Dr Oppel® RF

ST-501 DUAL

RADIO FREQUENCY ELECTROSURGICAL DEVICE

RF SYSTEM

OB • GYN

Surgery (GS, OS, NS)

ENT

Dermatology • Plastic Surgery • Urology

SOMETECH
SINCE 1989

Dr.Oppel RF®

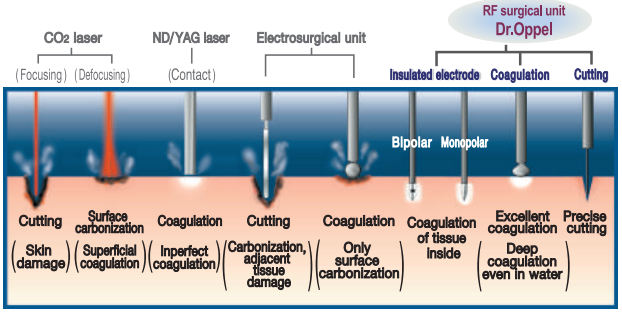
RADIO FREQUENCY ELECTROSURGICAL DEVICE

What is the 4MHz Radio Frequency Surgical Unit?

Dr.Oppel's electrode is not being heated by itself. Electrode lets the cellular tissue produce the joule heat, and operates hemostasis, cutting, and coagulation. 4MHz radio frequency makes possible precise cutting and deep coagulation even in blood.

There is no carbonization and damages to the surrounding cellular tissue by electric spark, and the safety secured.
Specially developed various Bipolar and Monopolar electrodes for OB/GYN,PS/DER, Urology has outstanding performance in Micro Surgery by their excellent output time function.

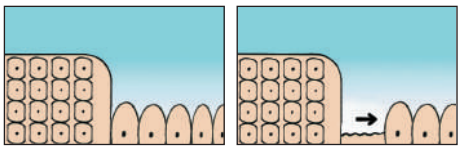
The distinctive functions from other electrosurgical units and lasers



OB / GYN

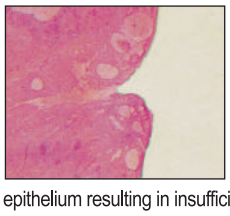
Radio frequency coagulation for Cervical Erosion

▶ The mechanism of erosion cure



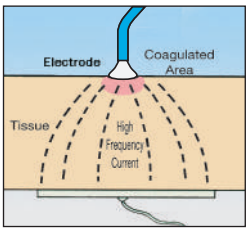
When columnar epithelium is defected in a special way, the erosion is cured by ingression of the near squamous epithelium.

▶ Cause of residue and relapse of columnar epithelium in erosion cure



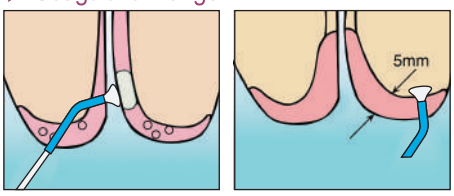
Since there are lots of unexpected cases when nabothian cysts are deeply formed in a patient's cervix, even though columnar epithelium is defected with drug, cauterization, and cryosurgery, the perfect cure is said to be hard due to the difficulty of ingression of squamous epithelium resulting in insufficient removal of columnar epithelium. For perfect removal of erosion, 5mm depth of coagulation is needed.

▶ What is RF coagulation?



It's a way of coagulation necrosis to the 5mm depth of tissue, when the radio frequency current flows from electrode, passing tissue, to the patient plate, by producing joule heat on the tissue itself close to electrode. It's very hard to make necrosis with cauterization or cryosurgery because no deep coagulation is capable. However, coagulation necrosis is perfectly achieved in the coagulation with radio frequency current because electrode lets the tissue itself produce joule heat.

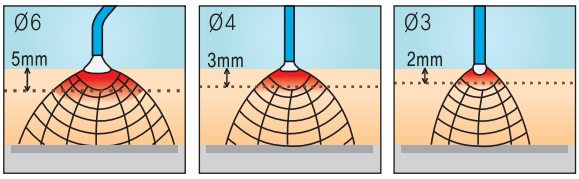
▶ Coagulation range



First, insert Ø6mm semi-ball type electrode into the os to 1~1.5Cm depth and start coagulation until boiling noise is heard, and then rotate electrode and slide all areas of erosion. In addition, perform coagulation on the normal squamous epithelium of ectocervix region to be 2mm-5mm overlapped.

