10-8

preciseSECT

Properties

Fast, effective coagulation, with limited tissue-cutting property. Optimized exposure characteristics through dynamic adaptation of modulation.

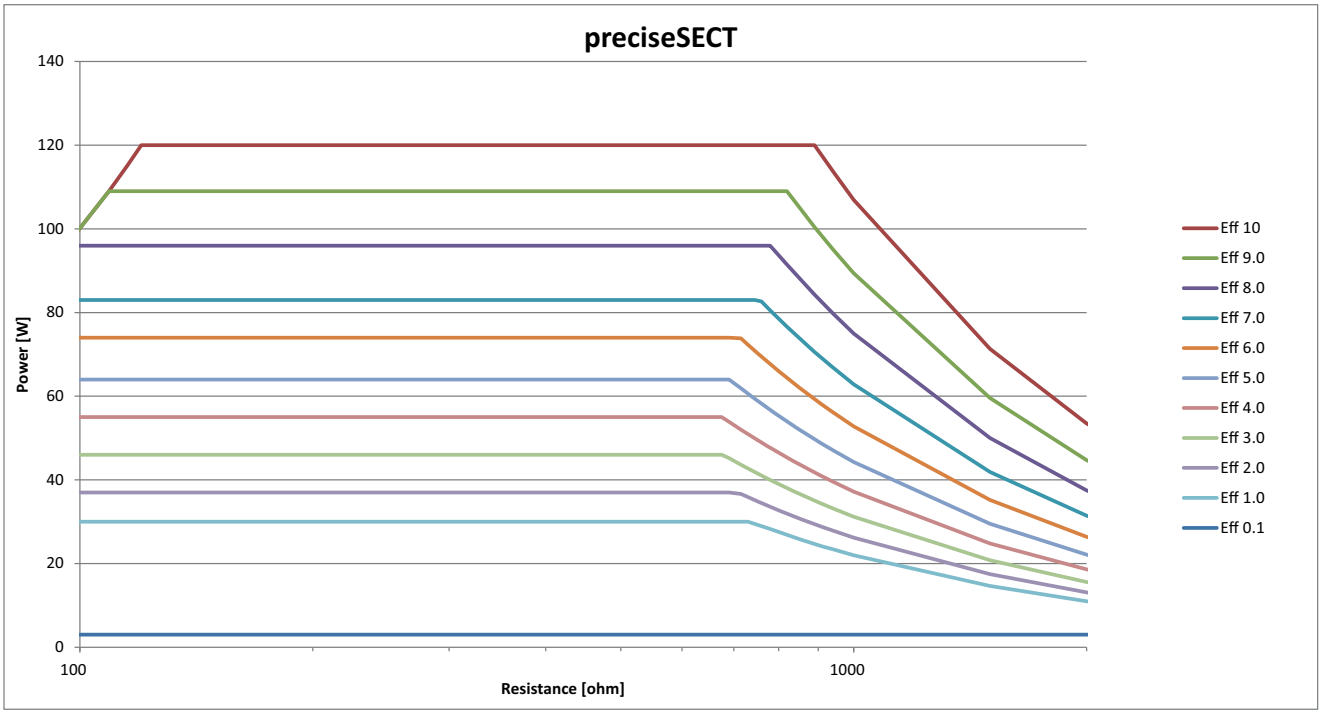
Areas of use

Coagulation, clamp coagulation and exposure

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	4.0 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1800 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	950 mA

Diagrams



80115-501_V26386
2025-12

Fig. 10-9

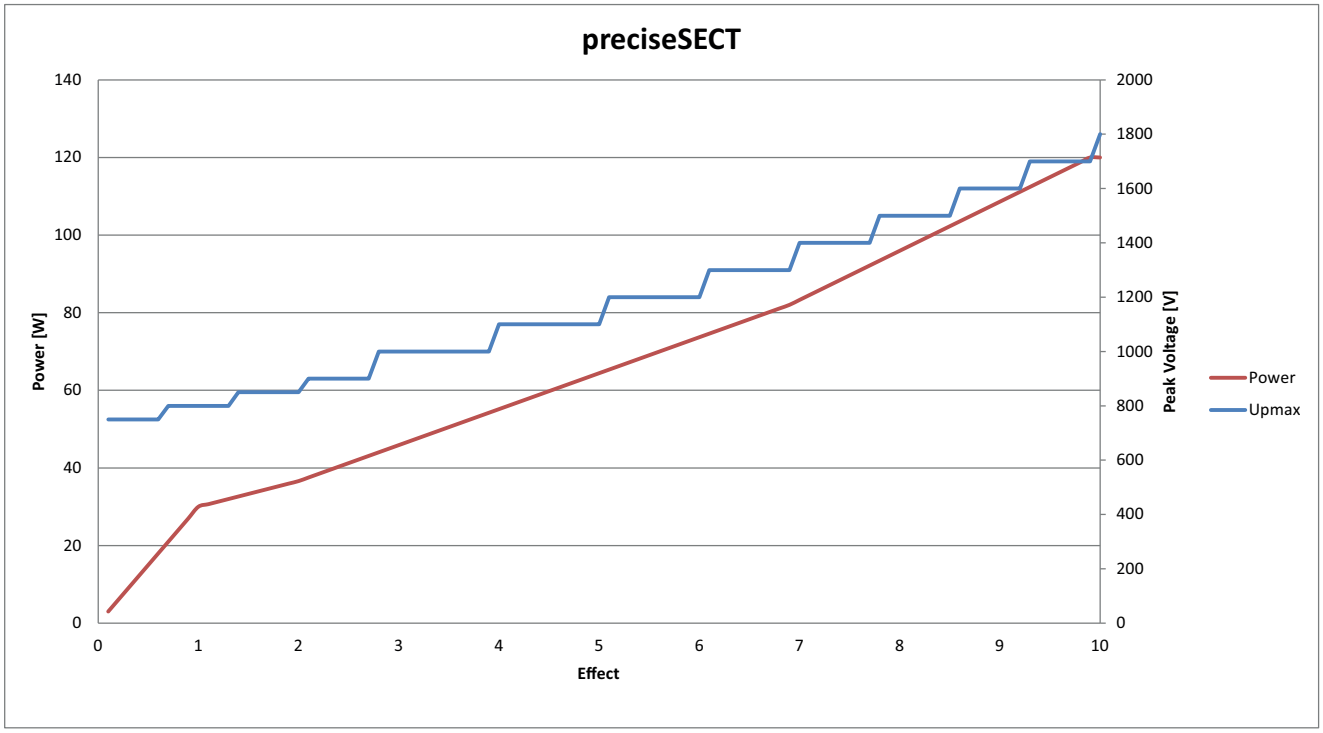


Fig. 10-10

80115-501_V26386
2025-12

twinCOAG

Properties

Fast, effective coagulation, which is highly suitable for exposure with high hemostasis owing to its limited tissue-cutting property. Two monopolar instruments can be activated at the same time.

WARNING! In the twinCOAG mode, the output power of any of the active electrodes can change.

Areas of use

Coagulation and exposure with simultaneous activation

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	5.9 (at R_L = 150 Ohm)
Designed load resistance	150 Ohm
Max. HF peak voltage	2000 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	710 mA

Diagrams

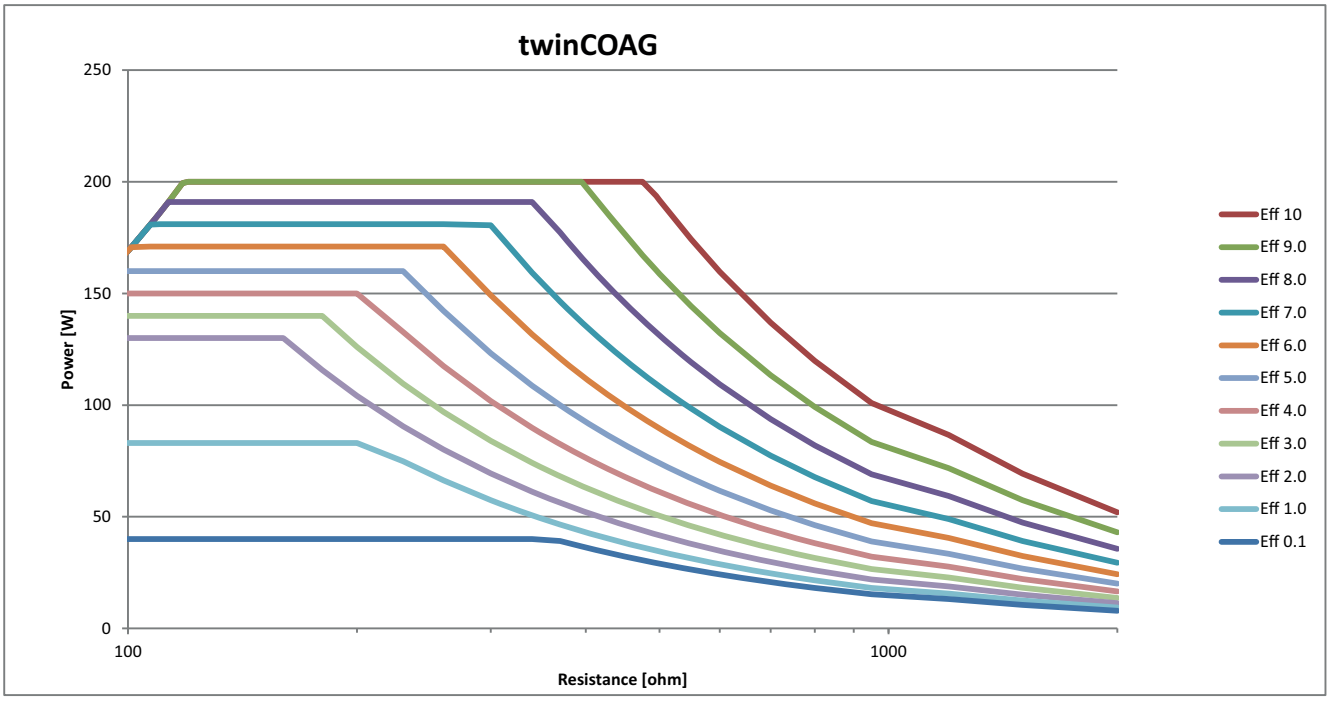
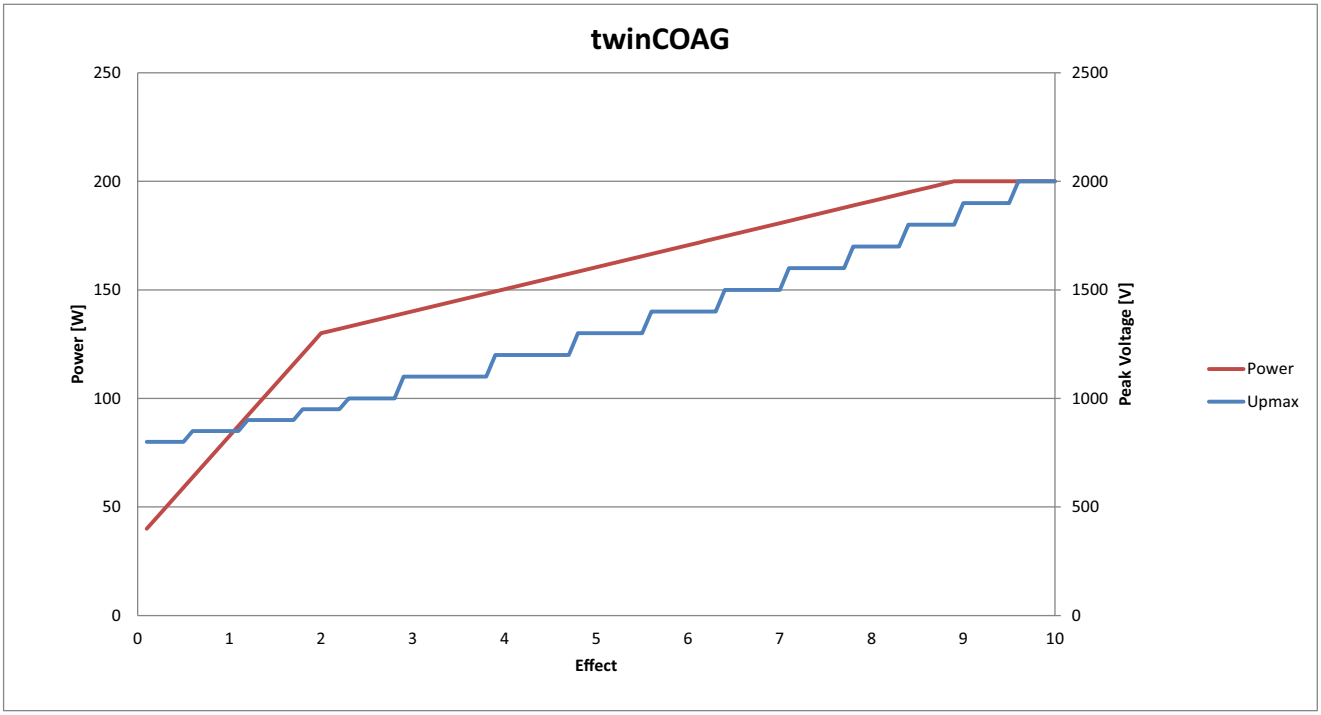


Fig. 10-11



80115-501_V26386
2025-12

Fig. 10-12

Chapter 11
Bipolar CUT modes

autoCUT bipolar

Properties

Reproducible, smooth cuts, minimal to moderate hemostasis.

Areas of use

All cutting procedures in electrically conductive tissue: e.g. muscle tissue and vascular tissue. Exposure and cutting of fine structures.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.64 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	675 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	120 watts

80115-501_V26386
2025-12

Diagrams

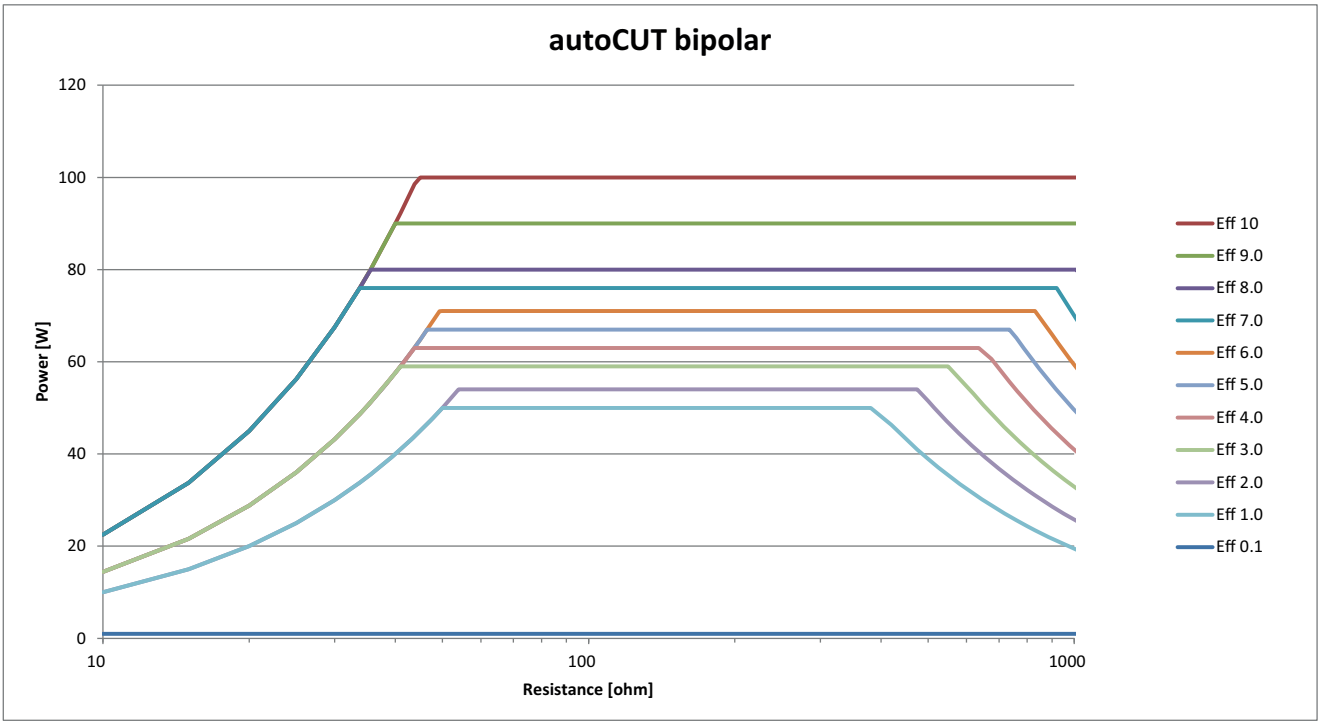
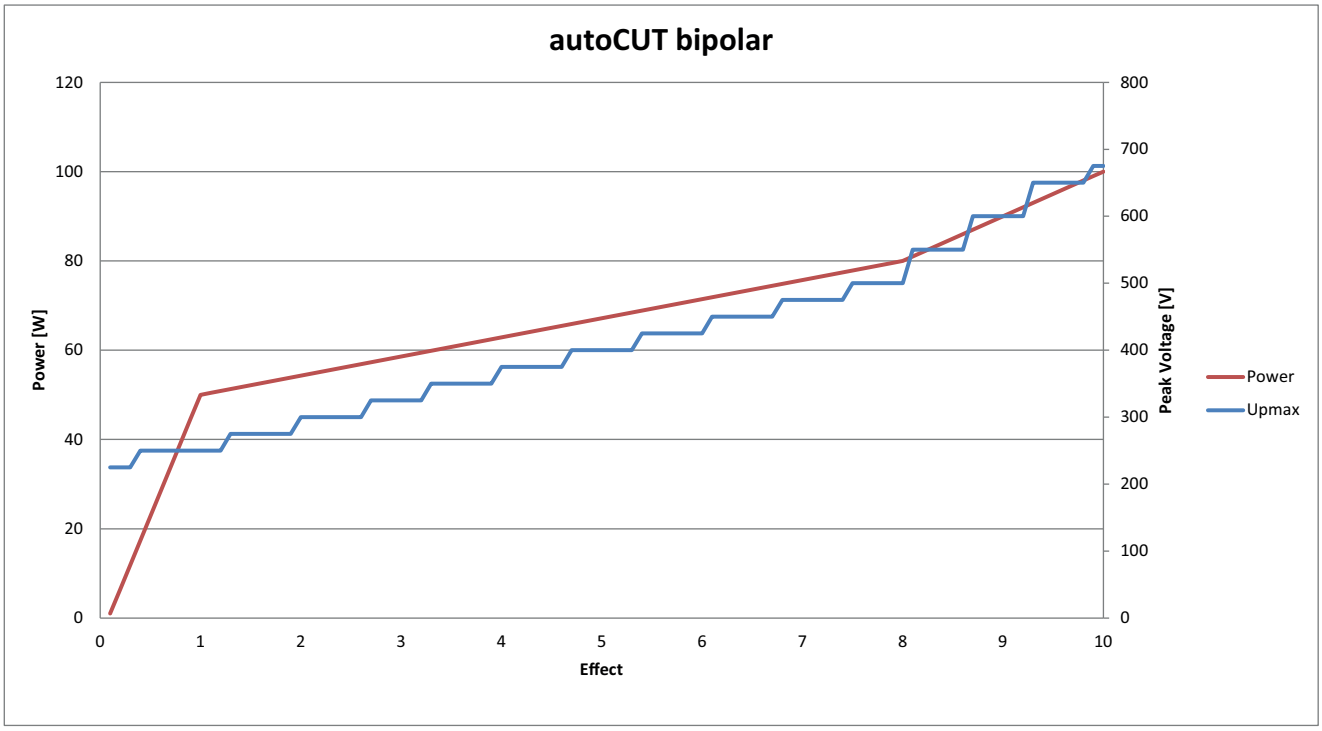


Fig. 11-1



80115-501_V26386
2025-12

Fig. 11-2

highCUT bipolar

Properties

Reproducible, smooth cuts, low to moderate hemostasis.

PPS (Power Peak System)

The highCUT bipolar mode is equipped with PPS.

A special problem during incision may be posed by the initial incision phase, in particular when the cutting electrode is pressed firmly against the tissue to be cut, before activation of the HF generator. The cutting electrode therefore has a relatively extensive, low-resistance contact with the tissue, e.g. in TUR.

In such cases, the HF generator must offer an above-average power so that the initial incision is not delayed, as otherwise an excessive coagulation necrosis may be produced at the point of initial incision.

The VIO 3 is equipped with automatic power control (PPS). PPS detects low resistance loads and controls the HF generator such that it briefly provides sufficient power to ensure the HF voltage necessary or intensity of the electrical arc for the cutting quality selected even with low-resistance loads.

Thanks to PPS, the average power can be limited to relatively low levels, something which represents improved protection from unintentional thermal tissue damage.

Areas of use

Cutting procedures in bipolar resection in NaCl.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.54 (at R_L = 33 Ohm)
Designed load resistance	33 Ohm
Max. HF peak voltage	650 V
Number of effects	1 – 10
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	400 watts

80115-501_V26386
2025-12

Diagrams

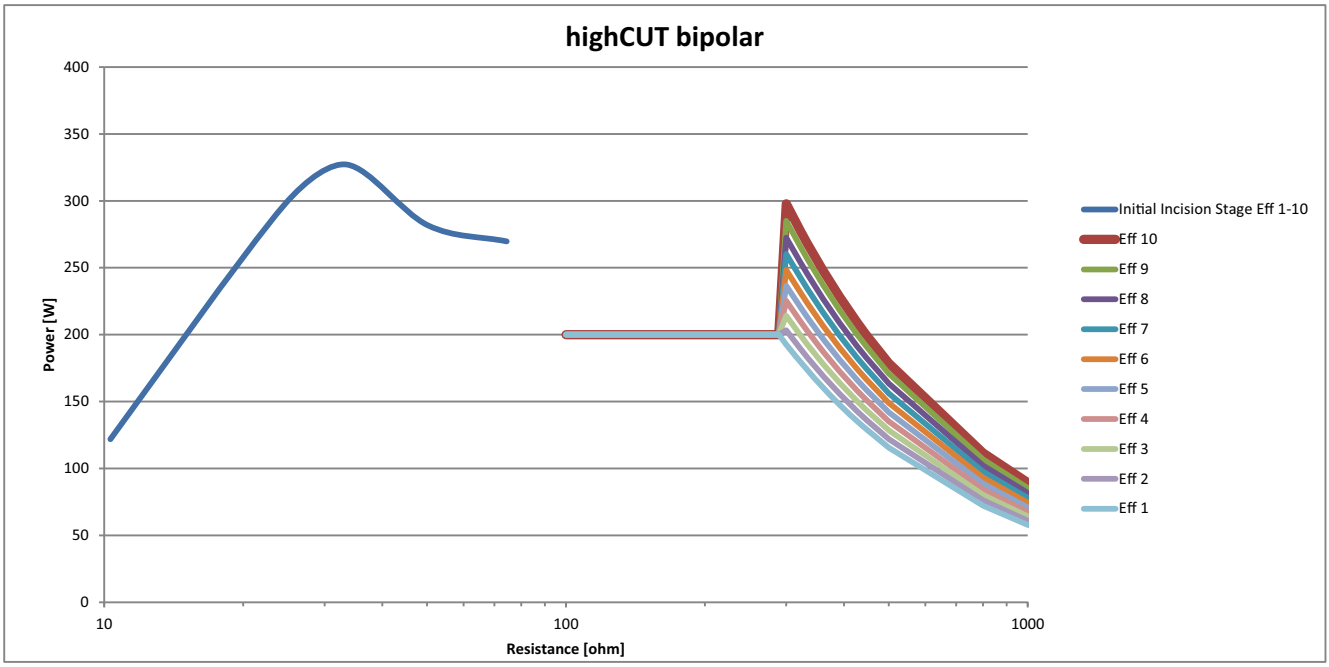


Fig. 11-3

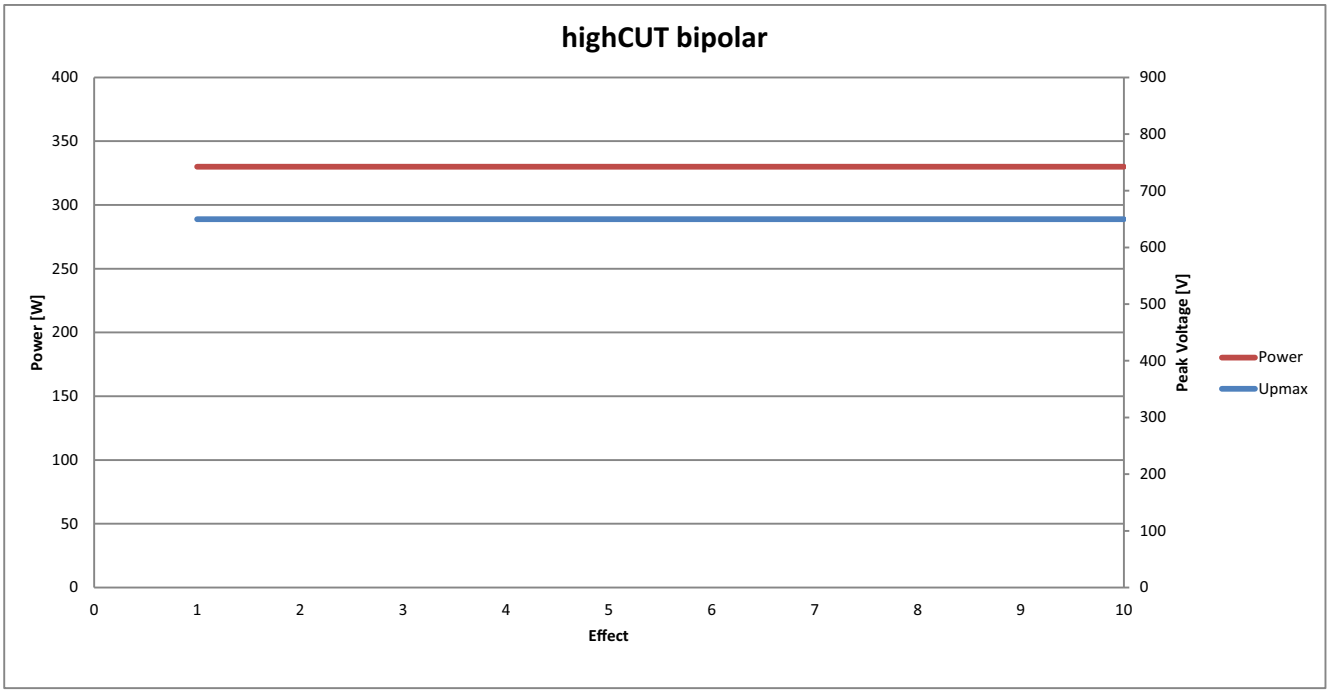


Fig. 11-4

80115-501_V26386
2025-12

thermoSECT

Properties

Special CUT&SEAL mode to simultaneously cut and seal tissue bundles/ligaments and vessels up to 5 mm. Operating principle: The mode adapts the HF voltage and activation time to the amount of tissue.