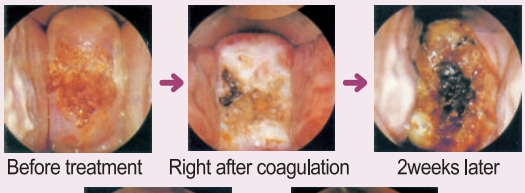
Caution For 5mm depth coagulation without carbonization, please rub the part with the electrode.

▶ Self control of coagulation depth



The coagulative depth is decided by the electrode size and the device is designed to make different coagulation depth by the electrode size as above.

▶ Healing progress



▶ Pain during operation

- As a rule, no anesthesia is needed. At times, there are some patients who feel painful, but most are operated easily without anesthesia. Only nulliparous woman is occasionally needed for that.

▶ Late Bleeding

- If the coagulation depth is shallow, necrosis region could be not enough and bleeding could occur due to vascular exposure. In this case, columnar epithelium is still remaining and squamous epithelium isn't repaired. The important thing, in this case, is to perform coagulation to the 5mm depth with care in an early stage of the practice. In addition, warn the patient to be careful not to have necrosis region seperate by exercise or sexual intercourse. Therefore, to prevent late bleeding, it is required that the necrosis region should be remaining without seperation for 3 weeks until the blood vessel closes up.

▶ Side effects

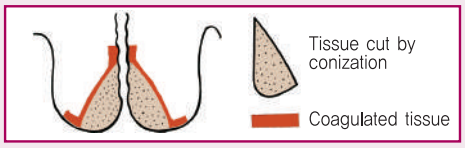
- No report has been made about side effects such as infertility and atresia of cervix caused by excessive coagulation.

Radio frequency conization for CIN lesion

▶ Special points

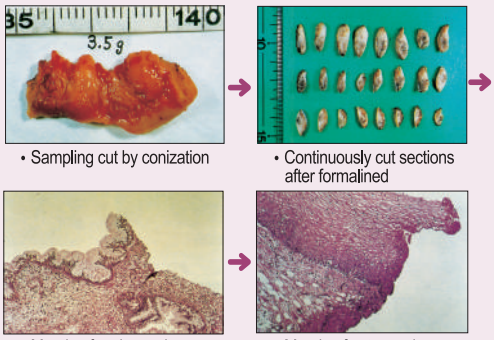
- Capable of a simple operation on an outpatient basis.
- Tissue sample is used for pathology reading.
- No general anesthesia is needed. Conization procedure takes only several seconds after local anesthesia. (10 seconds in conization and 3-4 minutes in coagulation).
- Various angles of conization probes.
- Perfect bleeding control.
- No suture is needed after conization.
- Short healing period (4-6 weeks).

▶ Radical Conization by HFSU



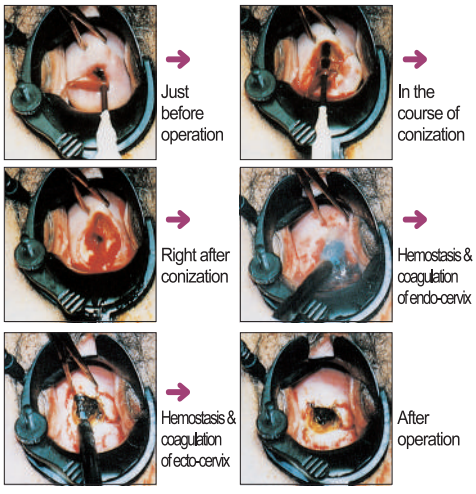
- Coagulation is performed for bleeding control and necrosis of the remaining lesion after conization

▶ Biopsy by conization



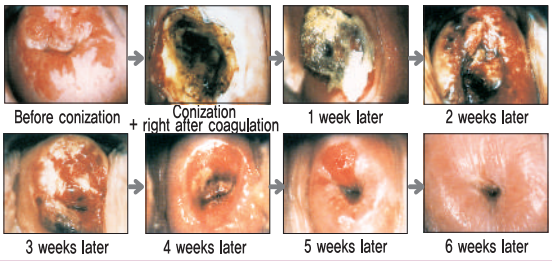
- Sampling cut by conization
- Continuously cut sections after formalined
- Margin of endo-cervix No tissue degeneration is seen
- Margin of ecto-cervix No tissue degeneration is seen