Areas of use

All surgical interventions that require bloodless cutting and sealing of tissue bundles and vessels up to 5 mm. Use exclusively with the TriSect rapide instrument.

AUTO STOP

The AUTO STOP function is matched to the thermoSECT mode. AUTO STOP automatically ends the activation as soon as the necessary tissue desiccation is reached.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	CUT electrode: 1.48 (at R_L = 365 ohms) COAG electrode: 1.49 (at R_L = 40 ohms)
Designed load resistance	CUT electrode: 365 ohms COAG electrode: 40 ohms
Max. HF peak voltage	500 V
Number of effects	1
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	CUT electrode: 196 watts COAG electrode: 45 watts

80115-501_V26386
2025-12

Diagram

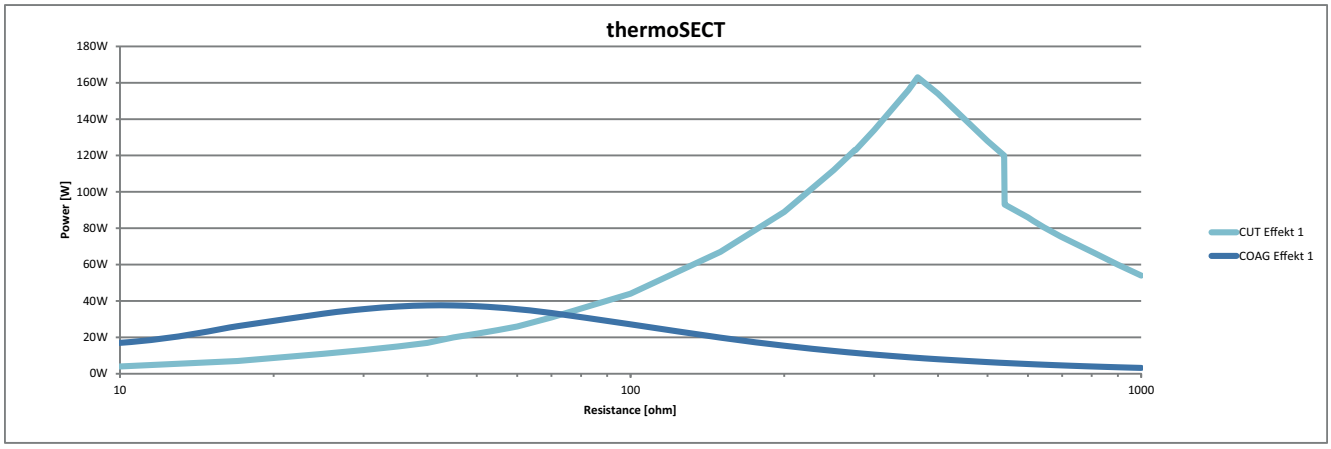


Fig. 11-5

80115-501_V26386
2025-12

Chapter 12
Bipolar COAG modes

softCOAG bipolar

Properties

Slow, deep coagulation without spark generation, consequently no carbonization of the tissue. Adhesion of the electrode to the tissue is greatly reduced.

Areas of use

All surgical interventions that call for safe coagulation with bipolar instruments. Coagulation in Bipolar resection.

AUTO START switchable

When the instrument touches tissue, coagulation starts automatically after a specified period of time.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO START symbol to the docking point of the required instrument.

AUTO START is not available for bipolar resection or with TriSect rapide.

AUTO STOP switchable

AUTO STOP ends activation automatically when sufficient desiccation is achieved. By increasing the effect level, the time until the activation is automatically ended decreases when using AUTO STOP. The coagulation depth remains fundamentally unchanged with the same instrument and same tissue.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

AUTO STOP is not available for bipolar resection or with TriSect rapide.

QuickStart switchable

With QuickStart, a brief voltage pulse is applied to the tissue to attain a tissue effect quicker, without essentially influencing the coagulation result.

Touch the COAG effect display on the main screen if required. A window opens in which you can switch on QuickStart.

QuickStart is not available for bipolar resection or with TriSect rapide.

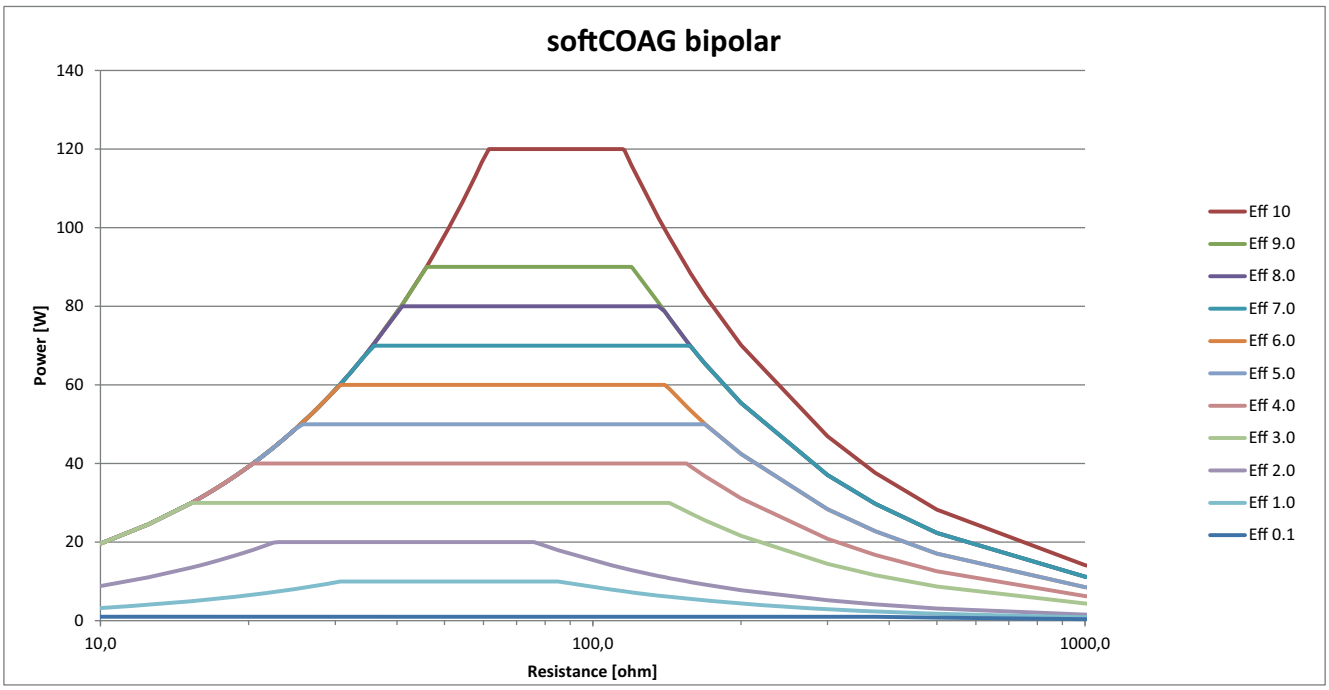
Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.51 (at R_L = 75 ohms) For bipolar resection: 1.48 (at R_L = 25 ohms) For coagulation with TriSect rapide: 1.51 (at R_L = 60 ohms)

80115-501_V26386
2025-12

Designed load resistance	75 ohms For bipolar resection: 25 ohms For coagulation with TriSect rapide: 60 ohms
Max. HF peak voltage	200 V 450 V QuickStart For coagulation with TriSect rapide: 175 V
Number of effects	0.1 – 10.0 For bipolar resection: 1 – 10 For coagulation with TriSect rapide: 1 – 4
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts For bipolar resection: 240 watts For coagulation with TriSect rapide: 134 watts

Diagrams



80115-501_V26386
2025-12

Fig. 12-1

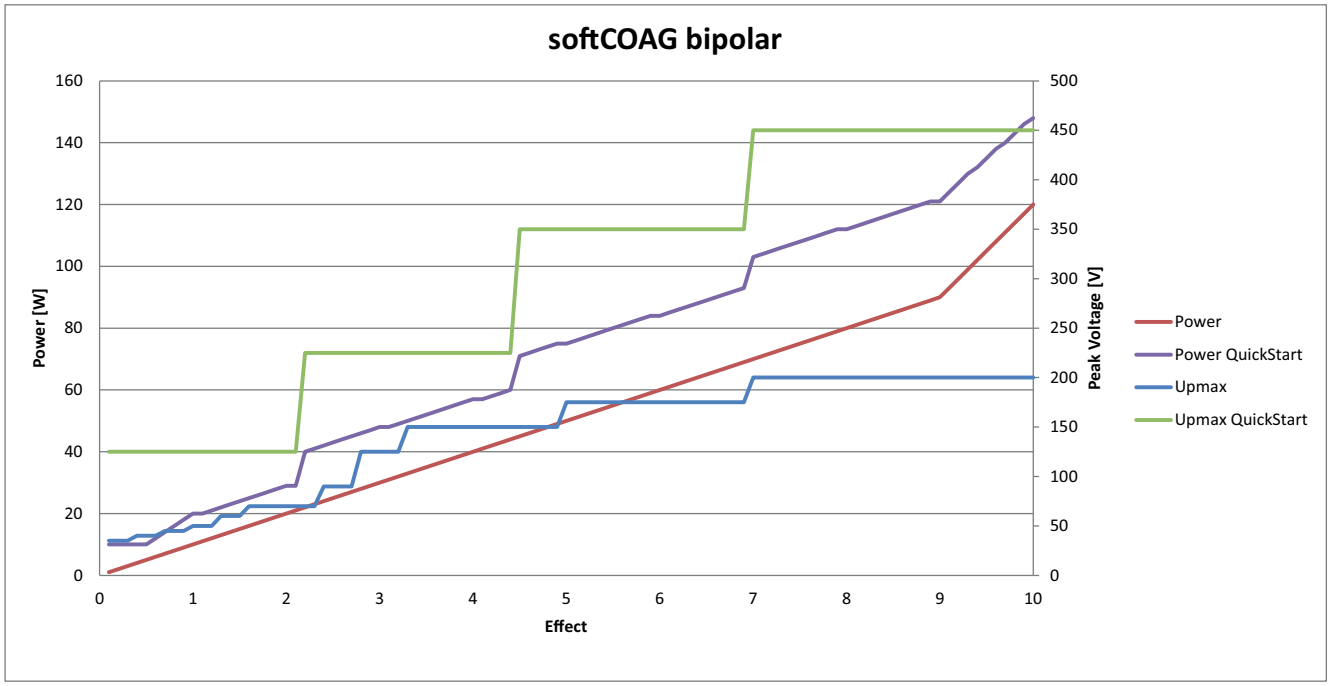


Fig. 12-2

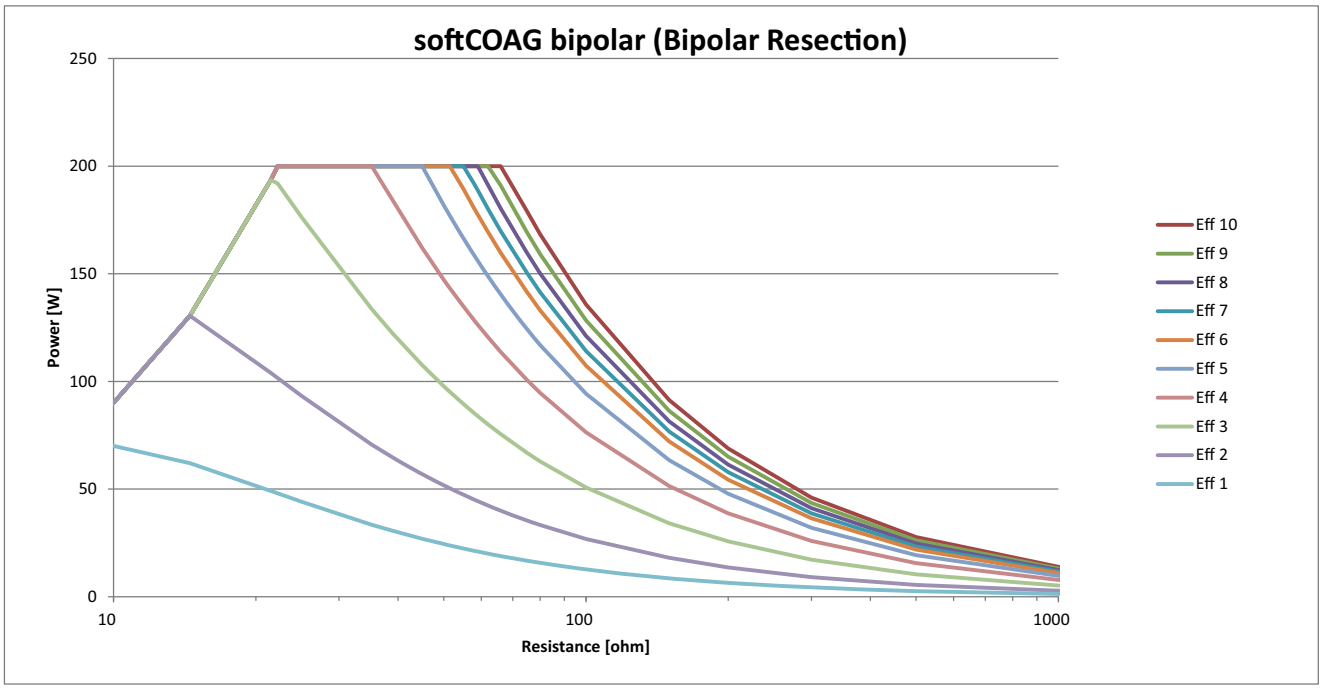


Fig. 12-3

80115-501_V26386
2025-12

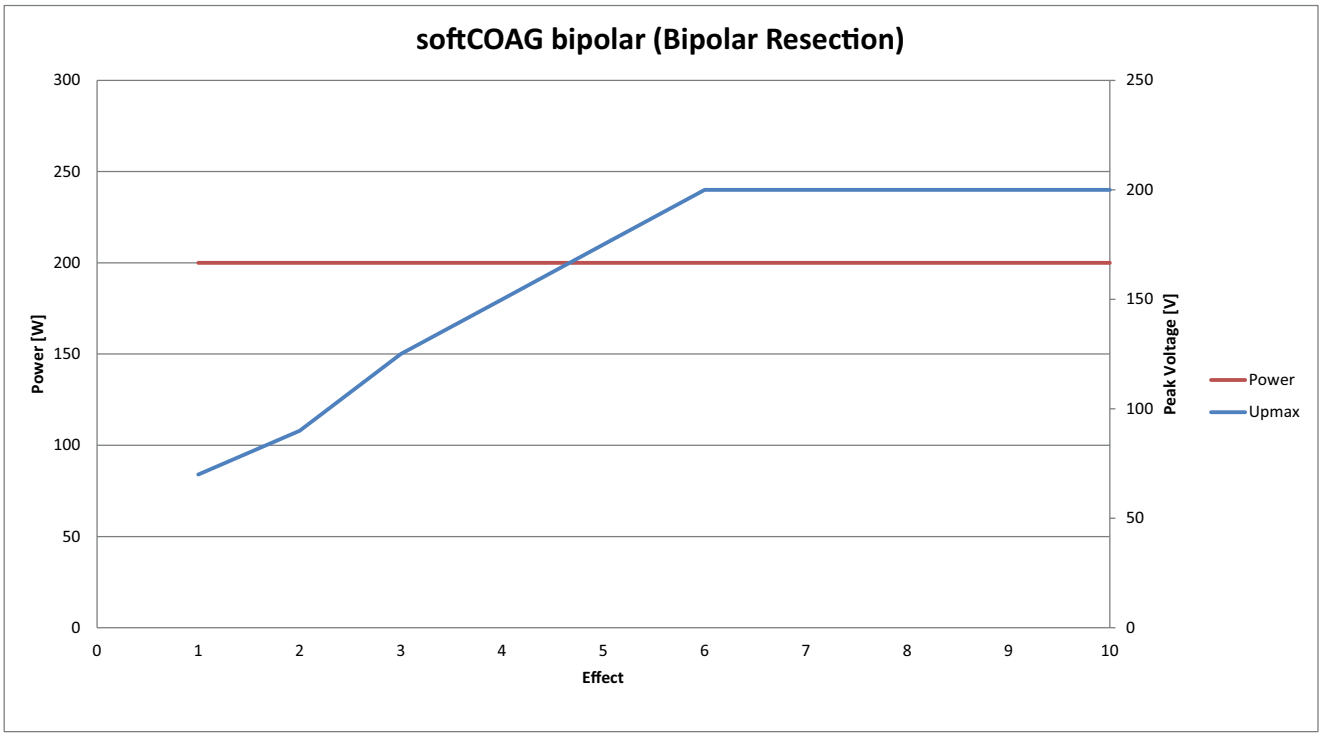
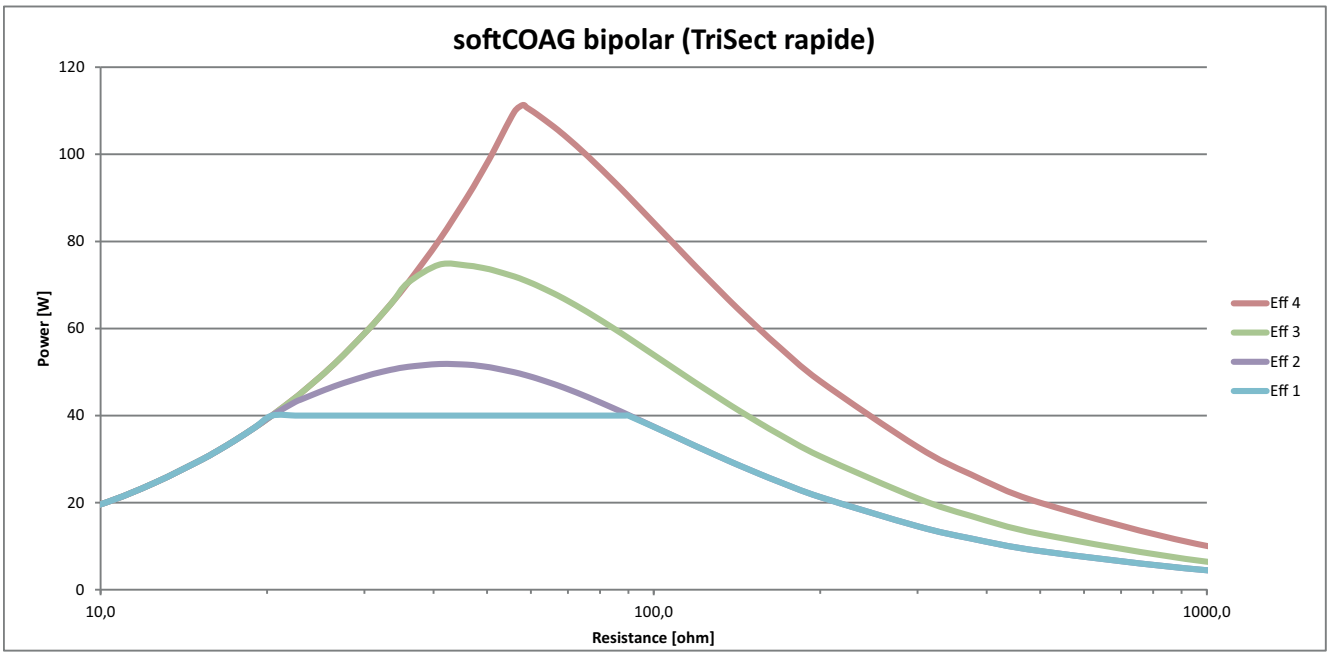


Fig. 12-4



80115-501_V26386
2025-12

Fig. 12-5

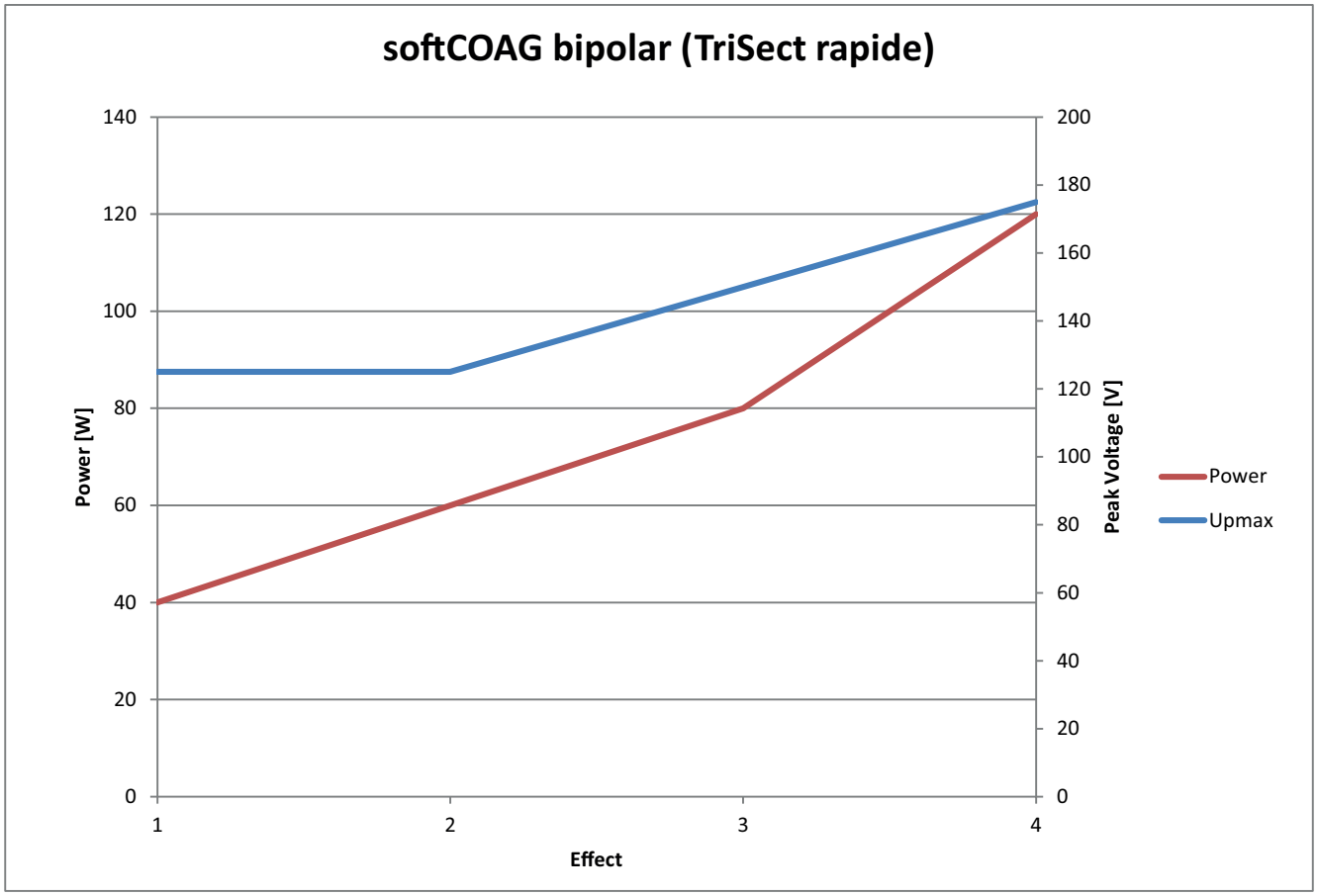


Fig. 12-6

80115-501_V26386
2025-12

forcedCOAG bipolar

Properties

Fast bipolar coagulation.

Areas of use

All bipolar coagulation procedures in which you want to coagulate vessels fast and effectively or want to replace monopolar forceps coagulation.

AUTO START switchable

When the instrument touches tissue, coagulation starts automatically after a specified period of time.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO START symbol to the docking point of the required instrument.