▶ Procedure of radical conization



- Firstly, place a patient on the operating table and carry out vaginal douche. And then, place the patient plate on the hip and expose the cervix. Secondly, after setting a conization electrode in the hand piece, start the conization from the part where no lesion is inferred to exist, and operate without a break. In this case, to proceed properly, cut by rotating conization electrode at 180 degrees, and then step off from the foot pedal. Continuously, keep operating the rest part of 180 degrees after changing handling form. After conization, coagulate the cut part widely by a Ø6mm bended semi-ball electrode. This is the purpose of necrosis after conization for the worry some where the lesion remains.

▶ Operation progress



• Different from laser treatment, radio frequency coagulation replaces the columnar epithelium with squamous epithelium completely in 4–6 weeks, also shown clearly in the colposcopy. Only small bleeding, but no massive one, may occur in the course of healing.

Electodes

E01 Ø6 Bended semi-ball, Coagulation to 5mm depth

E02 Ø6 Straight semi-ball, Coagulation to 5mm depth

E03 Ø4 Straight semi-ball, Coagulation to 3mm depth

E04 Ø3 Straight ball, Coagulation to 2mm depth, rapid superficial coagulation

E06 Spire, Micro Coagulation

E07 Blade(Curved), Hemostatic cutting and surface coagulation

E09 Blade (Straight), Hemostatic cutting and surface coagulation

F04 W 15mm x L 25mm (Conization)

G03 Fine Ø25 Loop (Round LETTZ)

J03 Ø0.3 Tungsten wire L15 Needle (cutting)

K02 Super Fine Ø6 Loop(Resection)

K04 Fine Ø10 Loop(Resection)

L02 Super Fine L6 Diamond (Resection)

N02 Super Fine L5 Oval Loop (Resection)

O01 Super Fine L4 Square Loop (Resection)

Electodes *Option*

F01 W 10mm x L 20mm (Conization)

F02 W 10mm x L 25mm (Conization)

F03 W 15mm x L 10mm (Conization)

F05 W 17mm x L 17mm (Conization)

G01 Fine Ø15 Loop (Round LETTZ)

G02 Fine Ø20 Loop (Round LETTZ)

I18 Bipolar Cord

I09 Bipolar Cord Adaptor

S02 Cord for connecting endoscopic electrode

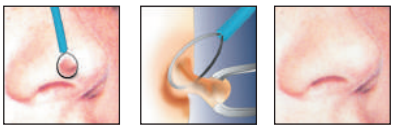
Surgery (GS, OS, NS)

Nevus and freckle removal

• Vaporize by using needle electrode after setting timer for continuous and output power 8 ~ 9. It hardly leaves a scar since the surrounding tissues are not damaged.

Applicable electrodes : E06, J03

Wart, corn, condyloma and polyp removal

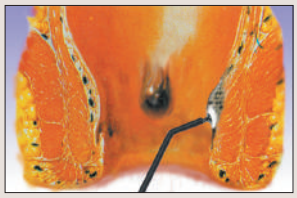


Applicable electrodes : K, L, N, O electrodes

• Resect by using loop electrode or diamond electrode after setting timer continuous and output power 4 ~ 6.

Operation of hemorrhoids (Internal, external hemorrhoids)

● First or second degree early hemorrhoid :



Radio frequency coagulation without resection

• For early hemorrhoids, coagulate mucosa after setting the timer for 1 sec and output power 7 ~ 9.

Applicable electrodes : E03b, E04b

● Second and third degree early hemorrhoids : Inside coagulation of mucosa by insulated bipolar electrodes

• Coagulate around hemorrhoidal plexus to reduce tissue volume without any damage to mucosa.

Applicable electrodes : T16 (Insulated bipolar electrode for inside coagulation of hemorrhoids)

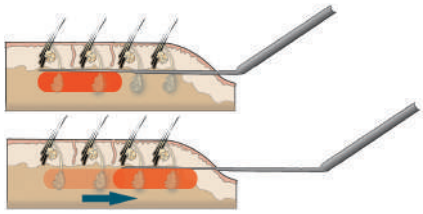
● Third or fourth degree hemorrhoids, strangulated hemorrhoids, mixed hemorrhoids and anal prolapse

• Operation by various electrodes for incision, hemostasis and excision of hemorrhoidal piles.