AUTO STOP switchable

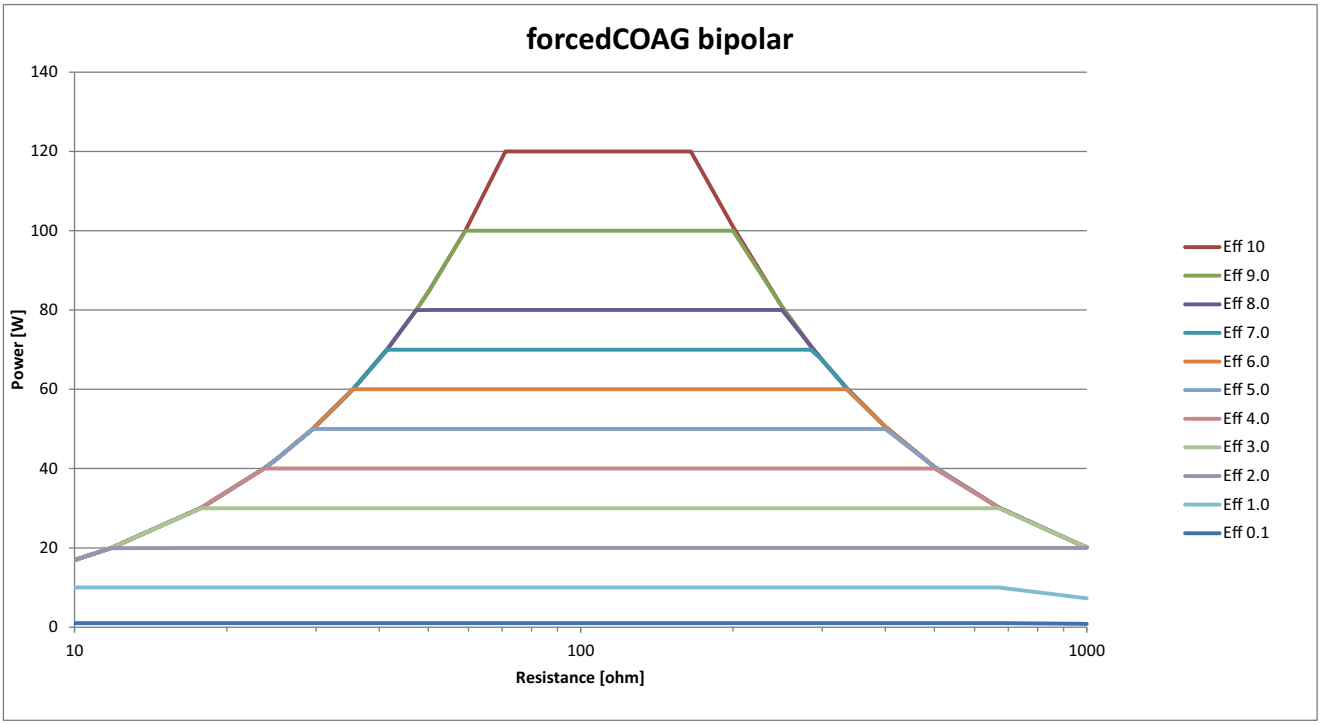
On detection of a spark, adhesion of tissue to the instrument and carbonization is significantly reduced by automatically switching off.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	3.8 (at R_L = 100 Ohm)
Designed load resistance	100 Ohm
Max. HF peak voltage	550 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts

Diagrams



80115-501_V26386
2025-12

Fig. 12-7

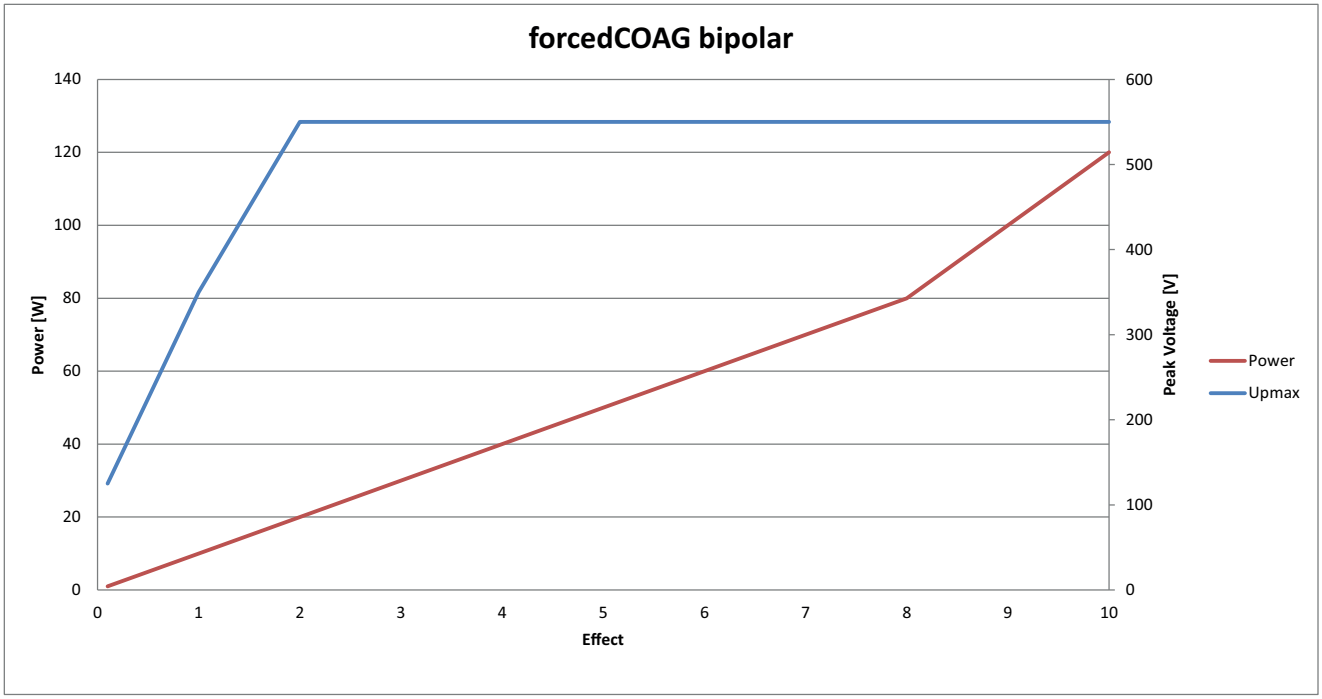


Fig. 12-8

80115-501_V26386
2025-12

thermoSEAL

Properties

Special COAG mode to seal vessels up to 7 mm diameter or to coagulate vascularized tissue, without changing the settings. The appropriate Erbe instruments are required to seal vessels up to 7 mm diameter.

Operating principle: The mode adapts the HF voltage and activation time to the amount of tissue and the instrument used.

Areas of use

All surgical interventions that call for sealing vessels and tissue bundles. Only use with vessel sealing instruments (e.g. Erbe BiClamp).

AUTO START switchable

When the instrument touches tissue, coagulation starts automatically after a specified period of time.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO START symbol to the docking point of the required instrument.

AUTO STOP

The AUTO STOP function is matched to the thermoSEAL mode.

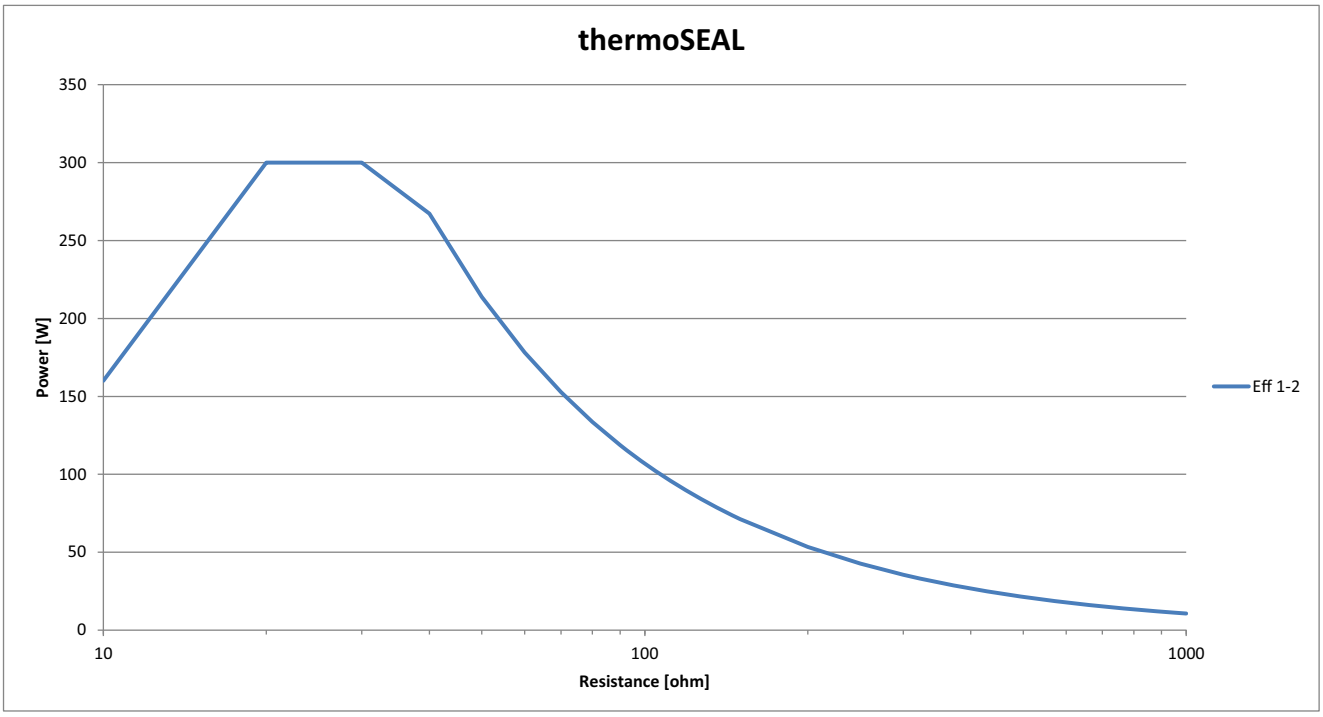
If the user grips the tissue with the jaws and presses the jaws together firmly, the AUTO STOP function stops the activation automatically as soon as the necessary tissue dessication is achieved.

If the user only presses the jaws together lightly, e.g. in coagulation of vascularized tissue, no AUTO STOP occurs. In this case, the user ends the activation.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.45 (at R_L = 25 Ohm)
Designed load resistance	25 Ohm
Max. HF peak voltage	180 V
Number of effects	1 – 2
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	360 watts

Diagram



80115-501_V26386
2025-12

Fig. 12-9

biCLAMP

Properties

Coagulation property: Sealing vessels up to 7 mm in diameter or to coagulate vascularized tissue.

Dissection property: none.

Adhesion of tissue to the instrument and carbonization of the tissue are greatly reduced because the low voltage prevents sparking.

Areas of use

Endoscopic and surgical interventions with Erbe vessel sealing instruments (e.g. Erbe BiClamp).

AUTO STOP

The AUTO STOP function automatically ends the activation as soon as the necessary tissue desiccation is reached.

Technical data

Type of HF voltage	modulated sinusoidal alternating voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.49 (at R_L = 25 ohms)
Designed load resistance	25 ohms
Max. HF peak voltage	225 V
Number of effects	1 – 4
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	360 watts

80115-501_V26386
2025-12

Diagrams

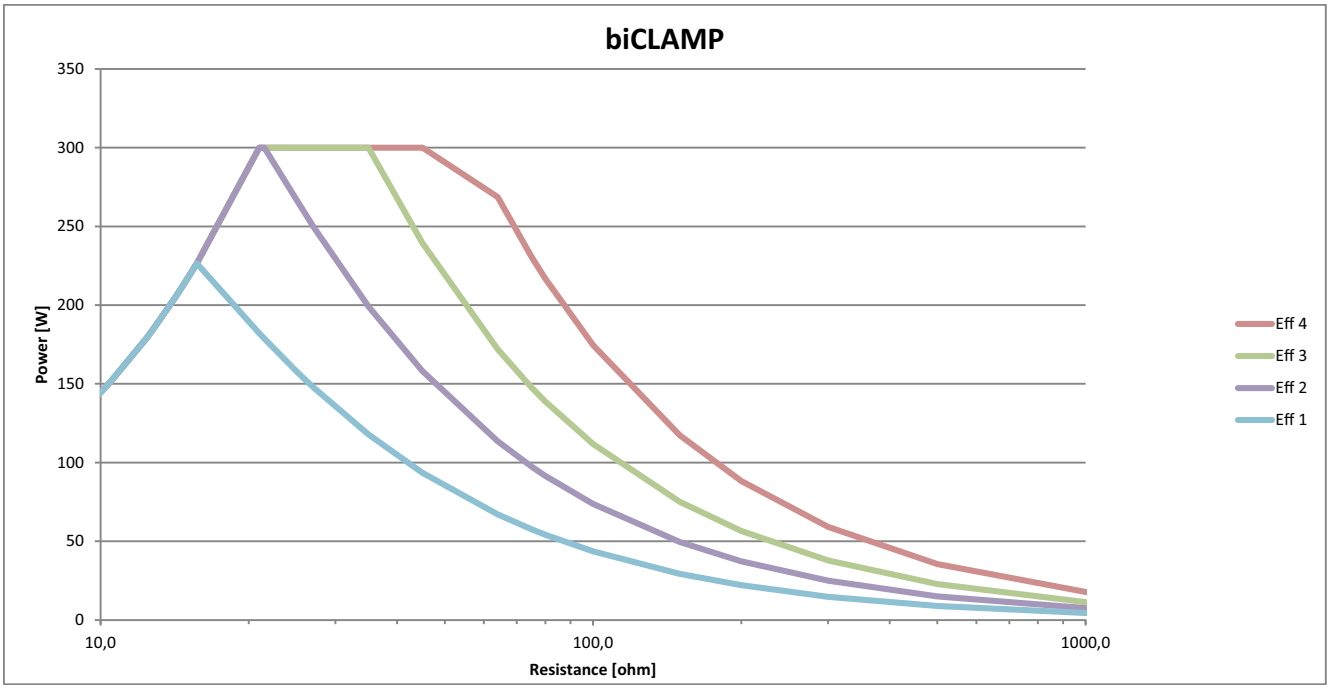


Fig. 12-10

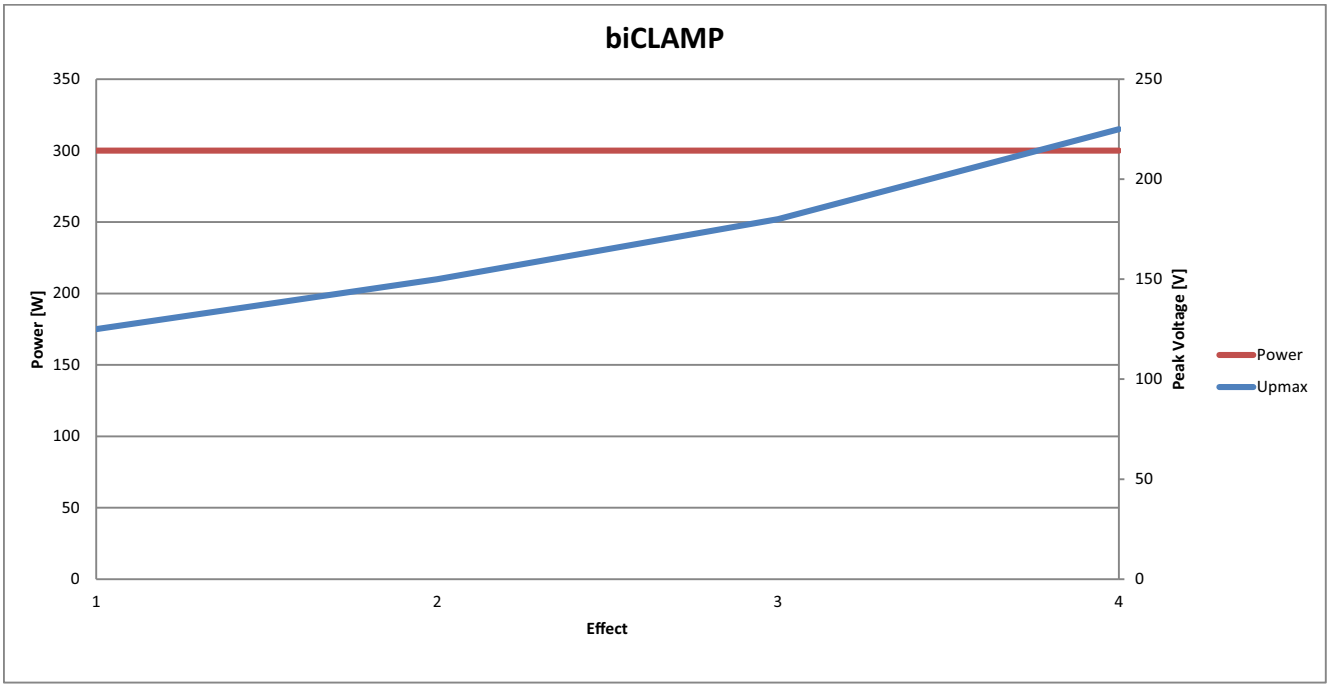


Fig. 12-11

80115-501_V26386
2025-12

Chapter 13
APC modes (only available with the APC module)

forcedAPC

Properties

Effective, fast, "standard" argon plasma coagulation with ignition assistance for safe ignition of the plasma.

Areas of use

Hemostasis of diffuse areas of bleeding, devitalization and reduction of tissue.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	7.65 (at R_L = 500 Ohm)
Designed load resistance	500 Ohm
Max. HF peak voltage	4300 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	200 mA

80115-501_V26386
2025-12

Diagrams

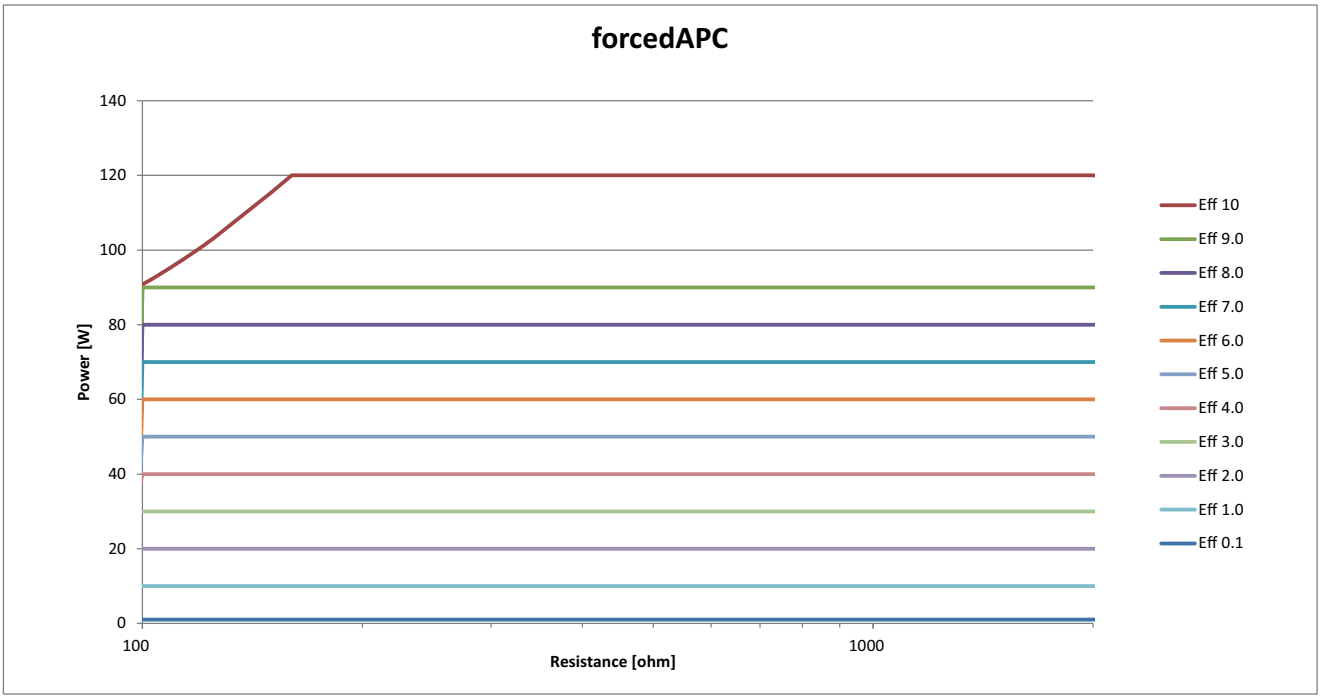


Fig. 13-1

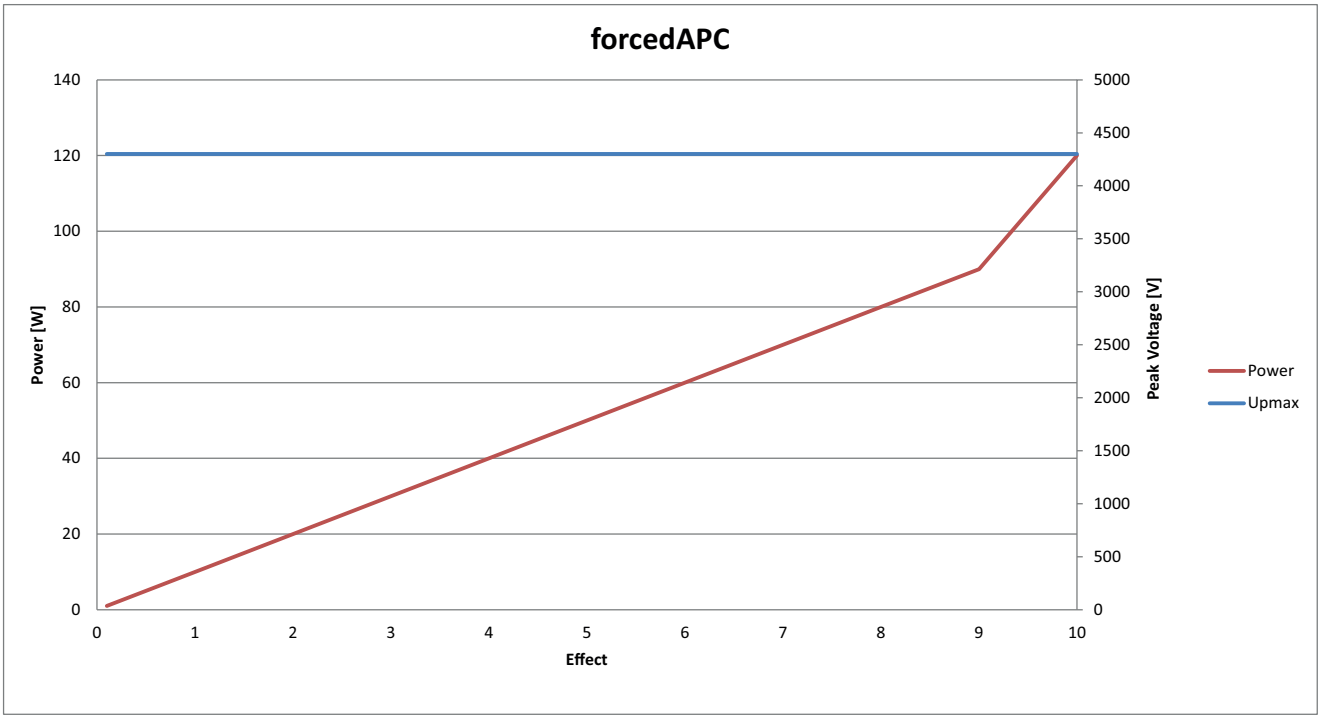


Fig. 13-2

80115-501_V26386
2025-12

preciseAPC

Properties

Fine argon plasma coagulation with well controllable hemostasis at the tissue surface, largely independent of the distance between applicator and tissue.