Applicable electrodes : E07, E09, J03, K02, K04

Osmidrosis axillae operation (Apocrine gland coagulation)

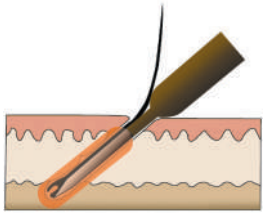
• Monopolar • Timer : 1 second • Output power : 8~9



Applicable electrodes : C10 (Insulated coagulation electrode (end cut flatly)

Hair root removal (Permanent removal)

• Monopolar • Timer : 1/4 ~1/8 second • Output power : 4 ~ 5



- It does not leave a scar since only hair root is coagulated without damage to skin.

Applicable electrodes : Hair root removal electrodes

Electodes

C10
Ø1.0 Insulated coagulation electrode (1 Point curved, end cut flatly) for osmidrosis axilla

E03b
Ø4 Bended semi-ball(L90), Coagulation to 3mm depth

E04a
Ø3 Straight ball(L90), Coagulation to 2mm depth, rapid superficial coagulation

E04b
Ø3 Bended ball(L90), Coagulation to 2mm depth, rapid superficial coagulation

E06
Spire, Micro coagulation

E07
Blade(Curved), Hemostatic cutting and surface coagulation

E09
Blade (Straight), Hemostatic cutting and surface coagulation

J03
Regular L15 Needle

J04
Regular L15 Round Needle

K01
Super Fine Ø4 Loop(Resection)

K02
Super fine Ø6 Loop(Resection)

K04
Fine Ø10 Loop(Resection)

L02
Super Fine L6 Diamond(Resection)

Electodes *Option*

A09

Cord for disposable plate

Disposable

BS2510		Ø0.15 wire(Hair root removal)
BS3512		Ø0.15 wire(Hair root removal)
BS5025		Ø0.15 wire(Hair root removal)
BL4015		Ø0.18 wire(Hair root removal)
BL4515		Ø0.18 wire(Hair root removal)
BL5025		Ø0.18 wire(Hair root removal)

I18

Bipolar Cord

S02

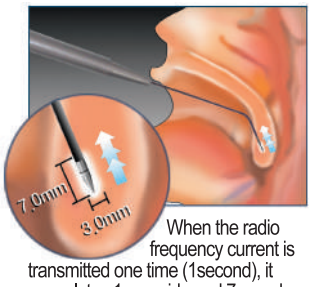
Cord for connecting endoscopic electrode

T16

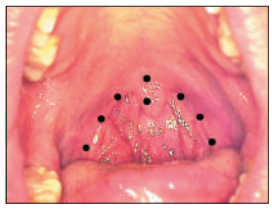
Ø1.3 Insulated bipolar electrode for snoring treatment (soft palate ablation) and hemorrohid

Inside coagulation of palate mucosa (Snoring)

• Bipolar • Timer : 1 second • Output power : 7

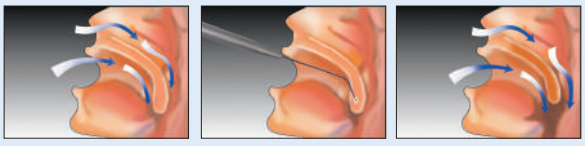


When the radio frequency current is transmitted one time (1second), it coagulates 1mm wide and 7 mm deep. Surrounding temperature rises up to 60~70℃. Repeat the coagulation with moving electrode backward 5~7mm each time.



After local anesthesia the above 4 or 5 parts of tonsil and palate, repeat coagulation to the parts by inserting insulated electrode.

▶ Operation procedure



Swollen tonsil and palate	→ Coagulate tonsil and inside of soft palate using insulated coagulation electrode.	→ Tonsil and palate were reduced and returned to the normal size

- Otitis media
- Halitosis
- Heavy snoring
- Difficult breathing

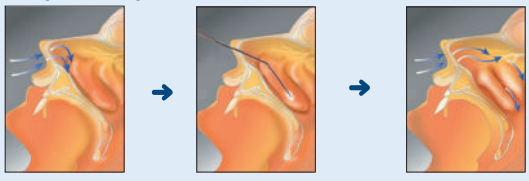
Insert insulated electrode into the inside of palate and tonsil mucosa and coagulate the part to reduce the tissue volume. Dr. Oppel can coagulate only the inside of tonsil and palate mucosa without damage to other parts.

Applicable electrodes : T16

Inside coagulation of inferior turbinate mucosa (Chronic hypertrophic rhinitis)

• Bipolar • Timer : 1 second • Output power : 7

▶ Operation procedure



Swollen inferior turbinate	→ Inside coagulation of mucosa by the insulated electrode	→ Inferior turbinate reduced and returned to the normal size - No difficulty in breathing

- Difficult breathing
- Nasal sound
- Difficult concentration
- Headache

- Insert the insulated electrode into the inferior turbinate and coagulate the part to reduce the tissue volume. Dr.Oppel can coagulate only the inside mucosa of inferior turbinate.

Applicable electrodes : T17

Electrodes *Option*

A09

Cord for disposable plate

Disposable

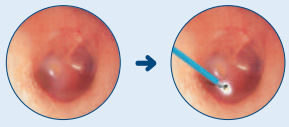
I18

Bipolar Cord

Radio frequency perforation and drainage for exudative otitis media

• Monopolar • Timer : 1/4 second • Output power : 6~7

▶ Operation procedure



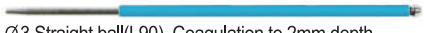
Exudate stayed in tympanum

- Make a hole in ear drum by transmitting the radio frequency on the top of the insulated cutting needle and remove inflammatory discharges. The hole slightly coagulated will be cured soon naturally.

Applicable electrodes : J10

Electrodes

E04a



Ø3 Straight ball(L90), Coagulation to 2mm depth, rapid superficial coagulation

E04b

Ø3 Bended ball(L90), Coagulation to 2mm depth, rapid superficial coagulation

E05a

Ø2 Bended ball(L90), Epistaxis hemostasis

E09

Blade (Straight), Hemostatic cutting and surface coagulation

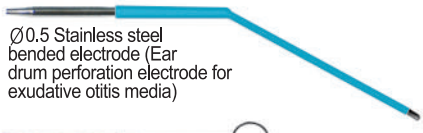
J03

Ø0.3 tungsten wire L15 Needle (Cutting)

J04

Regular L15 round Needle (Cutting)

J10



Ø0.5 Stainless steel bended electrode (Ear drum perforation electrode for exudative otitis media)

K02

Super Fine Ø6 Loop (Resection)

K04

Fine Ø10 Loop (Resection)

N04

Fine L8 Oval Loop (Resection)

T01

Bipolar cord (For "T" series)

T16

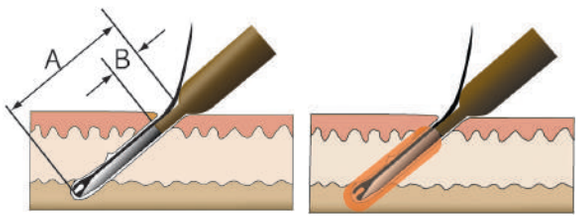
Ø1.3 Insulated bipolar electrode for snoring treatment (soft palate ablation) and hemorrhoid

T17

Ø1.3 Insulated electrode for tissue ablation of turbinate mucosa (for hypertrophic rhinitis)

Hair root removal (Permanent removal)

• After setting the unique timer function of Dr. Oppel 1/4~1/8 second, and output power 4~5, repeat treatment.



- A : Total length of inserting
  B : Insulated part

- It does not leave a scar since only hair root is coagulated without damage to skin.

Applicable electrodes : Hair removal electrodes

ITEM NO	Shape	Color	Length of A	Length of B	External diameter of needle
BS2510		white	2.5mm	1.0mm	Ø0.15 wire
BS3512		Black	3.5mm	1.2mm	Ø0.15 wire
BS5025		Red	5.0mm	2.5mm	Ø0.15 wire
BL4015		Yellow	4.0mm	1.5mm	Ø0.18 wire
BL4515		Blue	4.5mm	1.5mm	Ø0.18 wire
BL5025		Green	5.0mm	2.5mm	Ø0.18 wire

Nevus and freckle removal

• Vaporize by using needle electrode after setting timer for continuous and output power 7~9. It hardly leaves a scar since the surrounding tissues are not damaged.