Areas of use

Targeted, superficial coagulation for discrete findings in temperature-sensitive areas.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	7.76 (at R_L = 1000 Ohm)
Designed load resistance	1,000 ohms
Max. HF peak voltage	4950 V
Number of effects	1 – 10
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	25 watts
Max. RMS current (maximum HF output current in normal use)	150 mA

80115-501_V26386
2025-12

Diagrams

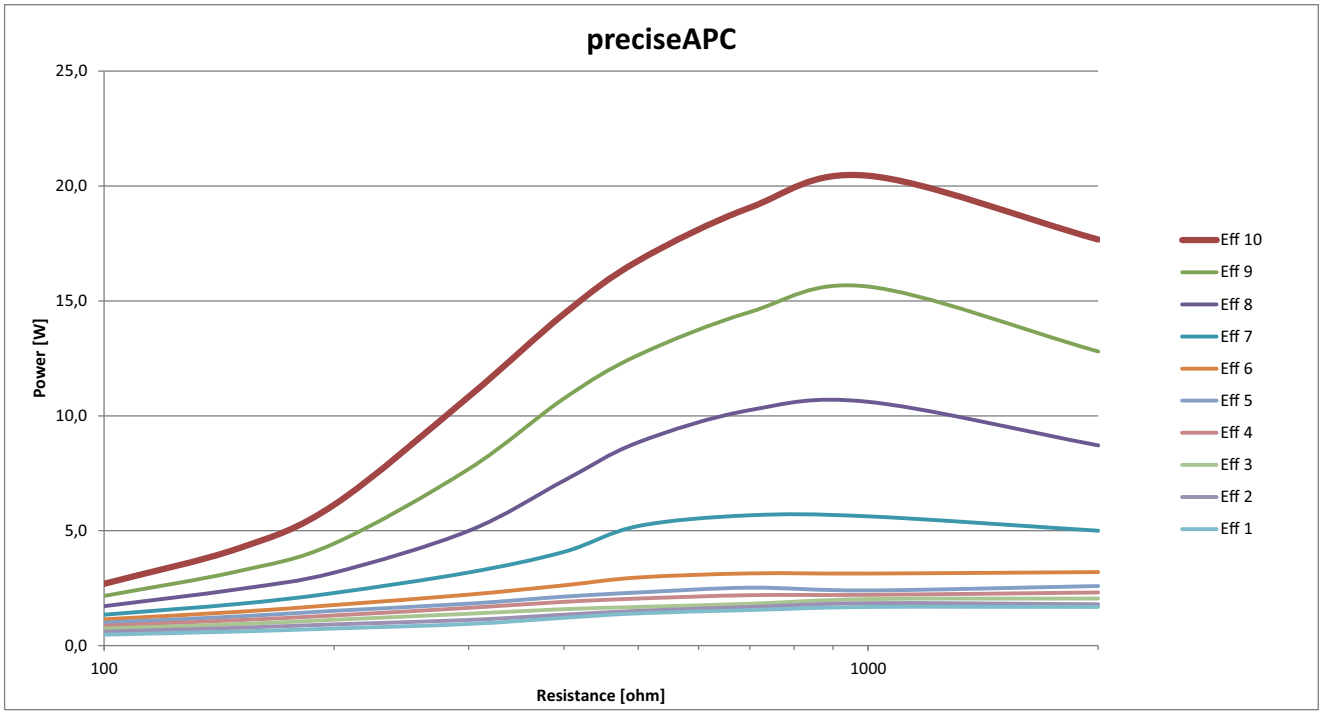


Fig. 13-3

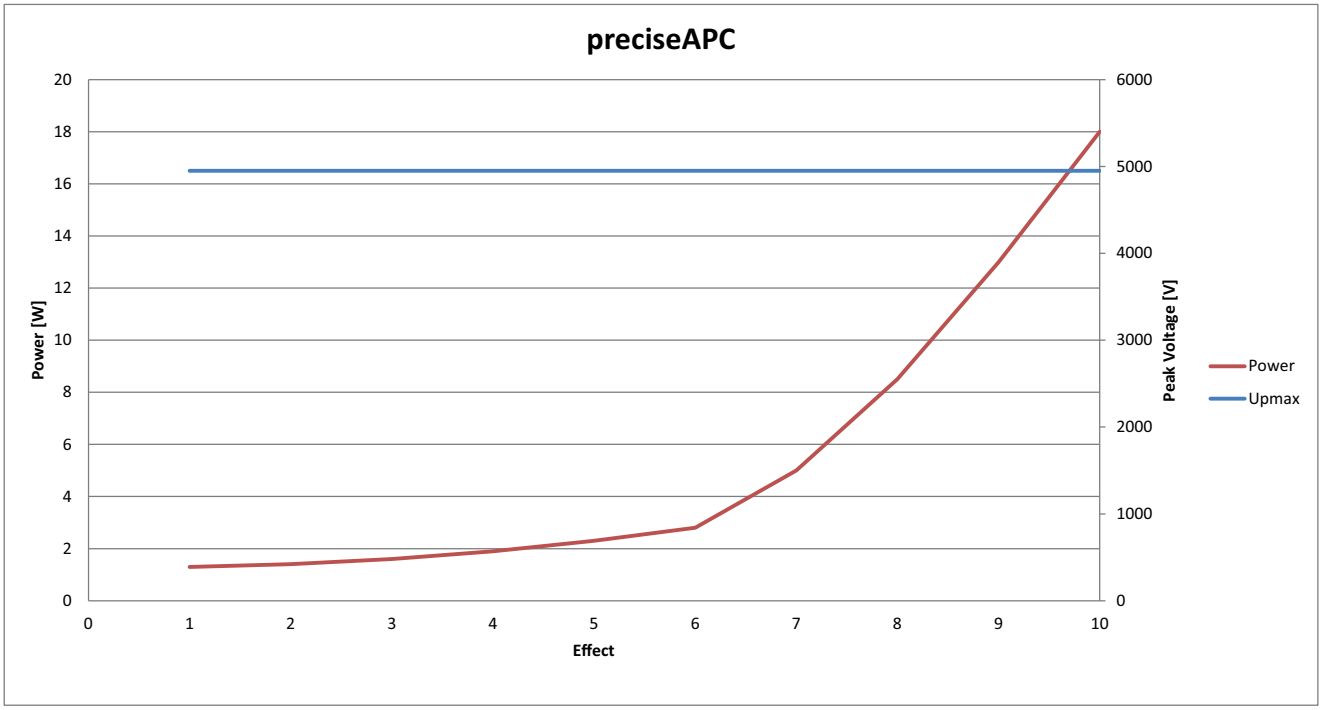


Fig. 13-4

pulsedAPC

Properties Controlled argon plasma coagulation with reduced energy input from pulses.

Areas of use Hemostasis of diffuse areas of bleeding. Devitalization and reduction of tissue with emphasis on controlled power output.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	7.73 (at R_L = 500 Ohm)
Designed load resistance	500 Ohm
Max. HF peak voltage	4950 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	190 mA

80115-501_V26386
2025-12

Diagrams

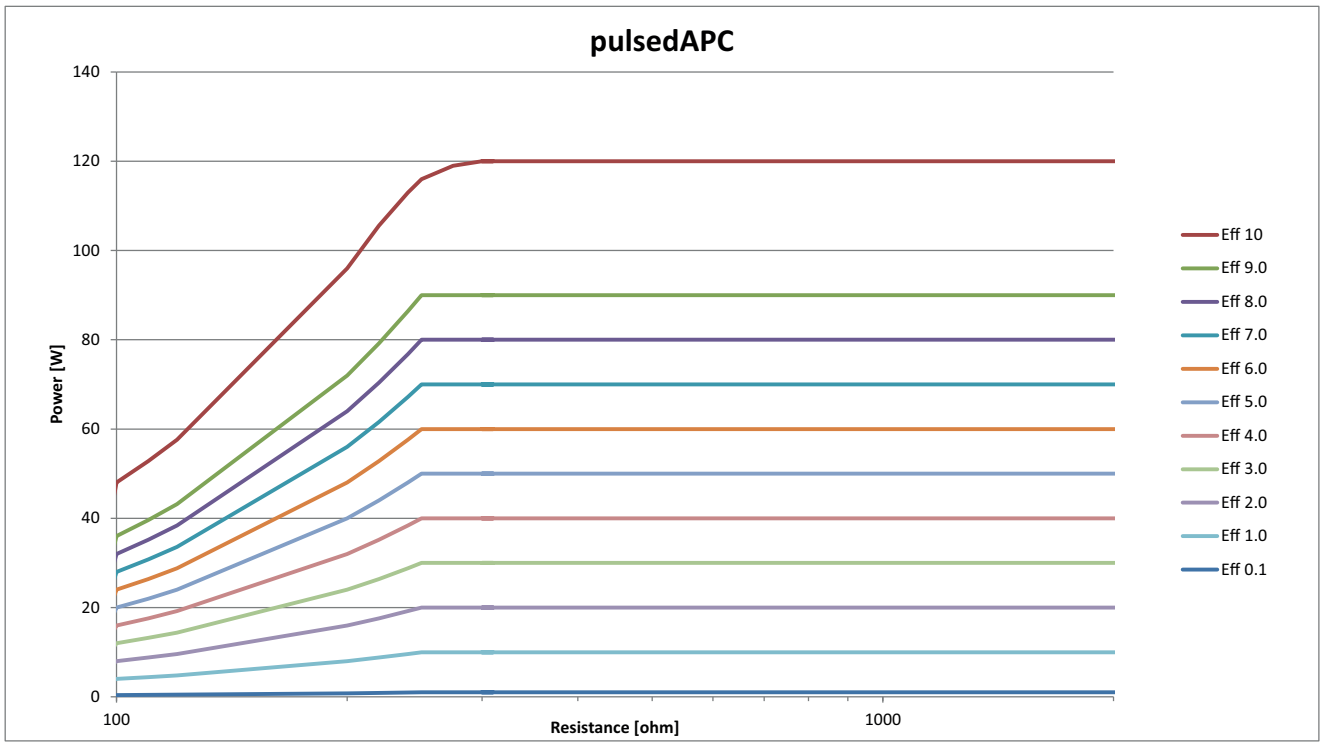


Fig. 13-5

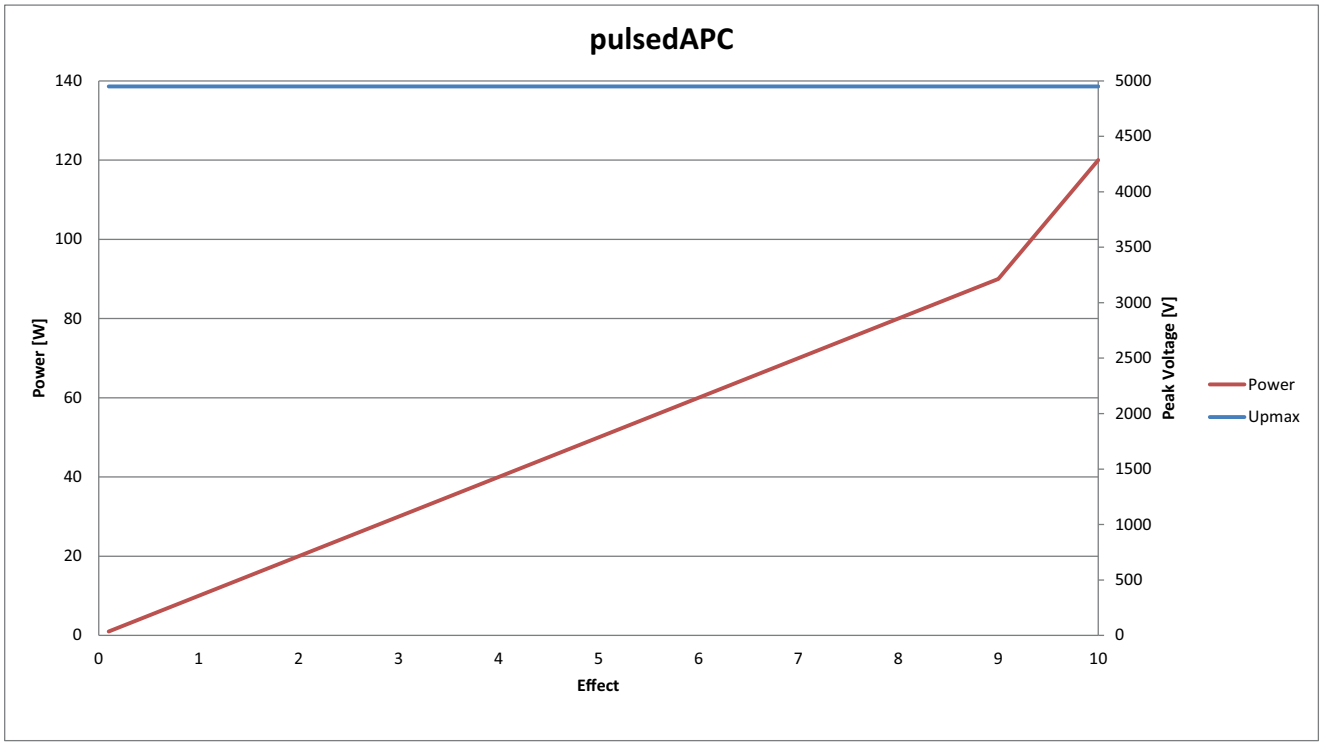


Fig. 13-6

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 14
Argon-supported modes (only available with the APC module)

autoCUT argon

Properties

Reproducible, smooth cuts, minimal to moderate hemostasis.

PPS (Power Peak System)

The autoCUT mode is equipped with PPS.

A special problem during incision may be posed by the initial incision phase, in particular when the cutting electrode is pressed firmly against the tissue to be cut, before activation of the HF generator. The cutting electrode therefore has a relatively extensive, low-resistance contact with the tissue, e.g. in TUR.

In such cases, the HF generator must offer an above-average power so that the initial incision is not delayed, as otherwise an excessive coagulation necrosis may be produced at the point of initial incision.

The VIO 3 is equipped with automatic power control (PPS). PPS detects low resistance loads and controls the HF generator such that it briefly provides sufficient power to ensure the HF voltage necessary or intensity of the electrical arc for the cutting quality selected even with low-resistance loads.

Thanks to PPS, the average power can be limited to relatively low levels, something which represents improved protection from unintentional thermal tissue damage.

Areas of use

All cutting procedures in electrically conductive tissue: e.g. muscle tissue and vascular tissue. Exposure and cutting of fine structures.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.62 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	750 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	400 watts
Max. RMS current (maximum HF output current in normal use)	190 mA

80115-501_V26386
2025-12

Diagrams

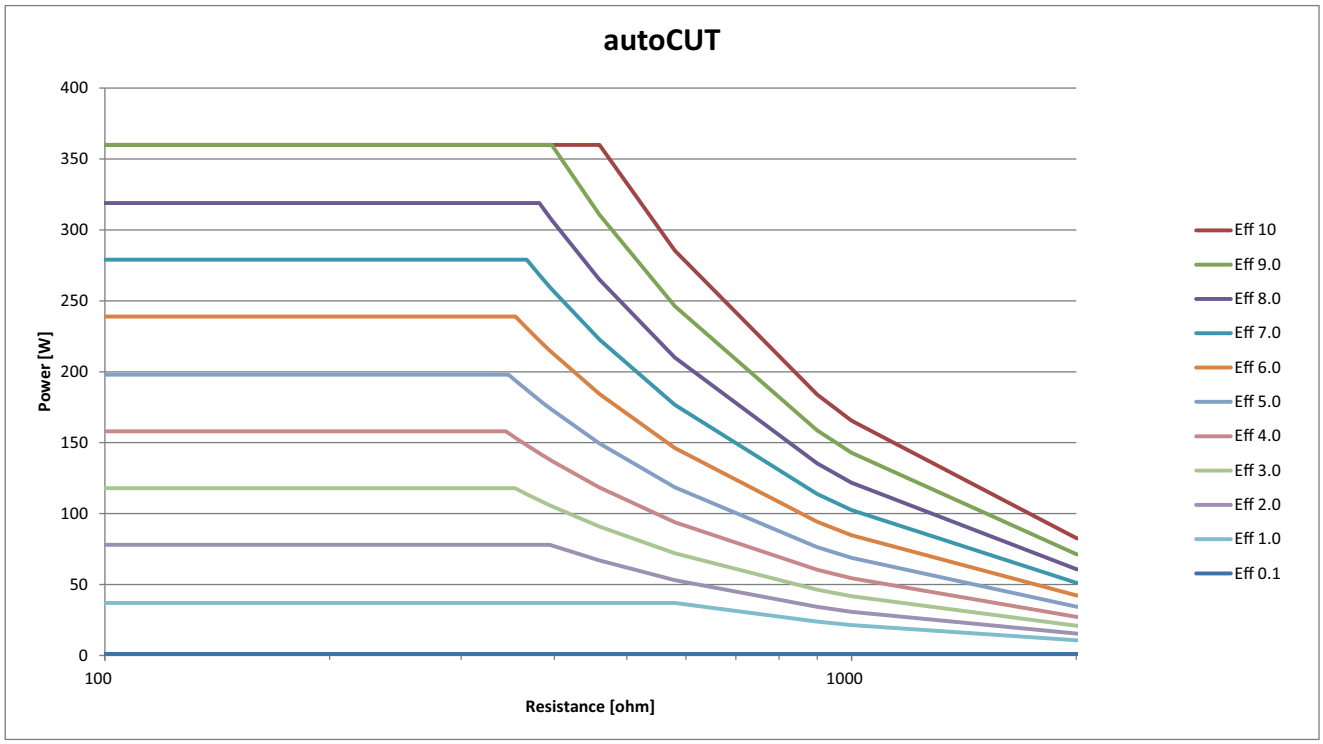
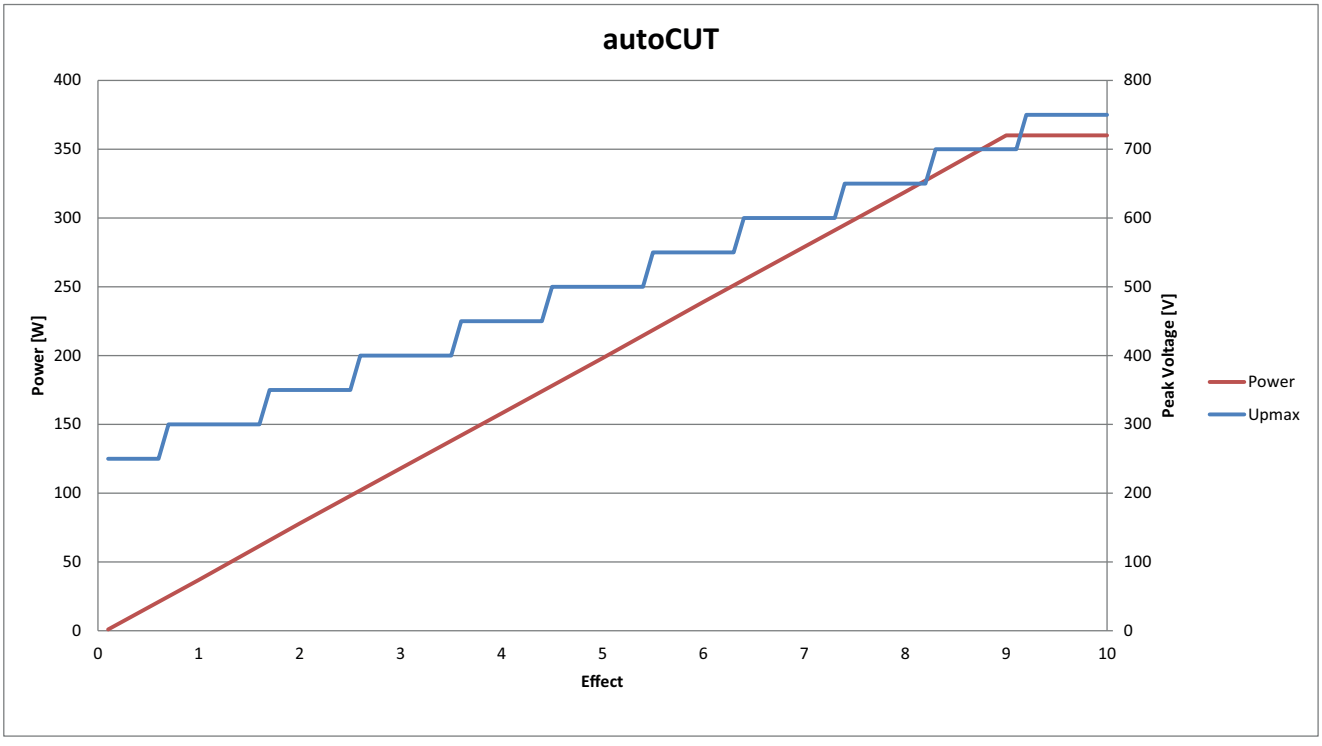


Fig. 14-1



80115-501_V26386
2025-12

Fig. 14-2

highCUT argon

Properties

Reproducible, smooth cuts, in particular in poorly conductive and varying tissue.

PPS (Power Peak System)

The highCUT mode is equipped with PPS.

A special problem during incision may be posed by the initial incision phase, in particular when the cutting electrode is pressed firmly against the tissue to be cut, before activation of the HF generator. The cutting electrode therefore has a relatively extensive, low-resistance contact with the tissue, e.g. in TUR.

In such cases, the HF generator must offer an above-average power so that the initial incision is not delayed, as otherwise an excessive coagulation necrosis may be produced at the point of initial incision.

The VIO 3 is equipped with automatic power control (PPS). PPS detects low resistance loads and controls the HF generator such that it briefly provides sufficient power to ensure the HF voltage necessary or intensity of the electrical arc for the cutting quality selected even with low-resistance loads.

Thanks to PPS, the average power can be limited to relatively low levels, something which represents improved protection from unintentional thermal tissue damage.

Areas of use

For example, for cutting fat-containing structures, cutting under water, e.g. with TUR-P.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.62 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1100 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of arc intensity
Max. output across the designed load resistor	400 watts
Max. RMS current (maximum HF output current in normal use)	410 mA

80115-501_V26386
2025-12

Diagrams

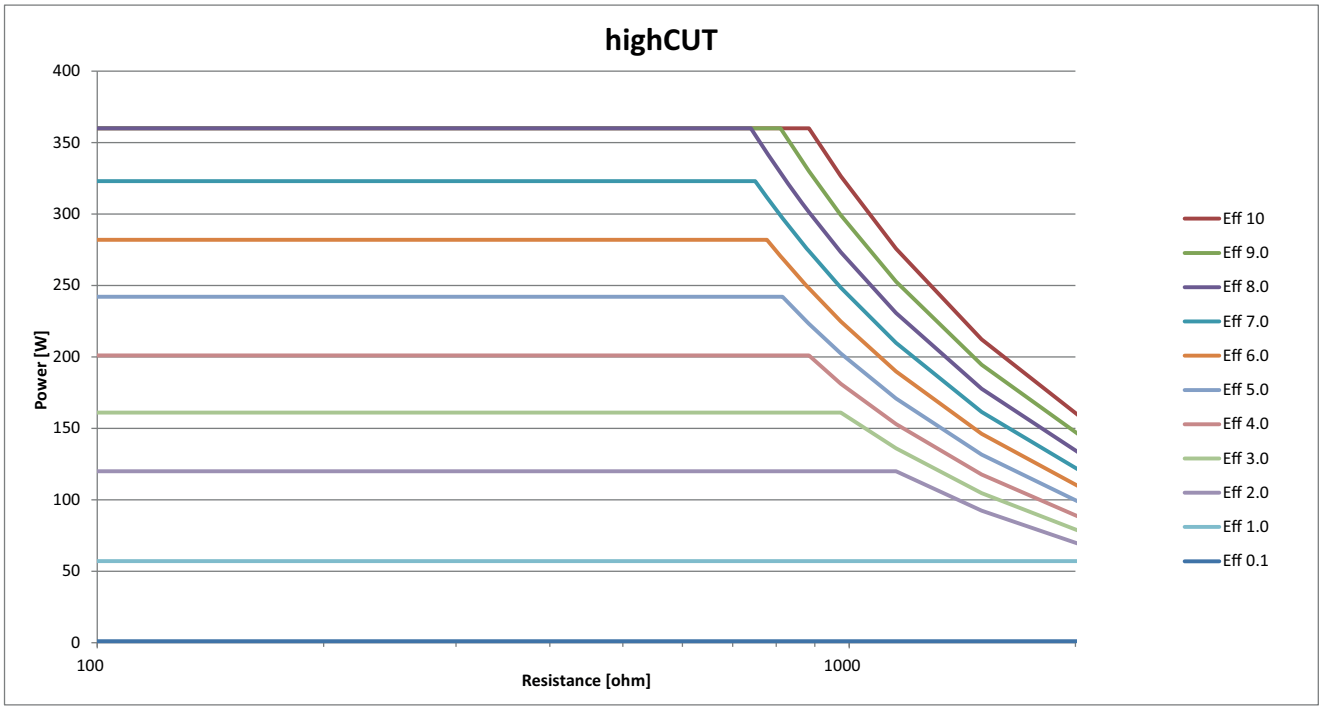


Fig. 14-3

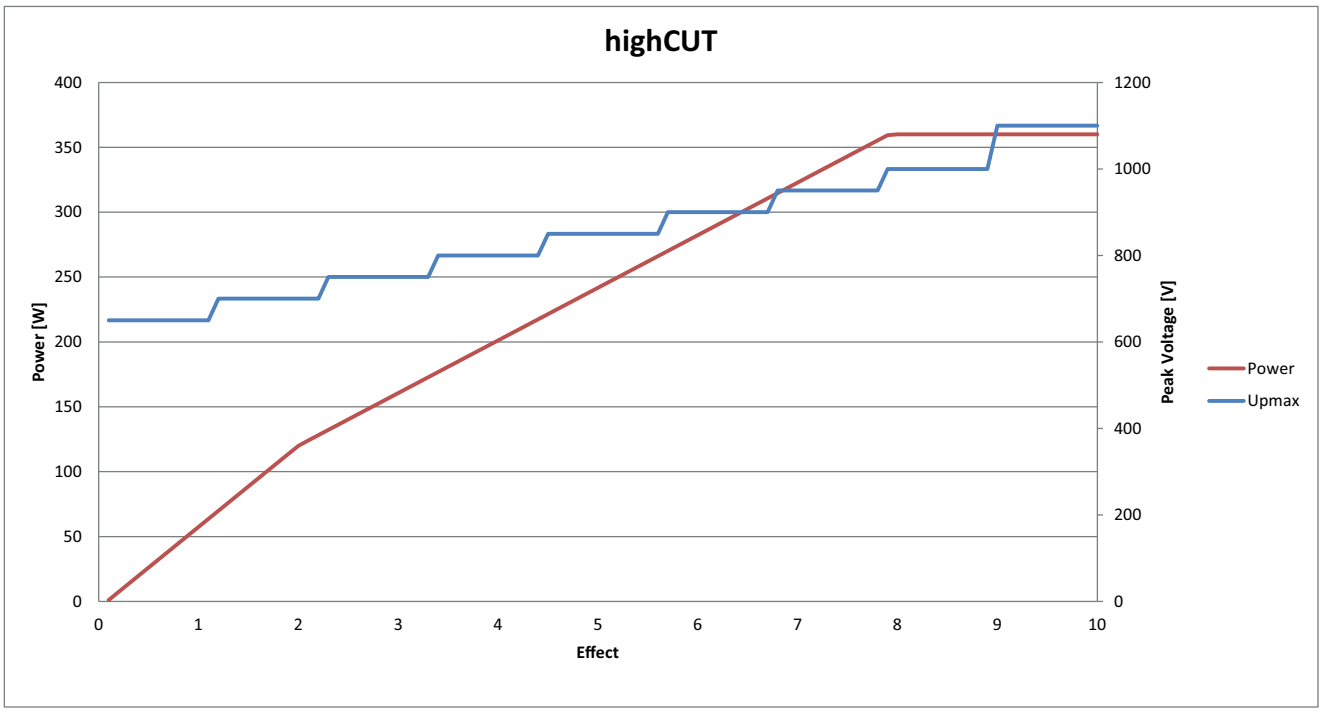


Fig. 14-4

80115-501_V26386
2025-12

dryCUT argon

Properties

Reproducible, slightly slower cut with pronounced hemostasis.

Areas of use

For example, cuts in "open surgery" and cuts in endoscopic interventions that require very good primary hemostasis during the cut and require a somewhat slower cutting speed.

miC switchable

Switching on miC ("Moderate Initial Cut") slows the initial cutting phase somewhat, in order to reduce the energy input during the process.