Applicable electrodes : E06, J03

Electrodes

C10 Ø1.0 Insulated coagulation electrode (end cut flatly) for osmidrosis axillae

E04 Ø3 Straight ball(Hemostatic coagulation)

E05 Ø2 Straight ball(Hemostatic coagulation)

E06 Spire(Micro coagulation)

E09 Blade (Straight), Hemostatic cutting and surface coagulation

E10b Hemostatic cutting electrode for blepharoplasty (15mm)

J03 Regular L15 Needle(Incision, Vaporization)

J06 Super fine L5 bended Needle

J11 Micro cutting (2mm)

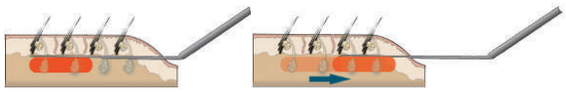
J12 Micro cutting (3mm)

K01 Super fine Ø4 Loop

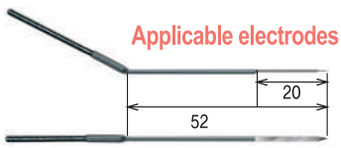
K02 Super fine Ø6 Loop

Osmidrosis axillae operation (Apocrine gland coagulation)

• After setting the unique timer function of Dr. Oppel for 1 second and output power 8~9, repeat coagulation to the target area in order.



Applicable electrodes : C10

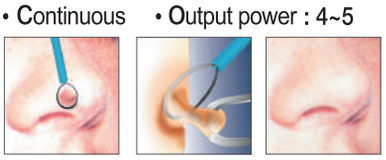


(Side view)

(Bottom view)

Wart, corn, condyloma and polyps removal

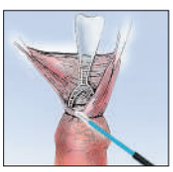
• Continuous • Output power : 4~5



Applicable electrodes : K01, K02

• Resect by using loop electrode or diamond electrode.

Circumcision



• Various types of posthetomy can be fulfilled with the various kinds of electrodes excellent in pure cutting and coagulation.

Electrodes *Option*

A09

Cord for disposable plate

Disposable

BS2510 Ø0.15 wire(Hair root removal)

BS3512 Ø0.15 wire(Hair root removal)

BS5025 Ø0.15 wire(Hair root removal)

BL4015 Ø0.18 wire(Hair root removal)

BL4515 Ø0.18 wire(Hair root removal)

BL5025 Ø0.18 wire(Hair root removal)

E10a Hemostatic cutting electrode for blepharoplasty (10mm)

E10c Hemostatic cutting electrode for blepharoplasty (20mm)

I18

Bipolar cord

Instruction Guide

OB/GYN

Operation	Electrode	Monopolar /Bipolar	Time setting	Output level
Erosion coagulation	E01,E02	Monopolar	Continuous	4~6
Cervical conization	F01~F05	Monopolar	Continuous	7~8
LLETZ	G.H Series	Monopolar	Continuous	7~8
Bipolar coagulation	Bipolar forcep	Bipolar	Continuous	"2(min) ~10(max) adjusted by forcep active area "
Cutting	Needle, Loop	Monopolar	Continuous	7~8
Coagulation	Φ6 mm Ball	Monopolar	Continuous	7~8
	Φ4 mm Ball	Monopolar	Continuous	4~5
	Φ3 mm Ball	Monopolar	Continuous	3~4
Hemostatic cutting	Spear, Blade	Monopolar	Continuous	7~8

ENT

Operation	Electrode	Monopolar /Bipolar	Time setting	Output level
Snoring	T16	Bipolar	1 sec	6
"Chronic hypertonic rhinitis"	T17	Bipolar	1 sec	6
Exudative otitis media	J10	Monopolar	1/4 sec	5~6
Cutting	Needle	Monopolar	Continuous	7~8
Coagulation	Φ2 mm Ball	Monopolar	Continuous	2~3
	Φ3 mm Ball	Monopolar	Continuous	3~4
Hemostatic cutting	Blade	Monopolar	Continuous	7~8
Cutting	Loop (K02)	Monopolar	Continuous	6~8
	Loop (K04)	Monopolar	Continuous	7~8