Touch the CUT effect display on the main screen if required. A window opens in which you can switch on miC.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	Effect: 0.1 – 4.9: 3.1 (at R_L = 300 Ohm) Effect: 5.0 – 7.9: 3.38 (at R_L = 300 Ohm) Effect: 8.0 – 10.0: 3.8 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1400 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	290 mA

80115-501_V26386
2025-12

Diagrams

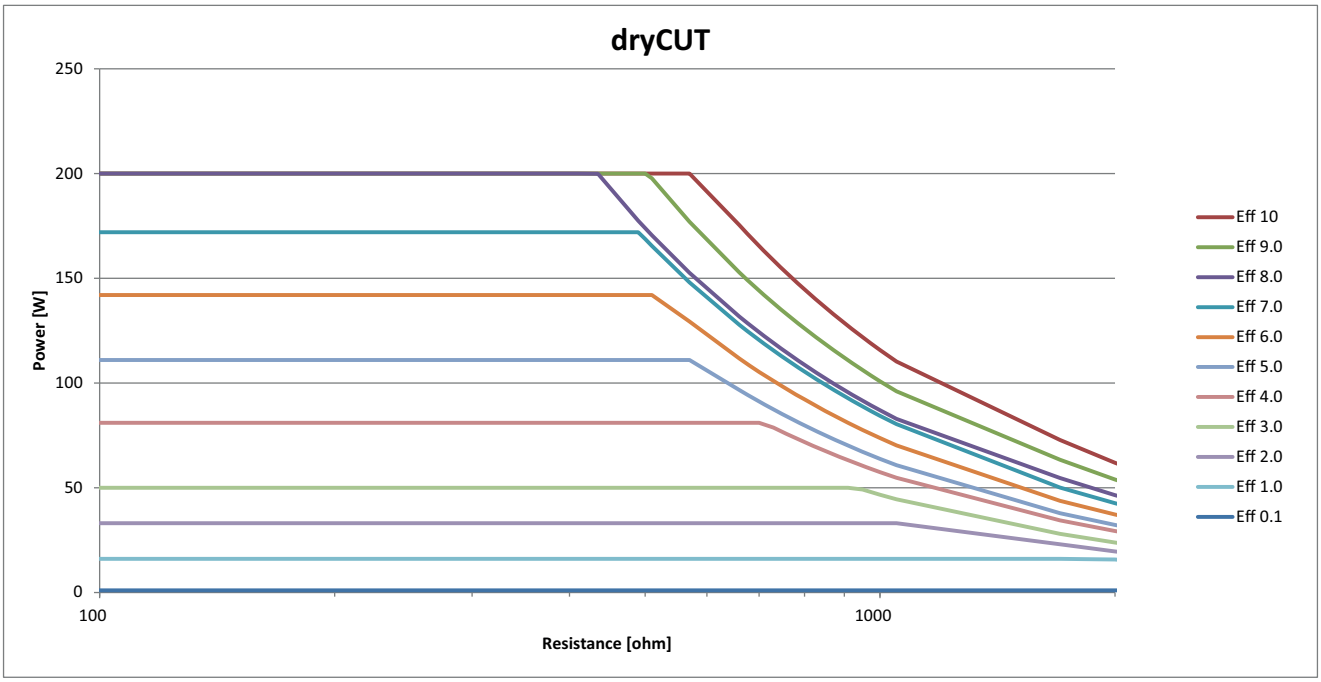


Fig. 14-5

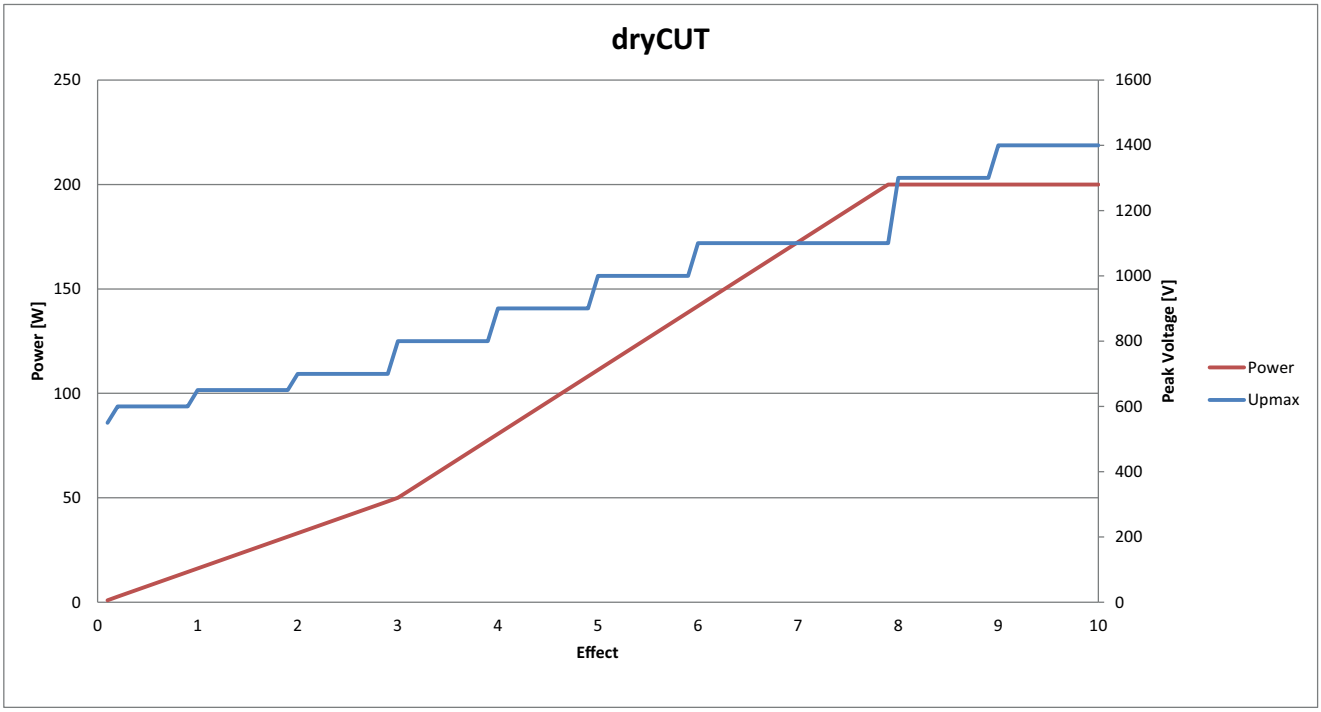


Fig. 14-6

80115-501_V26386
2025-12

softCOAG argon

Properties

Slow, deep coagulation without spark generation, consequently no carbonization of the tissue. Adhesion of the electrode to the tissue is greatly reduced.

Areas of use

All surgical interventions that call for safe, "deep" coagulation or in which adhesion of the electrode would have a negative effect on the coagulation process.

AUTO STOP switchable

AUTO STOP ends activation automatically on attainment of sufficient desiccation. Increasing the effect level reduces the interval until automatic termination of activation when using AUTO STOP. Coagulation depth essentially remains unchanged for the same instrument and the same tissue.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

QuickStart switchable

With QuickStart, a brief voltage pulse is applied to the tissue to attain a tissue effect quicker, without essentially influencing the coagulation result.

Touch the COAG effect display on the main screen if required. A window opens in which you can switch on QuickStart.

Technical data

Type of HF voltage	Unmodulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	1.51 (at R_L = 50 Ohm)
Designed load resistance	50 Ohm
Max. HF peak voltage	200 V 450 V QuickStart
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	1120 mA

80115-501_V26386
2025-12

Diagrams

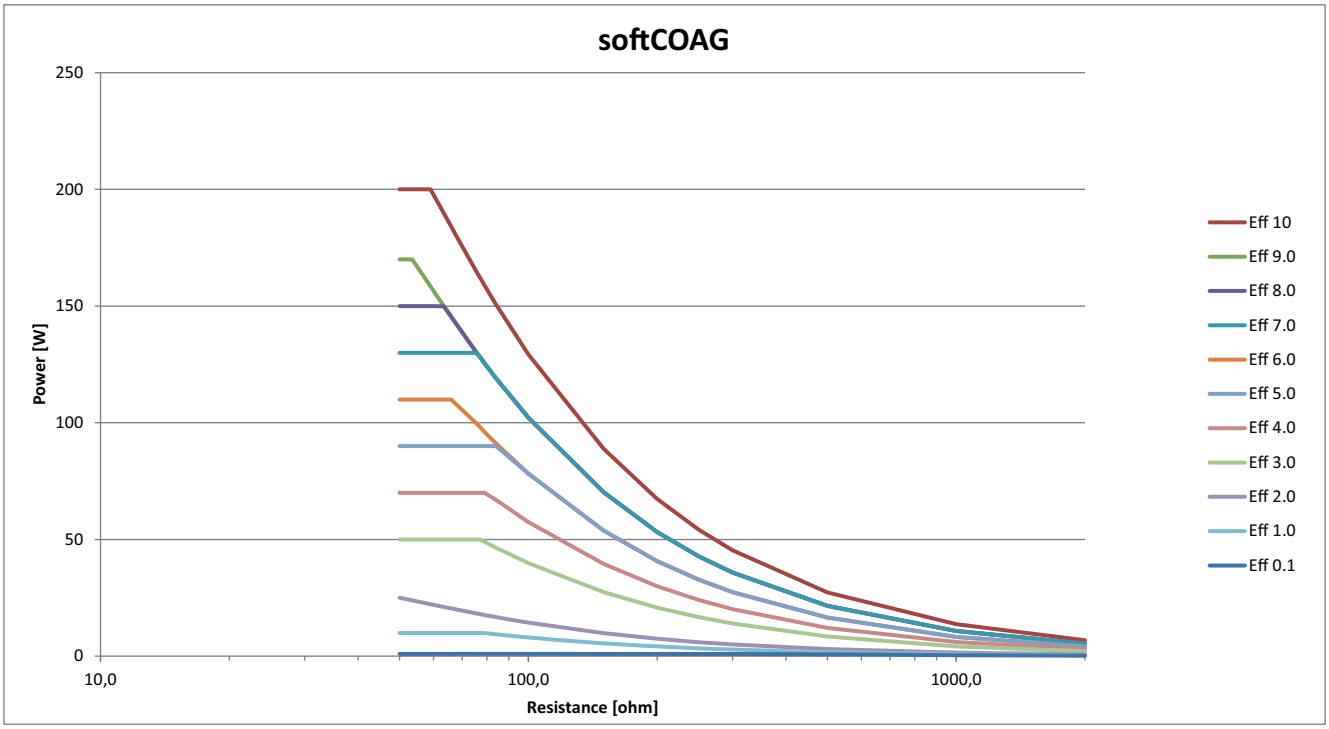


Fig. 14-7

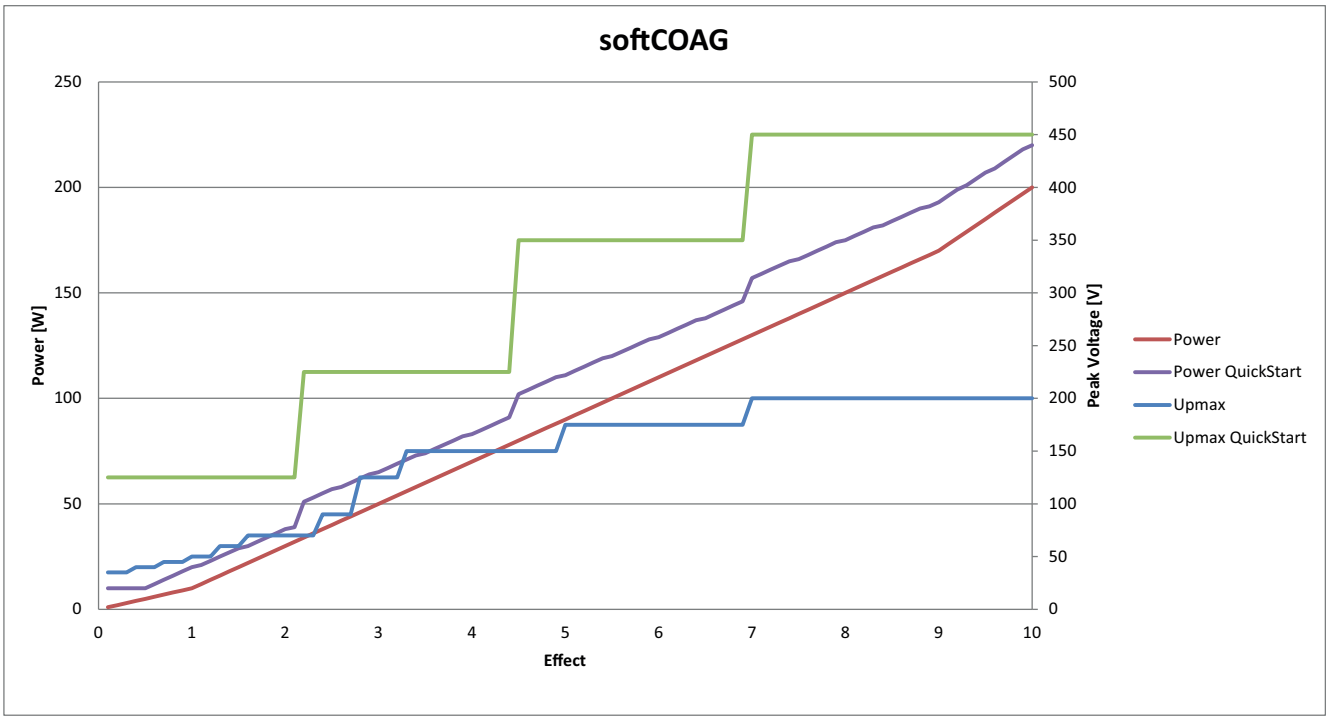


Fig. 14-8

80115-501_V26386
2025-12

forcedCOAG argon

Properties

Effective, fast "standard" coagulation.

Areas of use

Contact coagulation, clamp coagulation, e.g. via insulated monopolar forceps.

AUTO STOP switchable

On detection of a spark, adhesion of tissue to the instrument and carbonization is significantly reduced by automatically switching off.

Touch the arrow on the lower edge of the main screen if required. The *Assign activation type* field opens. Drag the AUTO STOP symbol to the docking point of the required instrument.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	5.8 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1800 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	870 mA

80115-501_V26386
2025-12

Diagrams

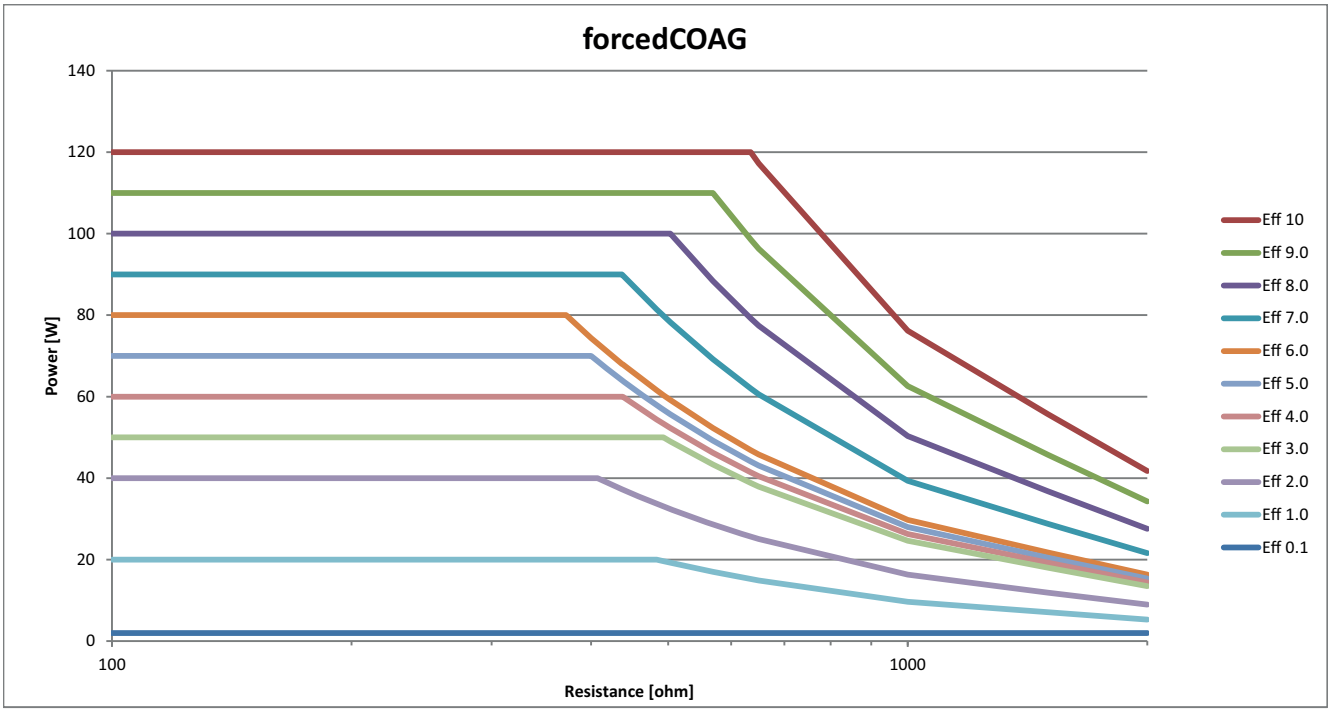


Fig. 14-9

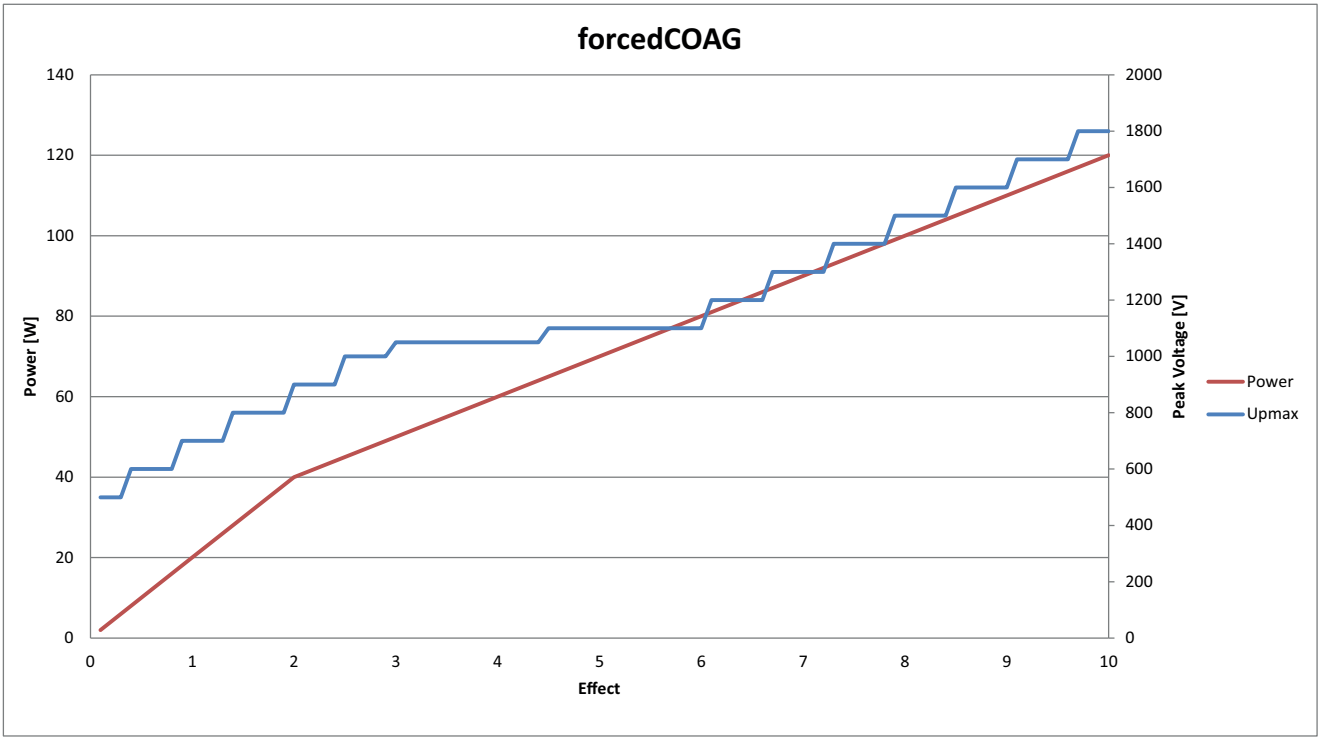


Fig. 14-10

80115-501_V26386
2025-12

swiftCOAG argon

Properties

Fast, effective coagulation, which is highly suitable for exposure with high hemostasis owing to its limited tissue-cutting property.

Areas of use

Coagulation and exposure.

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	6.0 (at R_L = 200 Ohm)
Designed load resistance	200 Ohm
Max. HF peak voltage	2500 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	630 mA

80115-501_V26386
2025-12

Diagrams

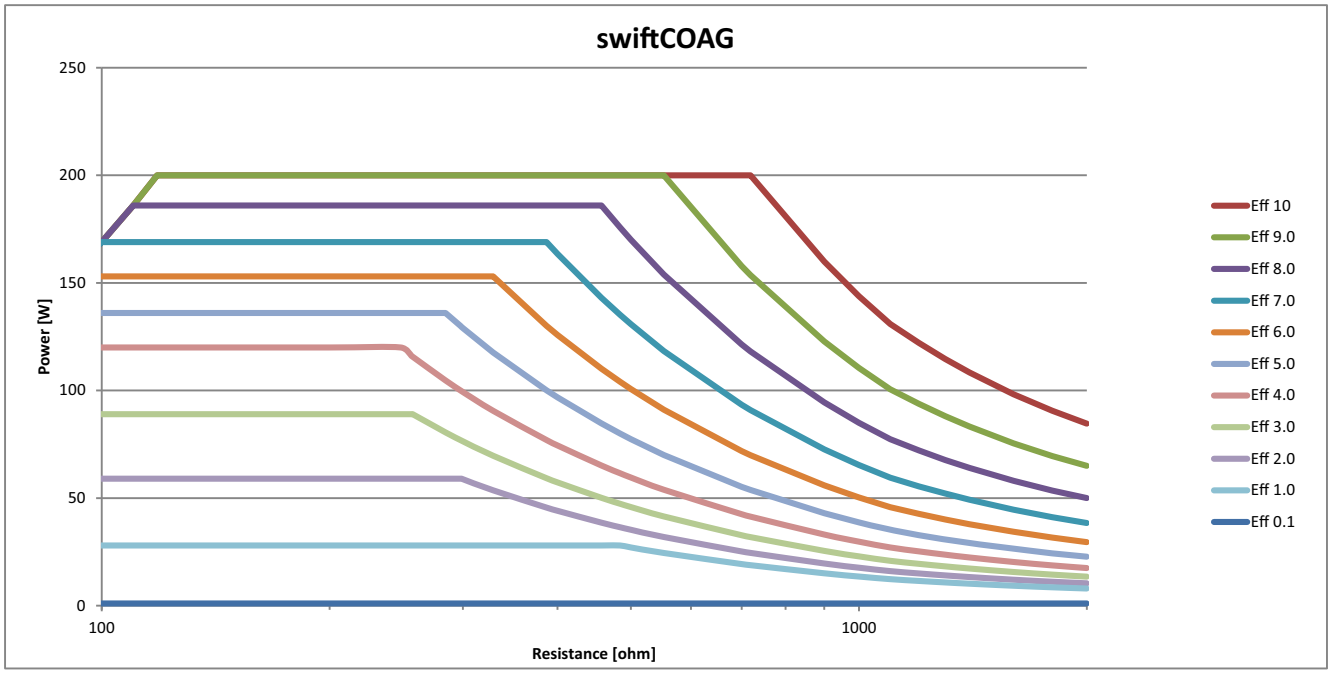


Fig. 14-11

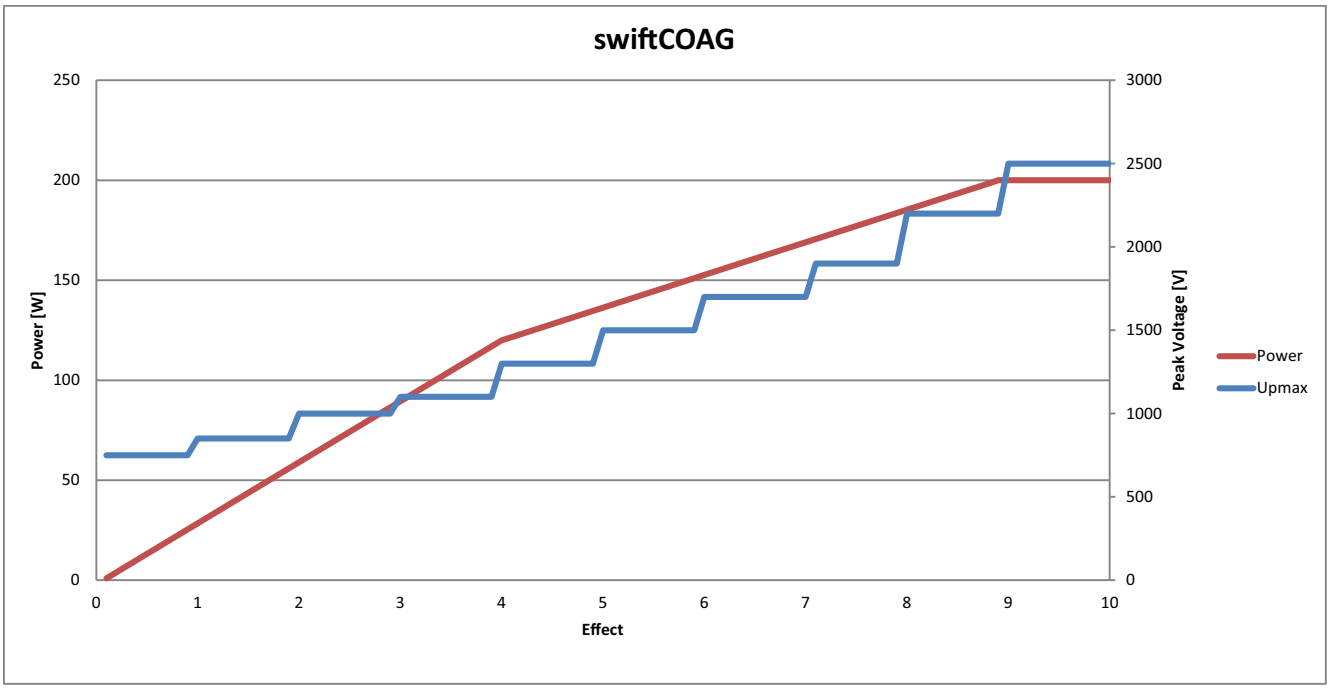


Fig. 14-12

preciseSECT argon

Properties

Fast, effective coagulation, with limited tissue-cutting property. Optimized exposure characteristics through dynamic adaptation of modulation.

Areas of use

Coagulation, clamp coagulation and exposure

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	4.0 (at R_L = 300 Ohm)
Designed load resistance	300 Ohm
Max. HF peak voltage	1800 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	144 watts
Max. RMS current (maximum HF output current in normal use)	950 mA

80115-501_V26386
2025-12

Diagrams

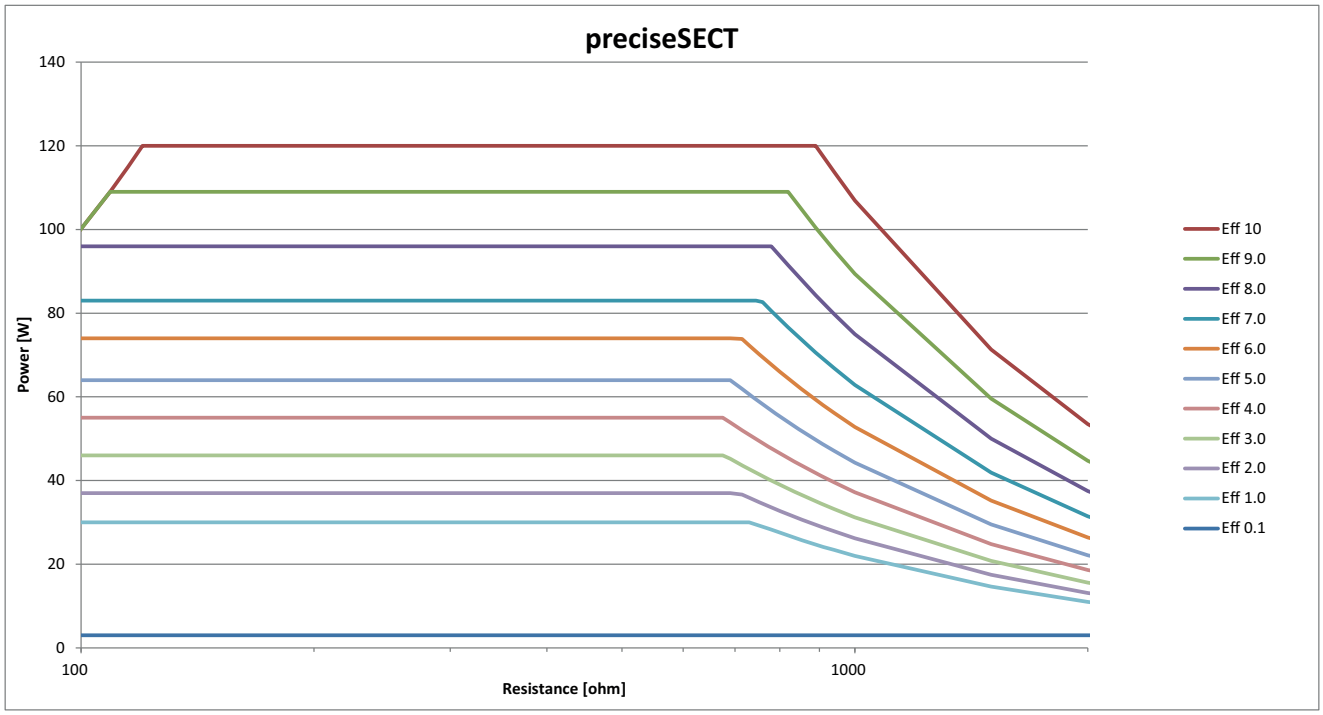


Fig. 14-13

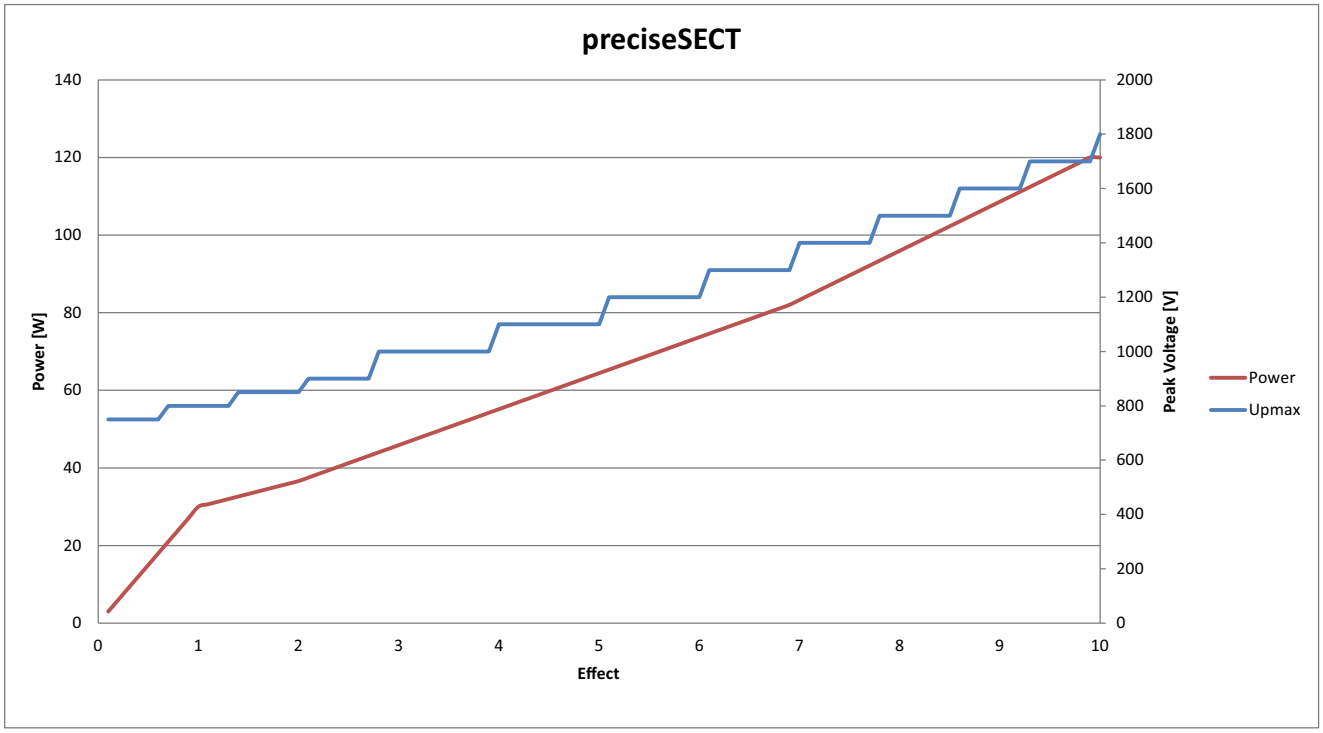


Fig. 14-14

80115-501_V26386
2025-12

twinCOAG argon

Properties

Fast, effective coagulation, which is highly suitable for exposure with high hemostasis owing to its limited tissue-cutting property. Two monopolar instruments can be activated at the same time.

WARNING! In the twinCOAG mode, the output power of any of the active electrodes can change.

Areas of use

Coagulation and exposure with simultaneous activation

Technical data

Type of HF voltage	Pulse-modulated sinusoidal AC voltage
Nominal frequency	350 kHz (no load) ±10%
Crest factor	5.9 (at R_L = 150 Ohm)
Designed load resistance	150 Ohm
Max. HF peak voltage	2000 V
Number of effects	0.1 – 10.0
Consistency of effects	Automatic control of HF peak voltage
Max. output across the designed load resistor	240 watts
Max. RMS current (maximum HF output current in normal use)	710 mA

80115-501_V26386
2025-12

Diagrams

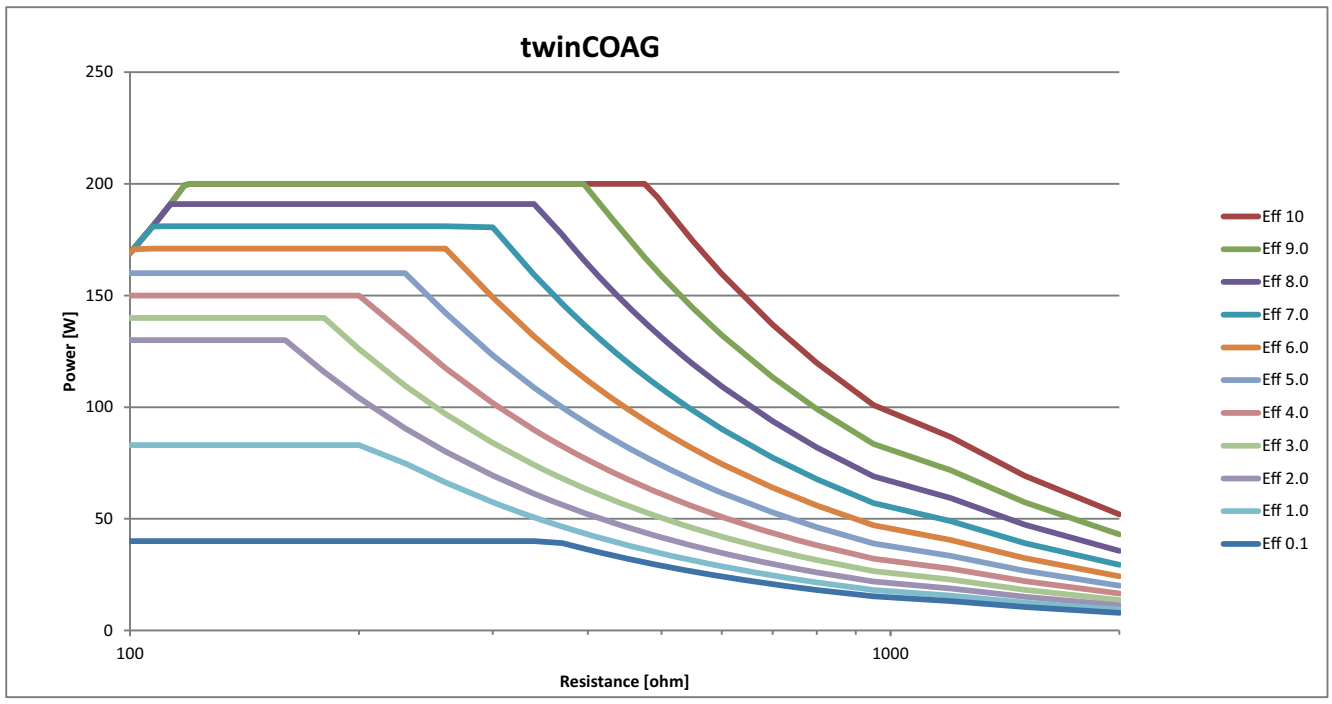


Fig. 14-15

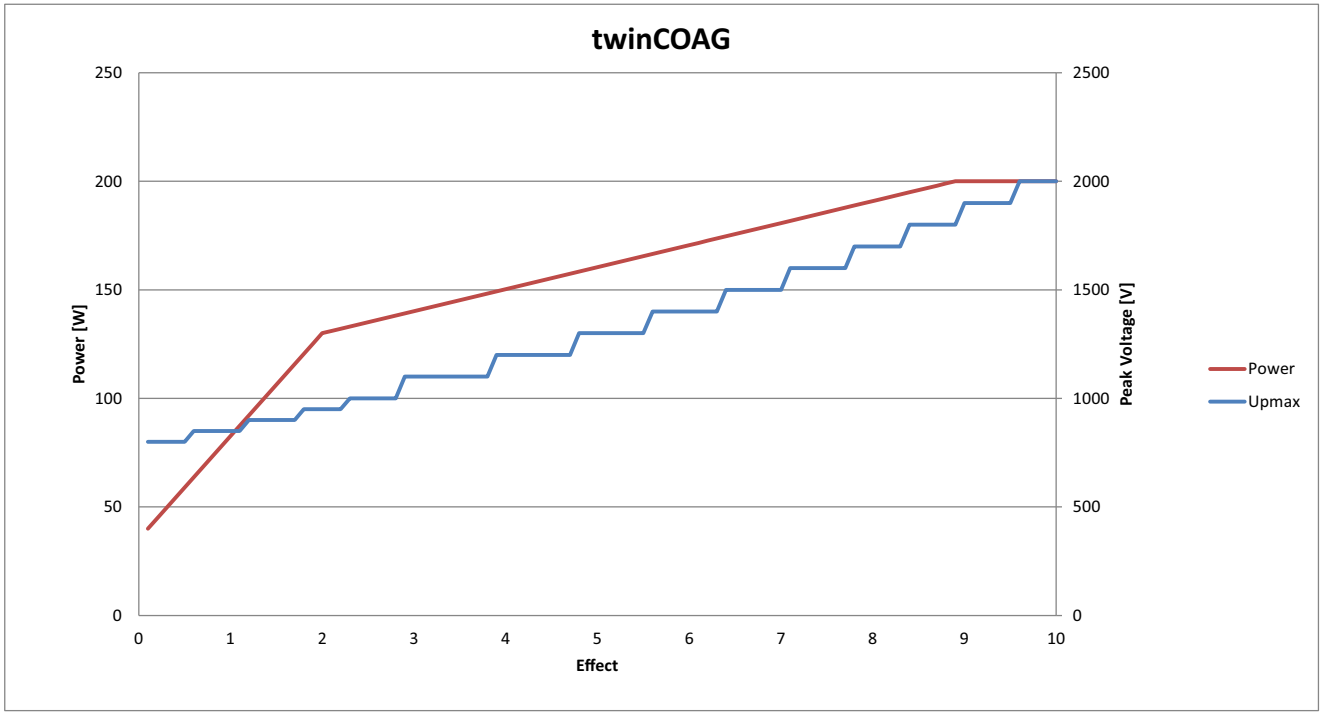


Fig. 14-16

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 15
Installation

Ambient conditions

⚠ WARNING

Ignition of anesthetics, skin cleansers, and disinfectants in potentially explosive atmospheres

If you place the unit in a potentially explosive atmosphere, anesthetics, skin cleansers, and disinfectants can ignite.

Risk of fire and explosion to the patient and medical personnel! Risk of damage to property.

⇨ Do not place the unit in potentially explosive atmospheres.

⚠ WARNING

Interference with the unit from portable and mobile HF telecommunications units (e.g. mobile phones, WLAN units)

Electromagnetic waves emitted by portable and mobile HF telecommunications units may affect the unit.

Risk of injury to patient and medical personnel.

The unit may fail or not perform properly.

⇨ When using portable and mobile HF telecommunications units, including their accessories, there must be a distance of at least 30 cm between them and the unit and its cords.

⚠ WARNING

Unsuitable temperature or level of humidity during operation

If you operate the unit at an unsuitable temperature or level of humidity, it may sustain damage, fail, or not perform properly.

Risk of injury to patient and medical personnel.

⇨ Operate the unit at a suitable temperature and level of humidity. You will find the tolerances for temperature and humidity in the Technical Data.

⇨ If other ambient conditions must be observed for operation of the unit, you will also find them in the Technical Data.

⚠ WARNING

Unsuitable temperature or humidity in transit or storage

If you transport or store the unit at an unsuitable temperature or level of humidity, it may sustain damage and fail.

Risk of injury to patient and medical personnel.

⇨ Transport and store the unit at a suitable temperature and level of humidity. You will find the tolerances for temperature and humidity in the Technical Data.

80115-501_V26386
2025-12

⇨ If other ambient conditions must be observed for transport and storage of the unit, you will also find them in the Technical Data.

NOTICE

Insufficient acclimatization time, unsuitable temperature during acclimatization

If the unit was stored or transported below or above a certain temperature, it will take a certain time and temperature to acclimatize.

If you do not observe the rules, the unit can sustain damage and fail.

⇨ Acclimatize the unit according to the rules in the Technical Data.

NOTICE

Overheating of the unit due to poor ventilation

If ventilation is poor, the unit can overheat, sustain damage, and fail.

⇨ Install the unit in such a way that there is an unobstructed circulation of air around the housing. Installation in confined wall recesses is prohibited.

⚠ WARNING

Penetration of fluid into the unit during operation or when cleaning the unit

Risk of electric shock to the medical personnel.

The unit may become damaged and fail.

⇨ Make sure no liquid can penetrate the unit.

⇨ Do not place vessels containing liquids on top of the unit.

⇨ If fluid has penetrated into the unit, take the unit out of operation immediately. You can only start using the unit again once it has been checked by a service technician.

80115-501_V26386
2025-12

Electrical installation

⚠ WARNING

Defective grounded power outlet, power supply network without proper grounding, inferior-quality power cord, incorrect line voltage, multiple power outlets, extension cords

Risk of electric shock and other injuries to the patient and medical personnel! Risk of damage to property.

⇨ Connect the unit / cart to a properly installed grounded power outlet.

⇨ Only connect the unit to a power supply network with proper grounding.

⇨ Use the compatible Erbe power cord (see the *Accessories, Compatible power cords* chapter).

⇨ Check the power cord for damage. You must not use a damaged power cord.

⇨ The supply voltage must match the voltage specified on the unit's rating plate.

⇨ Do not use multiple power outlets.

⇨ Do not use extension cords.

⚠ WARNING

Damaged unit, damaged accessories, modified unit, and modified accessories

Risk of electric shock to the patient and medical personnel!

Risk of injury to patient and medical personnel!

Risk of burns to the patient and medical personnel!

Risk of material damage.

- ⇨ Check the unit and accessories for damage before each use (e.g. footswitch, instrument cables and cart).
- ⇨ You must not use a damaged unit or damaged accessories. Replace defective accessories.
- ⇨ If the unit or cart is damaged, please contact our customer service.
- ⇨ Blown power fuses may only be replaced by a competent technician.
- ⇨ For your safety and that of the patient: Never attempt to perform repairs or make modifications yourself. Any modification will invalidate liability on the part of Erbe Elektromedizin GmbH.

⚠ WARNING

The interconnections of the VIO 3 carry HF voltage during activation.

If you touch the interconnections during activation, you can suffer burns.

- ⇨ You may only remove the cap (1) (fig. below) if you install the VIO 3 on an APC 3.
- ⇨ Keep the cap in a safe place. If you disconnect the VIO 3 from the APC 3, you must replace the cap on the interconnections.

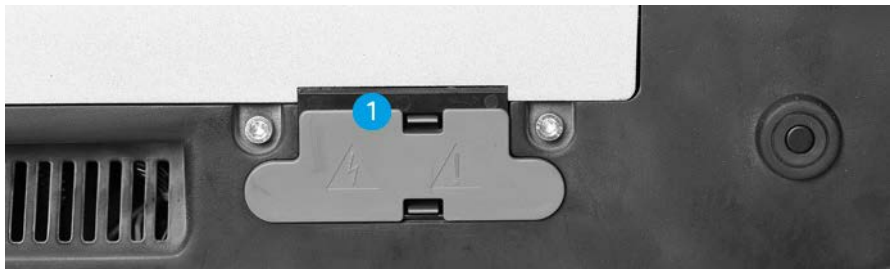


Fig. 15-1

Access to the power cord

Note: Install the unit such that the power cord could be easily disconnected from the power source.

Grounding

Note: If necessary, connect the grounding pin of the unit or the cart to the grounding system of the operating room using a grounding cable.

80115-501_V26386
2025-12

Installation of the rear of the VIO 3

Fig. 15-2

Footswitch sockets

You connect a two-pedal and a one-pedal footswitch to these sockets. The combinations of two two-pedal footswitches or two one-pedal footswitches are not possible.

ECB sockets (Erbe Communication Bus)

These sockets serve to connect other units with the VIO 3.

Grounding terminal connection

If necessary, connect the grounding pin of the unit to the grounding system of the operating room using a grounding cable.

Power connection

Open the cover. The symbol on the cover means: Notice, consult accompanying documents. In addition to the User Manual, please also consult all other documents included with the unit.

Connect the unit to a properly installed, grounded power outlet. Use the compatible Erbe power cord (see the Accessories, Compatible power cords section). If the unit is installed on an Erbe cart with auxiliary network outlet: Connect the unit to an auxiliary network outlet. Connect the unit to the mains power using the cart power cord. Follow the instructions in the user manual for the cart.

Optionally, you can connect a power cord with V lock. The unit plug locks into the power connection of the VIO 3 and cannot loosen on its own.

Power fuses

The unit is protected with power fuses. If one of these power fuses has blown, the unit may not be used on the patient again until it has been checked by a competent technician. The values of the power fuses are specified on the unit's rating plate. Only spare fuses with these values may be used.

80115-501_V26386
2025-12

Installation of the VIO 3 on an overhead suspension arm system

For the installation of the VIO 3 on an overhead suspension arm system, you require fastening set REF No. 20180-143. Installation instructions are included with the fastening set. Install the VIO 3 according to the installation instructions.

Installation of the VIO 3 on an Erbe cart

Please read the User Manual for the cart concerned. There you will find instructions on how to secure the unit to the cart.

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 16
Cleaning and disinfection

Safety Instructions

⚠ WARNING

The unit is contaminated

Risk of infection to the patient and medical personnel.

⇨ Follow the instructions for cleaning and disinfecting the unit.

⚠ WARNING

Alternate use of disinfectant solutions based on different active ingredients

The agents may affect one another. The disinfection effect of the disinfectant solution may be weakened. Risk of infection to the patient and medical personnel.

The housing plastic may become brittle and break. A color reaction may occur with plastics.

⇨ Do not use these substances alternately.

⚠ WARNING

Connection of unit / cart and power supply during cleaning and disinfection

Risk of electric shock to the medical personnel!

⇨ Switch off the unit. Unplug the power plug of the unit / cart.

⚠ WARNING

Flammable detergents and disinfectants, flammable solvents in adhesives used on the patient and on the unit / cart

Risk of fire and explosion to the patient and medical personnel! Risk of damage to property.

⇨ Use products that are not flammable.

If the use of flammable products is unavoidable, proceed as follows:

⇨ Allow the products to evaporate completely before switching on the unit.

⇨ Check whether flammable liquids have accumulated under the patient, in body recesses such as the navel, or in body cavities such as the vagina. Remove any liquids before performing electrosurgery.

80115-501_V26386
2025-12

⚠ WARNING

Penetration of fluid into the unit during operation or when cleaning the unit

Risk of electric shock to the medical personnel.

The unit may become damaged and fail.

⇨ Make sure no liquid can penetrate the unit.

⇨ Do not place vessels containing liquids on top of the unit.

⇨ If fluid has penetrated into the unit, take the unit out of operation immediately. You can only start using the unit again once it has been checked by a service technician.

Selecting a suitable cleaning and disinfection agent

The following categories of cleaning agents and disinfectants should not cause any damage to the surfaces of unit / cart when used properly:

- Alcohol-based agents
- Agents based on guanidine
- Agents based on active oxygen-based per compounds
- Agents based on peracetic acid
- Chlorine-based agent with up to 3% bleach

Frequent use of the abovementioned agents may cause harmless discoloration to surfaces.

Do not use a cleaning and disinfection agent containing the following substances:

- Sodium hydroxide, strong organic acids, and strong oxidizing agents

These substances may attack metal parts due to their corrosive effect.

- Quaternary ammonium cations, phenolic compounds (e.g., phenoxyethanol)
- Solvents and benzine

These substances cause damage to plastics.

80115-501_V26386
2025-12

Supplies

- Ready-for-use wipes with a cleaning agent or disinfectant solution.

or

- Low-lint single-use wipes moistened before cleaning or disinfection with a suitable product.

Use different wipes for cleaning and disinfecting.

Cleaning

Use only cleaning agents that comply with relevant national standards. Observe the manufacturer's specifications for the cleaning agent, particularly regarding material compatibility. If you use different products for cleaning and disinfection, the products must be compatible with each other.

1. Prepare the cleaning agent solution in a concentration specified by the manufacturer. Moisten low-lint single-use wipes with the cleaning agent solution.
2. Or use ready-for-use cleaning wipes with a cleaning agent solution.
3. Clean all visible contamination (e.g., blood) off the surfaces. Residual contamination may reduce the effectiveness of the subsequent disinfection.
4. Visually inspect all surfaces after cleaning. If you find any residual contamination, repeat cleaning until all contamination has been removed.

Note: If you cannot carry out a full clean, do not carry out a wipe disinfection. Do not use the unit or the cart. Contact Technical Service.

Disinfection

Use only disinfectants that comply with relevant national standards. Comply with the manufacturer's specifications for the disinfectant, particularly regarding material compatibility. If you use different products for cleaning and disinfection, the products must be compatible with each other.

1. Mix the disinfectant in a concentration specified by the manufacturer. Moisten low-lint single-use wipes with the disinfectant solution.
2. Or use ready-for-use disinfectant wipes with a disinfectant solution.
3. Wipe the surfaces thoroughly.
4. Ensure that the surfaces are completely wetted.
5. Leave the disinfectant to work as specified by the manufacturer (exposure time).
6. Keep the surfaces wet throughout the entire exposure time.
7. Visually inspect the surfaces for any damage after disinfection.

Note: If the surfaces are damaged, do not use the unit or the cart. Contact Technical Service.

Validated procedure for cleaning and disinfection

Cleaning Clean with mikrozid universal wipes premium, Schülke & Mayr GmbH, Norderstedt, Germany. Clean all visible contamination (e.g., blood) off the surfaces. Residual contamination may reduce the effectiveness of the subsequent disinfection.

Disinfection Disinfect with mikrozid universal wipes premium, Schülke & Mayr GmbH, Norderstedt, Germany. Leave the disinfection solution to work for one minute, making sure it is visibly wetted.

Erbe recommends this processing procedure. Other equivalent procedures are possible. The user must ensure that the procedures used are suitable by means of suitable measures (e.g., validation, routine monitoring, check of material compatibility).

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 17
Messages

A message consists of a title, a message text and a code. The VIO system displays three different types of messages:

a) Messages that prompt you to inform Technical Service, as the VIO 3 or a VIO module (e.g. APC 3) cannot be used. These messages are not listed individually in the User Manual, because the messages only differ in their code. The title and the message text are all identical: **Note:** The unit cannot be used. Please contact the service department.

b) Status messages.

c) Messages that prompt you to take action.

Messages of categories **b)** and **c)** are found in the following table. The messages are sorted alphabetically by their code.

Code	Title	Message text
EIP-A-130	**EIP irrigation pump**	The pump cover was opened during activation of the EIP irrigation pump or was opened during activation. Close the pump cover.
EIP-A-132	**EIP irrigation pump**	The maximum activation time for the EIP irrigation pump has been reached. End activation. After that, you can re-activate the EIP.
G-A-75	**High unit temperature**	The unit has overheated. Activation may only be repeated once the unit has cooled down. Please contact the service department.
I-A-30 to I-A-33	**Faulty instrument**	The instrument is faulty and cannot be used.
I-A-34	**Check connection**	Make sure that the instrument cable is correctly connected to the instrument and to the unit. If the connection is correct, then the instrument is faulty and cannot be used.
I-A-35	**Check instrument**	The connector at the selected socket may be faulty or it may have been incorrectly inserted. Remove the connector. If the problem persists, contact the service department.
I-A-36	**Monopolar socket**	The connector at the selected socket may be faulty or it may have been incorrectly inserted. Remove the connector. If the problem persists, contact the service department.

80115-501_V26386
2025-12

Code	Title	Message text
I-A-37	**Bipolar socket**	The connector at the selected socket may be faulty or it may have been incorrectly inserted. Remove the connector. If the problem persists, contact the service department.
I-A-38	**Faulty instrument**	The instrument is faulty and cannot be used.
I-A-40	**Button pressed**	A button was pressed while plugging the instrument. Insert the instrument without pressing a button. If the problem persists, replace the instrument. Otherwise, please contact the service department.
IES-A-20	**IES smoke evacuator**	The IES smoke evacuator has overheated. The module cannot be used. Please contact the service department.
IES-A-21	**IES smoke evacuator**	The IES smoke evacuator has not yet acclimatized. The module can not yet be used.
IES-A-23	**Filter cartridge used up**	Replace the filter cartridge of the IES evacuator.
IES-A-24	**High suction resistance**	Make sure that the suction hose is free from blockages. Remove the protective cap or replace the filter.
IES-A-25	**Filter cartridge not detected**	Make sure that the filter cartridge has been correctly inserted.
M-A-1	**No tissue effect**	The hand trigger has been pulled during activation. Release the hand trigger and repeat activation.
M-A-2	**No tissue effect**	Tissue contact is not sufficient for sealing. Ensure that there is sufficient tissue between the jaws of the instrument. Grip the tissue again if required.
M-A-10	**No tissue effect**	Repeat activation and quickly guide the loop towards the tissue.
M-A-11	**No tissue effect**	Ensure that saline solution is used as the irrigation solution. Activate the instrument in the saline solution. Check the cable and the connections.
M-A-20	**Excessive power**	An excessive level of power was output. Guide the instrument quickly to the tissue. If possible, switch off the QuickStart function.
M-A-30	**No tissue effect**	Place the instrument in contact with the tissue and reactivate. If the problem persists, follow these steps: Check the footswitch assignment. Check whether the instrument is connected correctly. Replace the cable. Replace the instrument.

80115-501_V26386
2025-12

Code	Title	Message text
M-A-40	**Partial dissection / sealing**	A partial dissection / sealing was detected during activation. Please activate again. If the error occurs repeatedly, clean the instrument carefully.
N-A-48	**Return electrode monitoring**	Which return electrode type have you just connected? Split return electrode Non-split return electrode Information on split and non-split return electrodes
N-A-49	**Return electrode monitoring**	Monitoring cannot detect any contact of a return electrode with the skin. If you have connected a return electrode: Check the cable for damage. Make sure that the contact strip is correctly positioned in the connecting terminal. Make sure that the plug of the return electrode cable is correctly inserted in the unit.
N-A-50	**Return electrode monitoring**	Which return electrode type have you just connected? Split return electrode Non-split return electrode Information on split and non-split return electrodes
N-A-51	**Return electrode monitoring**	Check return electrode! The skin contact of the return electrode is not sufficient. Make sure that the complete surface of the return electrode is fully attached without any creases. The skin beneath the return electrode must be dry, and free of oil and hair. Check the cable for damage. More information is provided in the User manual.
N-A-52	**Return electrode monitoring**	Check the alignment of the return electrode! The current is not distributed evenly over the surface of the return electrode. Make sure that the long side of the return electrode faces towards the operating field. Make sure that the complete surface of the return electrode is fully attached without any creases. Check whether the return electrode supports NESSY symmetry monitoring.

80115-501_V26386
2025-12

Code	Title	Message text
N-A-53	**Return electrode monitoring**	Check connection! Very low electrical resistance. Check the cable for damage. Make sure that a split return electrode is connected.
N-A-54	**Return electrode monitoring**	The connection between the return electrode and the unit is faulty. Check the cable for damage.
N-A-55	**Return electrode monitoring**	Which return electrode type have you just connected? Split return electrode Non-split return electrode Information on split and non-split return electrodes
N-A-190	**Return electrode monitoring**	Check the alignment of the return electrode! The current is not distributed evenly over the surface of the return electrode. Make sure that the long side of the return electrode faces towards the operating field. Make sure that the complete surface of the return electrode is fully attached without any creases. Check whether the return electrode supports NESSY symmetry monitoring.
N-A-191 and N-A-192	**Return electrode monitoring**	A higher temperature is possible under the return electrode! Activate for as brief a period as possible. Reduce the effect setting if the situation permits.
S-A-18	**High power output**	High output power was registered over a long period. Strong heat was applied to internal components. Activation may only be repeated once the unit has cooled down.
S-A-19	**Maximum activation time**	The maximum activation time has been reached. You can adjust the duration in the "Protected Settings".
S-A-21	**High unit temperature**	The unit has overheated. Activation may only be repeated once the unit has cooled down.
S-A-22	**Incompatible module**	An incompatible module was connected to the system. Disconnect this module from the system or contact the service department.
S-A-23	**Incompatible module**	An incompatible module was connected to the system. Disconnect this module from the system or contact the service department.

80115-501_V26386
2025-12

Code	Title	Message text
S-A-24	**Contact detected**	You have assigned AUTO START to an instrument. The unit has already detected contact with this instrument. Do not touch any tissue during assignment. If there is no contact, check the cable and the instrument for damage.
S-A-29 and S-A-30	**Disconnect the footswitch**	You have connected two identical footswitches. It is only possible to connect one two pedal footswitch and one one pedal footswitch in each case. First disconnect both footswitches from the unit.
S-A-31	**Internal module**	A modification to the internal module configuration has been detected. Check whether all configured modules in the system have been correctly detected. Confirm correct configuration at the service level.
S-A-40	**Pedal pressed**	A pedal on the two-pedal footswitch was pressed during startup. Do not press any pedal. If the error persists, replace the footswitch.
S-A-41	**Pedal pressed**	A pedal on the one-pedal footswitch was pressed during startup. Do not press any pedal. If the error persists, replace the footswitch.
S-A-129	**High unit temperature**	The unit has heated up considerably. Activate for as brief a period as possible. Reduce the effect setting if the situation permits. If the temperature continues to rise, you may no longer be able to use the unit.
S-A-130	**Incompatible instrument**	An incompatible instrument was connected to the system. Disconnect this instrument from the system or contact the service department.
S-A-149	**Two pedals pressed**	You have pressed both pedals of the two-pedal footswitch at the same time. Release the pedals. If the error persists, replace the footswitch.
S-A-150	**Check date / time**	The date and time may not have been set correctly. Check the settings in the menu.
S-A-154	**Footswitch not assigned**	You have activated a footswitch that is not assigned to an instrument.
S-A-155	**No mode set**	You have attempted to activate an instrument for which no mode has been set. Select a mode and an effect.
S-A-156	**End activation**	Interrupt activation and grip the tissue again.

80115-501_V26386
2025-12

Code	Title	Message text
S-A-157	**Instrument not connected**	You have activated a footswitch that is assigned to an instrument. However, the instrument is not connected to the unit. Connect the instrument to a socket.
S-A-166	**APC 3 argon plasma module**	The argon plasma module APC 3 is not ready for operation. Open the valve of the argon gas bottle. Ensure that the gas hose and the sensor cable of the pressure regulator are connected at the rear of the APC 3 argon plasma module.
S-A-198	**Irrigation pump detected**	The EIP irrigation pump was detected by the system and can be used.
S-A-199	**Irrigation pump disconnected**	The EIP irrigation pump was disconnected from the system.
S-A-200	**Smoke evacuator detected**	The IES smoke evacuator was detected by the system and can be used.
S-A-201	**Smoke evacuator disconnected**	The IES smoke evacuator was disconnected from the system.
U-A-7	**Line voltage too low**	Please contact the service department if the error continues to occur.
U-A-132	**Program memory full**	The maximum number of programs has been reached. Delete programs that you no longer need in order to save new ones.
U-A-133	**Remote control detected**	VIO 3 is connected with a remote control. Unit settings can be modified using this remote control.
U-A-134	**Remote control disconnected**	VIO 3 was disconnected from the remote control.
U-A-135	**Modification not possible**	No other mode can be selected for this instrument.
U-A-136	**Data transfer active**	Data is being transferred to the VIO 3. The unit cannot be used at this time.
U-A-137	**Safety check**	The regular safety check is due. Please contact the service department.
U-A-138	**Assign activation type**	The newly-connected instrument cannot be activated. Assign either the footswitch or AUTO START to the instrument.
W-A-128	**System Integration**	The connection to the connected system has been interrupted. You may continue to use the VIO 3.
W-A-129	**System Integration**	The connection to the connected system has been restored. Control of the VIO 3 on connected system is possible again.

80115-501_V26386
2025-12

Chapter 18
General Technical Data

Power connection	
Rated supply voltage	100 – 120 VAC (±10%) / 220 – 240 VAC (±10%)
Rated supply frequency	50 Hz / 60 Hz
Line current (averaged)	max. 6.3 A / 2.5 A
Power input in standby mode	< 30 watts
Power input with max. HF output	550 watts
Max. pulse power consumption	1600 watts
Terminal for grounding (potential equalization)	yes
Power fuses	T 6.3 A H / 250 V

Operating mode	
Intermittent operation	25% activation time (e.g. activated for 10 sec. / deactivated for 30 sec.)

80115-501_V26386
2025-12

WiFi	
WiFi	yes (can be activated for service purposes; always deactivated for the intended use of the unit)
Type	WLAN radio transmission: IEEE 802.11 b/g
Frequency	802.11 b/g: 2412-2462 MHz
Channels	1 - 11
Maximum output power	WLAN 20 dBm
Modulation types	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g: OFDM (BPSK, QPSK, 16QAM, 64QAM)
Available data rates	802.11b: 1, 2, 5.5, 11 Mbit/s 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbit/s

Ethernet	
Ethernet	optional (deactivated as standard)

Dimensions and weight	
Width x height x depth	415 x 215 x 375 mm
Weight	12 kg
Display size	10.4 inch

Ambient conditions for transport and storage of unit	
Temperature	-30°C to +70°C
Relative humidity	10% – 90%

Ambient conditions for operation of unit	
Temperature	+10 °C to +40 °C
Relative humidity	15% – 80%, non-condensing
Air pressure	54 kPa – 106 kPa
Maximum operating altitude	5000 m above sea level

Acclimatizing
If the unit has been stored or transported at temperatures below +10 °C or above +40 °C, the unit will require approx. 3 hours to acclimatize at room temperature.

Standards	
Classification according to EC Directive 93/42/EEC	II b
Classification according to Regulation (EU) 2017/745	II b
Protection class as per EN 60 601-1	I
Type as per EN 60 601-1	Defibrillation-proof type CF applied part

80115-501_V26386
2025-12

Chapter 19
Notes on electromagnetic compatibility (EMC)

Where EMC is concerned, medical electrical units are subject to special safety measures and must be installed and commissioned according to the EMC notes stated herein.

Guidelines for avoiding, recognizing and rectifying unwanted electromagnetic effects on other units or systems, which are the result of operating the VIO system.

When VIO electrosurgical units are activated, disturbance of other units or systems in the immediate vicinity can occur. This can be recognized as, for example, image artifacts in imaging units or unusual fluctuations in measured value displays.

Such disturbances from an activated electrosurgical unit can be reduced by placing it further away and/or carrying out suitable shielding measures on the equipment or system experiencing disturbance.

When the VIO electrosurgical unit is in the non-activated state, interference with other units in the immediate vicinity does not occur.

80115-501_V26386
2025-12

⚠ WARNING

Use of non-approved EMC-relevant accessories

This can result in the increased emission of electromagnetic interference or reduce the electromagnetic immunity of the unit.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Only use cable that is specified in the table *"EMC-relevant accessories"*, see chapter *"Notes on electromagnetic compatibility (EMC)"*.

⇨ If you are using accessories from other manufacturers, check whether the Erbe unit is interfering with other units or being affected by interference itself. You cannot use the unit if there is any interference.

⚠ WARNING

Interference with electronic units due to the electrosurgical unit

The activated electrosurgical unit can affect the performance of electronic units by causing interference.

Risk of injury to patient and medical personnel.

The units may fail or not perform properly.

⇨ Position the electrosurgical unit, the cords of the instruments, and the cord of the neutral electrode as far away as possible from electronic units.

⇨ Position the cords as far away as possible from the cords of electronic units.

⚠ WARNING

Stacked units

If you place the unit next to or stack it with other units, the units may affect each other.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Place the unit where possible only near Erbe units or stack the unit where possible only on Erbe units.

⇨ If it is necessary to operate the unit near or stacked together with units from other manufacturers, keep as much distance as possible between the units. Check whether the units are affecting each other: Are the units behaving unusually? Are faults occurring? If yes, increase the distance between the units.

⚠ WARNING

Interference with the unit from portable and mobile HF telecommunications units (e.g. mobile phones, WLAN units)

Electromagnetic waves emitted by portable and mobile HF telecommunications units may affect the unit.

Risk of injury to patient and medical personnel.

The unit may fail or not perform properly.

⇨ When using portable and mobile HF telecommunications units, including their accessories, there must be a distance of at least 30 cm between them and the unit and its cords.

⚠ WARNING

Use of non-approved internal cables by Technical Service

This can result in the increased emission of electromagnetic waves or reduce the immunity of the unit.

Risk of injury to patient and medical personnel.

Units may fail or not function properly.

⇨ Technical Service may only use the internal cables that are listed in the service manual for the unit.

80115-501_V26386
2025-12

Guidance and manufacturer's declaration - electromagnetic emissions

The unit is intended for use in the electromagnetic environment specified below. The customer or the user of the unit should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
HF emissions CISPR 11	Group 1	In stand-by operation, the unit uses HF energy only for its internal function.
	Group 2	In the active state, the unit emits HF energy to the patient.
HF emissions CISPR 11	Class A	The properties of this unit in terms of its emissions mean it can only be used in medical facilities that are connected to supply systems specifically provided for that purpose (usually supplied via isolating transformers). For domestic use (for which class B is usually required as per CISPR 11), this unit may not offer adequate protection against radio services. The user may need to take corrective measures such as relocating or reorienting the unit.
HF emissions CISPR 32	Class A	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration - electromagnetic immunity

The unit is intended for use in the electromagnetic environment specified below. The customer or the user of the unit should ensure that it is used in such an environment.

Immunity test	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidance
Discharge of static electricity (ESD) in accordance with IEC 61000-4-2	±8 kV contact discharge ±15 kV air discharge	±8 kV contact discharge ±15 kV air discharge	The floor should be made from wood or concrete or be covered with ceramic tiles. If the floor is covered with non-conductive synthetic material, the relative humidity must be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short-term interruptions and voltage fluctuations on power supply input lines as per IEC 61000-4-11	0% U_T for 0.5 cycle, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees 0% U_T for 1 cycle, single-phase at 0 degrees 70% U_T for 25/30 cycles, single-phase at 0 degrees	0% U_T for 0.5 cycle, at 0, 45, 90, 135, 180, 225, 270 and 315 degrees 0% U_T for 1 cycle, single-phase at 0 degrees 70% U_T for 25/30 cycles, single-phase at 0 degrees	Mains power quality should be that of a typical commercial or hospital environment. If the user of the unit requires continued operation during power mains interruptions, it is recommended that the unit be powered from an uninterruptible power supply or a battery.
Voltage monitoring as per IEC 61000-4-11	0% U_T for 250/300 cycles (50/60 Hz)	0% U_T for 250/300 cycles (50/60 Hz)	

80115-501_V26386
2025-12

Guidance and manufacturer's declaration - electromagnetic immunity			
Power frequency (50/60 Hz) magnetic field as per IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Proximity magnetic fields as per IEC 61000-4-39	Test frequency 134.2 kHz Pulse modulation 2.1 kHz Test level 65 A/m Test frequency 13.56 MHz Pulse modulation 50 kHz Test level 7.5 A/m	Test frequency 134.2 kHz Pulse modulation 2.1 kHz Test level 65 A/m Test frequency 13.56 MHz Pulse modulation 50 kHz Test level 7.5 A/m	The strength of alternating magnetic fields should not exceed levels characteristic in a typical commercial or hospital environment.
Note: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity			
The unit is intended for use in the electromagnetic environment specified below. The user of the unit should ensure that it is used in such an environment.			
Immunity test	**IEC 60601-1-2 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted HF disturbances as per IEC 61000-4-6	3 V_{eff} 150 kHz to 80 MHz	3 V_{eff} 150 kHz to 80 MHz	The field strengths of fixed transmitters, as determined by an electromagnetic site survey should be below the compliance level in each frequency range. [b] Interference may occur in the vicinity of units marked with the following symbol. 
	6 V_{eff}[a] in ISM frequency bands 150 kHz to 80 MHz	6 V_{eff}[a] in ISM frequency bands 150 kHz to 80 MHz	
Radiated high-frequency electromagnetic fields as per IEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m 80 MHz to 2.7 GHz	
Note: These guidelines may not apply in all cases. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

a)
The ISM bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz, 13.553 MHz to 13.567 MHz, 26.957 MHz to 27.283 MHz and 40.66 MHz to 40.7 MHz.

b)
The field strengths of fixed transmitters, such as base stations for radio (cellular/cordless) telephones and terrestrial radio units, amateur radio stations, AM and FM radio and TV channels cannot be predicted theoretically with accuracy. To assess the electromagnetic environment with regard to fixed transmitters, a site inspection should be considered. If the field strength measured at the site where the unit is used exceeds the abovementioned compliance level, the unit must be monitored to ensure it is functioning properly. In the event of any unusual operating behavior, additional measures may be required, such as changing the orientation or location of the unit.

80115-501_V26386
2025-12

Electromagnetic immunity against high-frequency wireless communication units as per IEC 61000-4-3			
Frequency band (MHz)	**Test frequency (MHz)**	**Modulation**	**Compliance level (V/m)**
380 - 390	385	Pulse [a] (18 Hz)	27
430 - 470	450	FM ± 5 kHz deviation or pulse [a] (18 Hz)	28
704 - 778	710, 745, 780	Pulse [a] (217 Hz)	9
800 - 960	810, 870, 930	Pulse [a] (18 Hz)	28
1700 - 1990	1720, 1845, 1970	Pulse [a] (217 Hz)	28
2400 - 2570	2450	Pulse [a] (217 Hz)	28
5100 - 5800	5240, 5500, 5785	Pulse [a] (217 Hz)	9

Note: A **minimum safety distance of 30 cm** should be maintained between the unit and portable HF telecommunications units that transmits in the stated frequency band. This includes mobile phones, WLAN and RFID, and Bluetooth units. Failure to comply may lead to a reduction in the unit's performance features.

Interference may occur in the vicinity of units marked with the following symbol.

a) The pulse modulation is defined as a square-wave signal with a 50% duty factor.

The cables / cords used on the unit must not exceed the lengths specified below.

80115-501_V26386
2025-12

EMC-relevant accessories [a]	
Name	**Maximum cable length**
Power cord	5 m
Grounding cable (POAG)	10 m
Footswitch cable	5 m
Monopolar connecting cable	6 m [b]
Bipolar connecting cable	5 m [b]
Multifunction cable	4 m [b]
Neutral electrode cable	5 m [b]

a) EMC-relevant accessories refers to the cable specified. The cable can affect the unit's electromagnetic interference or the electromagnetic immunity of the unit.

b) When connecting Erbe instruments and neutral electrodes, the overall cord length increases by max. 0.5 m.

Operating environment

For the intended use, the unit may only be operated in premises used for medical purposes.

The unit may be operated in the vicinity of an electrosurgical unit. The safety instructions for the unit and the electrosurgical unit must be observed. Please read the safety instructions on the following subjects in particular:

- distance between the unit and the electrosurgical unit. In this User Manual, refer to the safety instruction *Stacked units*.

- Distances between the unit and the electrosurgical unit’s cords.
- Distances between the unit's cords and the electrosurgical unit’s cords.

Position the units and cords so that they are as far apart as possible.

Essential performance characteristics

The unit does not have any essential performance features within the meaning of IEC 60601-2-2.

80115-501_V26386
2025-12

Chapter 20
WiFi explanations

Explanation on compliance with FCC Rules

Applies for the USA and all countries oriented toward FCC certification.

This unit is compliant with the RSS radio standard from Industry Canada for license exempt units, as well as Part 15 FCC Rules. Operation is subject to the following two conditions: (1) The unit must not cause any interference and (2) the unit must accept all interference, even interference that could cause undesired operation. Changes or modifications not expressly approved by the parties responsible for compliance could void the user's authority to operate the unit.

FCC ID:2AGEM-VIO3

Explanation on compliance with IC Rules

Applies for Canada.

This unit is compliant with the CNR regulations from Industry Canada applicable for license exempt units. Operation is subject to the following two conditions: (1) The unit must not cause any interference and (2) the unit must accept all radio frequency interference, even interference that could impair operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC:20687-VIO3

Explanation on compliance with IDA Rules

Applies for Singapore.

Complies with
IDA Standards
DA107491

Explanation on compliance with KC Rules

Applies for South Korea.

Applicant: Erbe Medical Korea Ltd.

You can find more information in other sections of this document and on the product labels.

80115-501_V26386
2025-12

R-C-Emk-10160-000

Information for the user: This unit was tested for its suitability for use in a commercial environment and may cause radio interference when used in a domestic environment.

80115-501_V26386
2025-12

Chapter 21
Maintenance, Customer Service, Warranty, Disposal

Maintenance

Modifications and repairs

Modifications and repairs must not impair the safety of the unit or cart and accessories for the patient, user and the environment. This condition is met when changes to the structural and functional characteristics are not detrimental to safety.

Authorized persons

Modifications and repairs may only be undertaken by Erbe or by persons expressly authorized by Erbe. Erbe accepts no liability if modifications and repairs to the unit or accessories are made by unauthorized persons. This will also invalidate the warranty.

Technical safety checks

The technical safety checks determine whether the safety and operational readiness of the unit or the cart and accessories conform to a defined technical required status. Technical safety checks must be performed at least once a year.

What technical safety checks must be performed?

For this unit the following technical safety checks have been stipulated:

- Checking of labels and User Manual
- Visual inspection of unit and accessories for damage
- Testing the grounded conductor as per IEC 62353
- Leakage current testing as per IEC 62353
- Measurement of DC resistance
- Functional testing of all the unit's operating and control elements
- Testing footswitch and fingerswitch activation
- Testing instrument and connector detection
- Testing the automatic start mode
- Testing the monitoring circuits (monitoring equipment)
- Measurement of the HF peak voltage for sinusoidal and modulated modes
- Measurement of the output power in the CUT and COAG operating modes

The results of the technical safety checks must be documented.

If during the technical safety checks any defects are found which might endanger patients, staff or third parties, the unit may not be operated until the defects have been remedied by competent service technicians.

Customer service

If you are interested in a maintenance contract, please contact Erbe Elektromedizin in Germany, or your local contact in other countries. This may be an Erbe subsidiary, an Erbe representative or a distributor.

80115-501_V26386
2025-12

Warranty

The General Terms and Conditions or the conditions of the purchase contract apply.

Disposal

Your product bears a crossed-out garbage can icon (see picture). Meaning: In all EU countries this product must be disposed of separately in accordance with the national laws implementing EU Directive 2012/19/EU of 07/04/2012, WEEE.

In non-EU countries the local regulations must be observed.

If you have any questions about disposal of the product, please contact Erbe Elektromedizin or your local distributor.

80115-501_V26386
2025-12

Chapter 22
Using the Erbe Support App for VIO 3 and Subsystems

The Support App enables its users, among other things, to access information on the VIO 3 (e.g. settings, chrono files), to contact Erbe Support easily, to customize settings, to download and use public settings profiles, to transfer settings profiles and to benefit from an improved and more efficient service from Erbe overall.

The Support App is also used by Erbe employees and sales partners and your unit data is stored by Erbe for the purposes of internal evaluation.

Data that is named at the user's discretion, e.g. copy user sets or program names, should be named by the user in such a way that no personal data is included in the names. Erbe reserves the right to change these names.

The user grants Erbe the free, irrevocable, non-exclusive, transferable and sublicensable right, without temporal, geographical and content-related restrictions, to use content created by the user for its own purposes, to make such content accessible to selected persons or the general public and – if required – to store, duplicate, edit and use it, in particular for the purposes of developing, improving and selling Erbe products.

80115-501_V26386
2025-12

80115-501_V26386
2025-12

Chapter 23
System Integration

This feature is not available in Korea.

Connecting a VIO 3 to an External System

Fig. 23-1

If you have a VIO 3 with a system integration module, the unit has an Ethernet socket on the back.

Ethernet socket

The Ethernet socket is used to connect the VIO 3 with a compatible external system using an Ethernet cable. More information about compatible systems and how to configure the VIO 3 to make the connection can be found in the configuration instructions of this user manual.

80115-501_V26386
2025-12

Connection Statuses between a VIO 3 and an External System

If you have a VIO 3 with a system integration module, the following statuses are displayed in the menu button on the VIO 3's main screen:

Fig. 23-2

- The VIO 3 is connected to an external system and can be controlled via remote control.

Fig. 23-3

- The VIO 3 is connected to an external system and cannot be controlled via remote control.

Fig. 23-4

- The VIO 3 is not connected to an external system and cannot be controlled via remote control.

You will also find the same symbols in the "Menu" screen.

80115-501_V26386
2025-12

Chapter 24
CONFIGURATION INSTRUCTIONS Network integration IEC 80001-1

This feature is not available in Korea.

About these Instructions

This document is provided by Erbe Elektromedizin GmbH in order to provide the responsible department/hospital with the necessary information according to IEC 80001-1 for the network integration of the Erbe VIO 3 in compatible therapeutic OP and imaging systems.

This document has been compiled on the basis of current knowledge about IT networks and is subject to change since the state of the art in this area changes and develops. As the environmental conditions, installations, and operation of the network into which the VIO 3 can be integrated fall within the area of responsibility of the operator, Erbe cannot guarantee fault-free operation. The responsible department/hospital must ensure the protection, security, and reliability of the IT network through their own risk management process according to IEC 80001-1.

80115-501_V26386
2025-12

Hazardous Situations during Integration into a Network

If an IT network does not provide the properties/performance characteristics that are described for the integration of a VIO 3, the following hazardous situations may arise.

Risks related to cyber events

The VIO 3 can only be accessed via the connected OP system. The connection between the VIO 3 and the OP system takes place within the protected OP network.

At no point does the VIO 3 does have a direct connection to the hospital's IT network.

Risks related to incompatible software

A changed or incompatible update package is identified during the update process. If the integrity check is not passed, an error is displayed on the user interface of the VIO 3. The VIO 3 can then not be used.

Risks related to a loss of connection

If the remote connection with the OP system is interrupted, e.g. due to interference, the VIO 3 can still be controlled and used with its full range of functions from the VIO 3 unit.

Risks for personal data

The VIO 3 does not contain any personal data.

Management of other risks

Note: The integration of the VIO 3 into a network that includes units other than those validated by Erbe can lead to risks for the patient, operator, or third party that were not previously known.

The responsible organization should identify, analyze, and manage these risks, including the risks resulting from changes to a network of this type. Changes to networks include the following:

- Changes to the network configuration
- Connection of additional elements to the network
- Removal of elements from the network
- Updates (new software version) to units that are connected to the network
- Upgrades (addition of new functions) to units that are connected to the network

Specifications and Requirements

Purpose of the network integration of the VIO 3

The VIO 3 can be operated with compatible therapeutic OP and imaging systems (referred to as "OP systems") for the following purposes:

- Sending of screen data (remote connection)
- Receipt of touch commands (remote connection)

The communication between the VIO 3 and the OP system takes place via a physical Ethernet (LAN) interface.

Compatibility and interoperability

The VIO 3 can be operated with the following OP systems:

Electrosurgical unit	OP system
Erbe VIO 3 (from V 1.2.x)	Maquet Tegris (V 5.2)
Erbe VIO 3 (from V 1.3.4)	KARL STORZ OR1 (SCB V3.0)

The VIO 3 is not intended for use with OP systems other than the ones specified here.

A system integration test is carried out with the VIO 3 and the relevant OP system mentioned above to verify interoperability.

80115-501_V26386
2025-12

Interface specifications

Interface	Specification
Type	Ethernet RJ45, 8-pin
Data rate	100/1000 Mbit/s
Port	22
Protocols	VNC

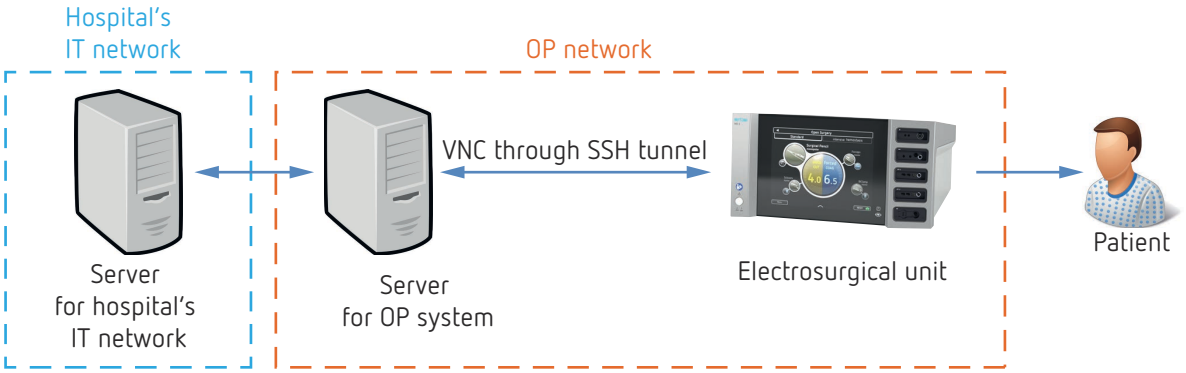
Network requirements for the OP system

When installing the Ethernet cable, the operator must ensure immunity against interference. We recommend using an Ethernet cable of at least type CAT 5 FTP to ensure electromagnetic immunity.

The transmission rate of the OP system network should be at least 100 Mbit/s.

Hospital IT network and VIO 3

The VIO 3 does not have a direct connection to the hospital's IT network.



Connection and Configuration

Accessories and software versions

You will need the following to connect the VIO 3 to an OP system:

- 1 Ethernet cable (at least CAT 5 FTP)
- The IP address/IP address range under which the VIO 3 is logged in to the OP system. Find out the IP address from the manufacturer of the OP system or their service department, or the hospital's medical technology department.

You should also ensure that both the VIO 3 and the OP system have the correct software version. Please read the Compatibility and Interoperability page for this.

80115-501_V26386
2025-12

Step-by-step instructions

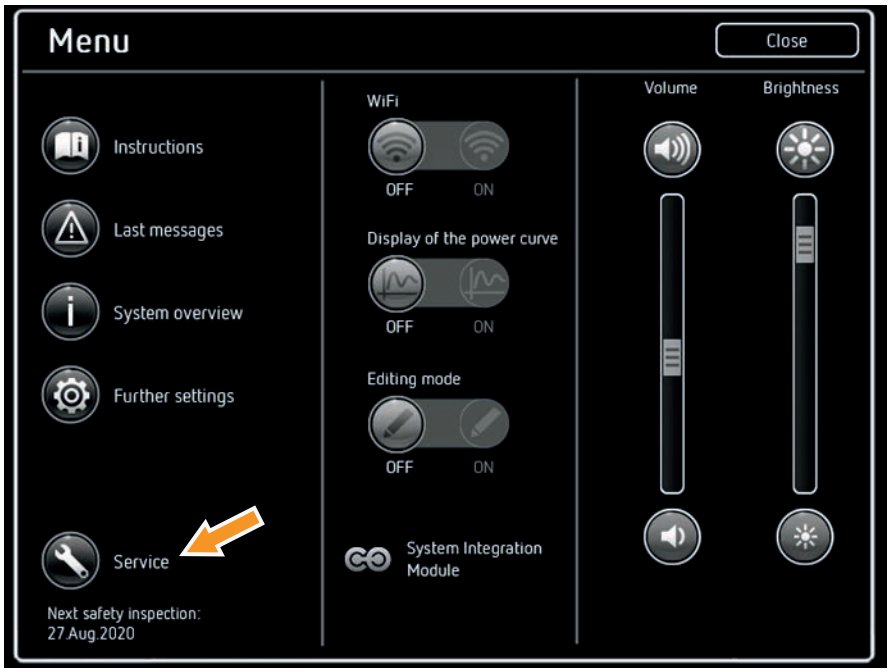
Step 1

Switch on the VIO 3 and the OP system.

Step 2

Connect the VIO 3 and the OP system using the Ethernet cable. The VIO 3 has an Ethernet socket on the back of the unit. It is marked with a .

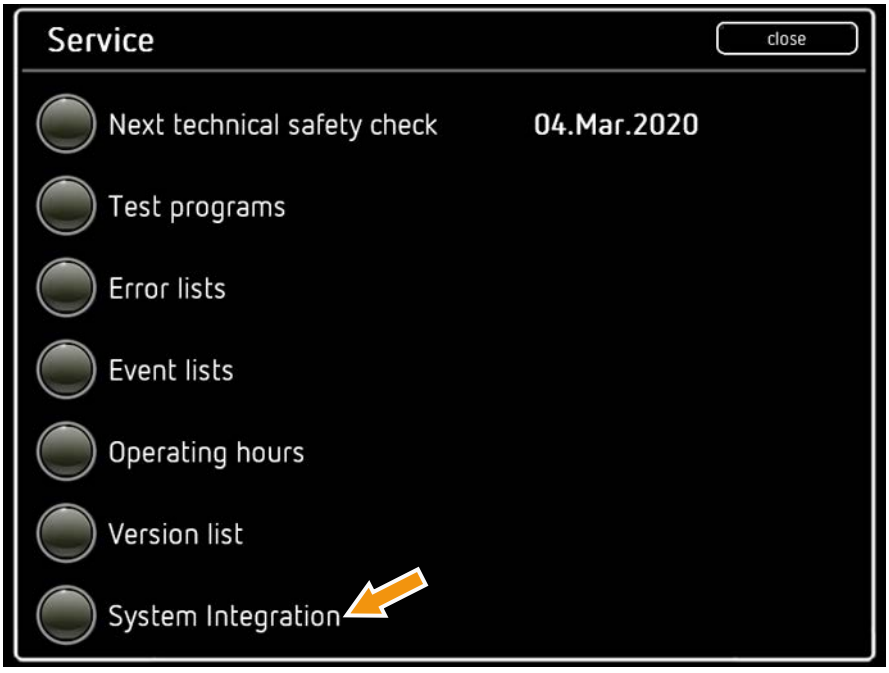
Step 3



On the VIO 3: Call up the service menu. To do so:

1. Call up the "Menu" screen.
2. Call up <Service>.
3. Enter the password **VIO3** and confirm with <Entry>. The unit shows all service settings.

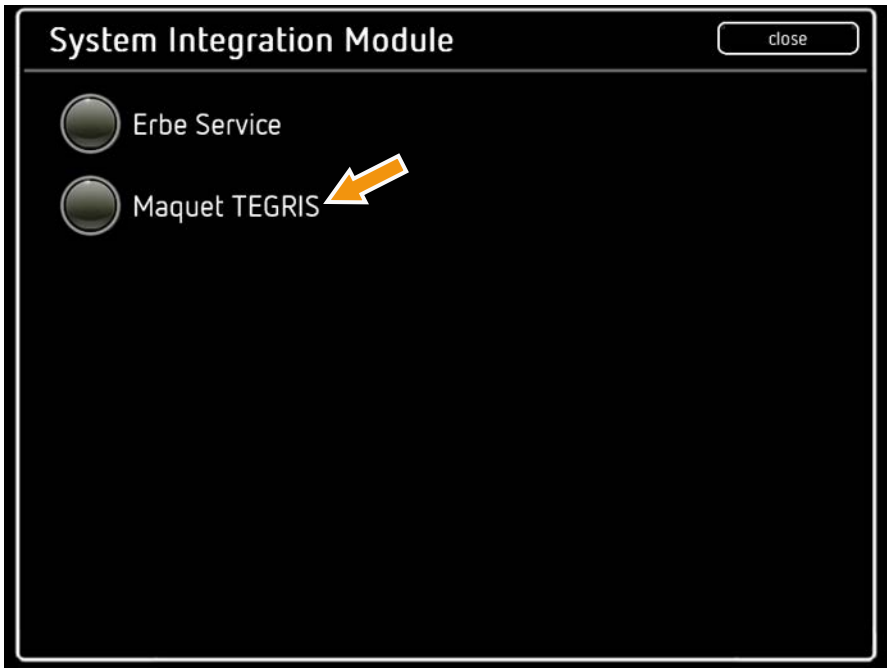
Step 4



On the VIO 3: Select the service setting <System Integration>.

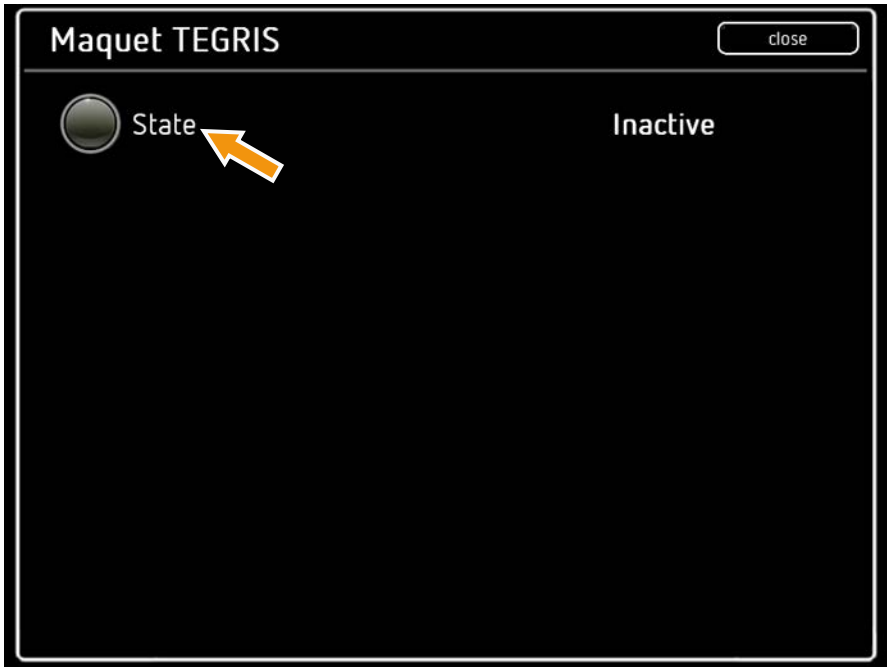
80115-501_V26386
2025-12

Step 5



On the VIO 3: Select the desired OP system (Maquet TEGRIS in the example image above).

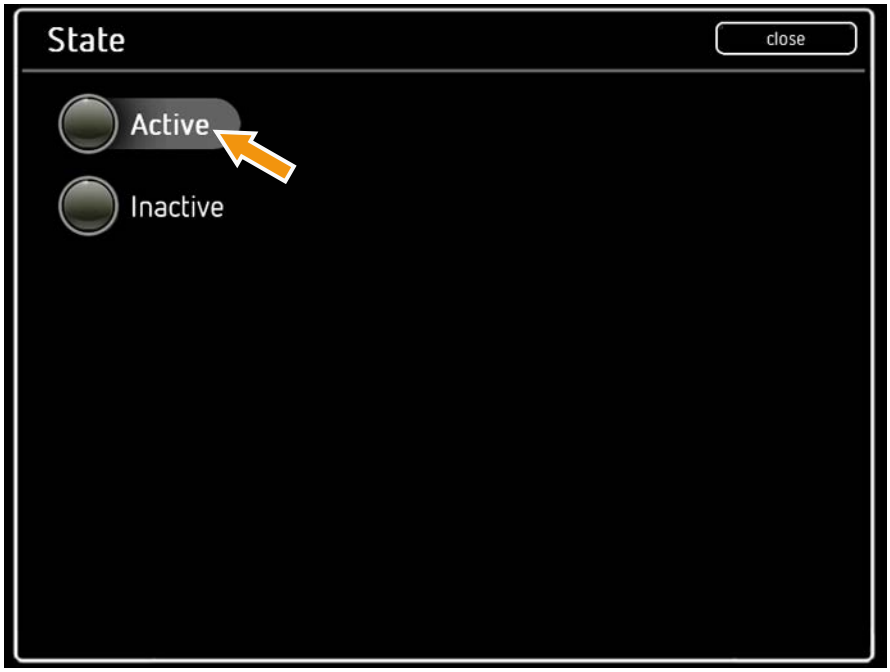
Step 6



On the VIO 3: Select the setting <State>.

80115-501_V26386
2025-12

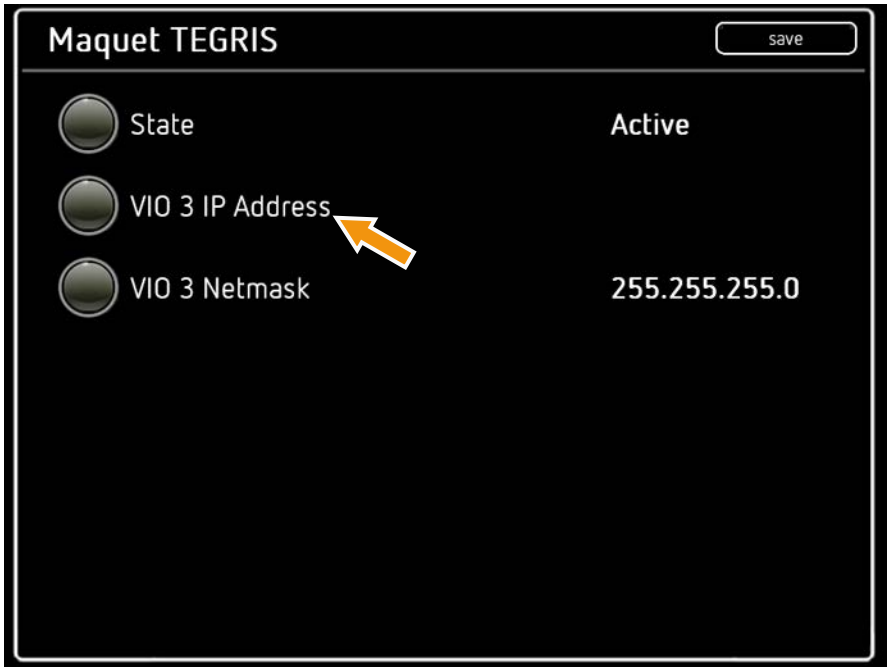
Step 7



On the VIO 3:

1. Select the setting <Active>.
2. Use the <Close> button to leave the state window.

Step 8

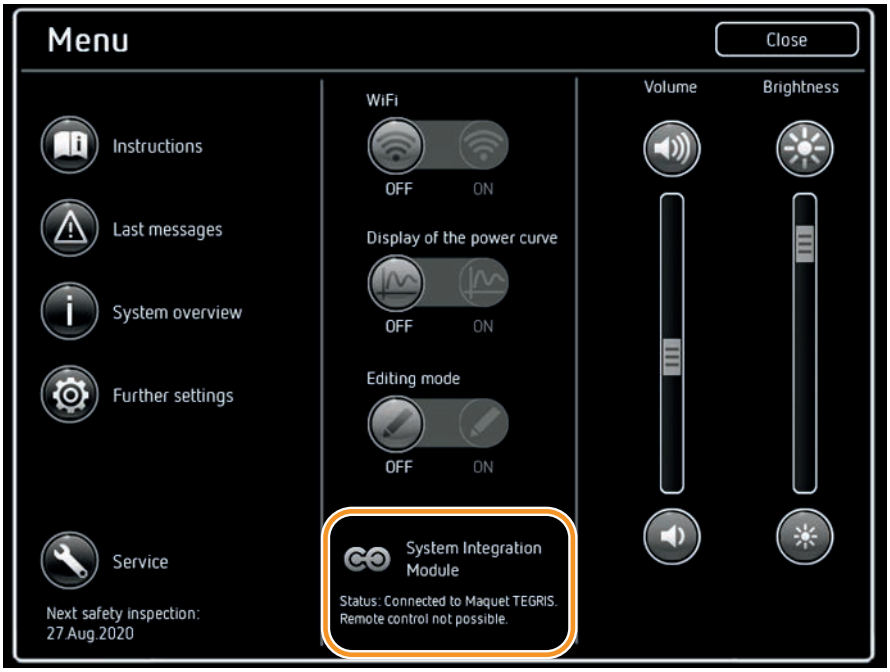


On the VIO 3: Enter the VIO 3 IP address in the OP system window (Maquet TEGRIS in the image above). To do so:

1. Select the setting <VIO 3 IP Address>. A keyboard is displayed.
2. Input the IP address required by the OP system and confirm by clicking <save>. (The VIO 3 IP address is provided by the manufacturer of the OP system or the hospital's medical technology department).

80115-501_V26386
2025-12

Step 9

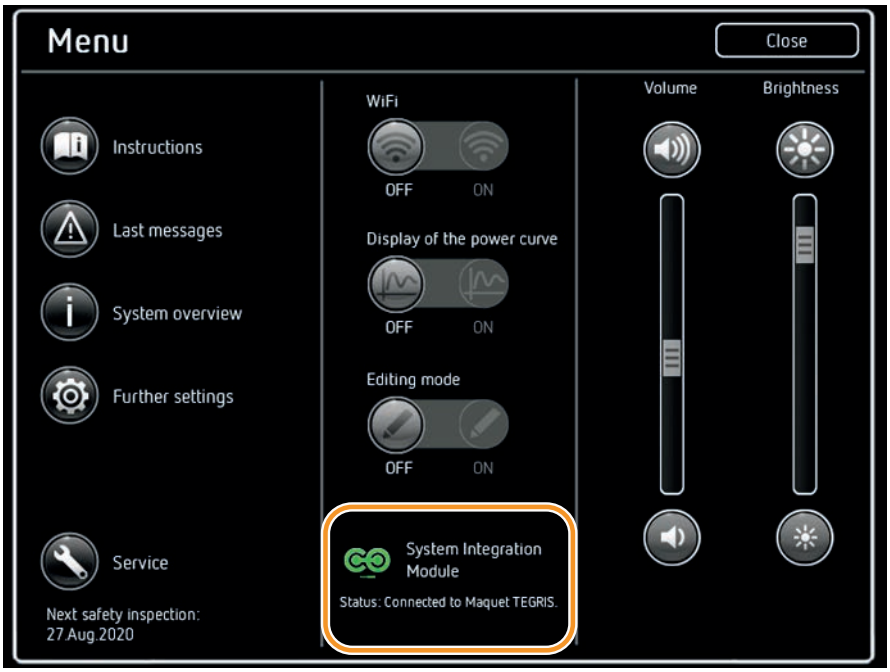


On the VIO 3: Check the connection setting in the menu. When the symbol + text displayed above are shown, the VIO 3 is configured ready to start connecting to the OP system.

Step 10

On the OP system (no image): Initiate a remote connection (=remote control) with the VIO 3. If necessary, contact the manufacturer of the OP system or their service technician to help you do this.

Step 11



On the VIO 3: Check the connection setting in the menu. When the symbol + text displayed above are shown, the VIO 3 is integrated in the OP system and can be operated remotely (=remote control).

80115-501_V26386
2025-12

Troubleshooting: Different VIO 3 connection statuses and their meaning

The VIO 3 has a total of 3 connection statuses with one OP system.

These are indicated using individual symbol + text combinations and can be viewed in the screen menu and in the system overview (under <System Integration Module, more>).

Symbol	Ethernet connection available and VIO 3 IP address recognized	Remote connection (=remote control) available	Text and other measures through to completed OR integration
	no	no	Status: Not connected to the OP system. Remote control not possible. Check Ethernet connection, check Ethernet cable.
	yes	no	Status: Connected to the OP system. Remote control not possible. Check the VIO 3 IP address. (The VIO 3 IP address is provided by the manufacturer of the OP system). Initiate the remote connection (=remote control) with the VIO 3 at the OP system. If necessary, contact the manufacturer of the OP system or their service department.
	yes	yes	Status: Connected to the OP system. The VIO 3 is integrated into the OP system and can be operated remotely (=remote control).

80115-501_V26386
2025-12

Chapter 25
Symbols

Individual details of the symbols in this chapter may deviate from your product. Not all symbols may necessarily appear on your unit or its packaging.

Symbol	Explanation
	Caution: Before switching the unit on or performing another action related to the unit, read the safety instructions in the User Manual.
	Consult instructions for use
	Catalogue number
	Serial number
	Manufacturer
	Date of manufacture
	Keep away from sunlight
	Keep dry
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	Quantity (x)
	Follow instructions for use
	Warning; Electricity
	General warning sign

80115-501_V26386
2025-12

Symbol	Explanation
	Foot switch
ECB	Erbe Communication Bus Used to exchange data between Erbe units.
	Equipotentiality Refers to the grounding terminal.
	Off, On
	Defibrillation-proof type CF applied part The applied parts of the unit (e.g. instrument sockets) are protected against the effects of defibrillator discharge.
	Computer network Refers to the computer network itself or the network connections.
	Input
	Air inlet
	Air outlet
F	HF isolated patient circuit The risk of leakage currents and therefore the risk of burns is substantially reduced for the patient.
	Non-ionizing electromagnetic radiation A unit that bears this symbol does not transmit ionizing electromagnetic radiation. Interference may occur in the vicinity of the unit.
	The product must be disposed of separately.
CE	European conformity marking
MD	Medical device

80115-501_V26386
2025-12