Surgery (GS • OS • NS)

Operation	Electrode	Monopolar /Bipolar	Time setting	Output level
Cutting	Needle	Monopolar	Continuous	7~8
Coagulation	Φ4 mm Ball	Monopolar	Continuous	4~5
	Φ3 mm Ball	Monopolar	Continuous	3~4
Hemostatic cutting	Blade	Monopolar	Continuous	7~8
"First or second degree hemorrhoid"	Φ4 mm Ball	Monopolar	1 sec	3~5
	Φ3 mm Ball	Monopolar	1 sec	2~3
Second or third degree early hemorroids	T16	Bipolar	1 sec	5~6
Hair root removal	BS, BL Type	Monopolar	1/2 sec	2~4
Osmidrosys	C10	Monopolar	1 sec	7~8
Nervus and freckle	J02	Monopolar	Continuous	3.5
	J03	Monopolar	Continuous	4.5
"Wart, corn, condyloma,Polyps"	K02,L02	Monopolar	Continuous	6~8
	N01,O02	Monopolar	Continuous	6~8
Hemostatic coagulation	E03a,E03b	Monopolar	Continuous	3~5
Cutting	J02,J03	Monopolar	Continuous	7~8
Hemostatic cutting	E07~E09	Monopolar	Continuous	7~8

Dermatology • Plastic Surgery • Urology

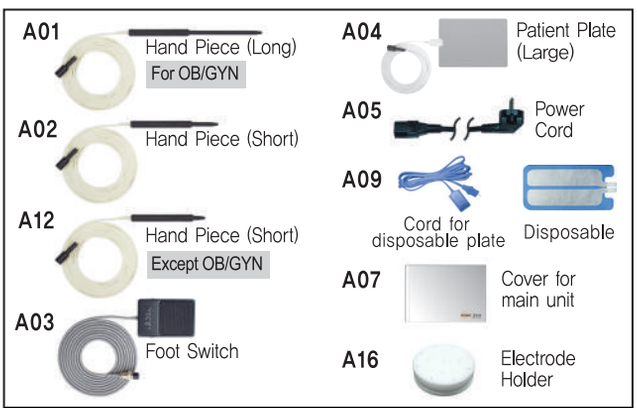
Operation	Electrode	Monopolar /Bipolar	Time setting	Output level
Hair root removal	BS, B/L Type	Monopolar	1/4 sec or 1/8 sec	2~4
Osmidrosys	C10	Monopolar	1 sec	7~8
Nervus and freckle	J01, J02	Monopolar	Continuous	3.5
	J03	Monopolar	Continuous	4.5
Wart, corn	K01,K02,L02	Monopolar	Continuous	6~8
Condyloma, polyps	K03	Monopolar	Continuous	6~8
Hemostatic coagulation	Φ2 mm Ball	Monopolar	Continuous	2~3
	Φ3 mm Ball	Monopolar	Continuous	3~4
	E06	Monopolar	Continuous	5~6
Cutting	J01,J02	Monopolar	Continuous	7~8
	J03,J06	Monopolar	Continuous	7~8
Opthalmoplasty	J11,J12	Monopolar	Continuous	3~5
Pimple	BS,BL Type	Monopolar	1 sec	2~4
Capillary vessel	BS,BL Type	Monopolar	1/2 sec	2~4

⚠
- Dr. Oppel should be used only by well trained doctors. Prior to initial operation, doctors should be fully aware of the operation methods and conditions that are described in the labels attached to the products.
- The guide lines of Output Control, Timer Setting or Operation Time for each symptom described above are standard instruction but may not be fully applicable to all patients in the same way. Therefore, operators are requested to do minute adjustments according to each symptom and case

Specification

MODEL NAME	Dr.Oppel ST-501
OUTPUT POWER	**MONOPOLAR** : 130W ± 20% (Average power on 100Ω load) **BIPOLAR** : 90W ± 20% (Average power on 50Ω load)
FREQUENCY	4MHz
INPUT VOLTAGE (Customer - Made)	100 / 110 / 120 / 220 / 230 / 240 VAC, 50 / 60Hz
TIME SELECTION	Continous, 1sec, 1/2sec, 1/4sec, 1/8sec
POWER CONSUMPTION	400 VA + 10% under on maximum load
WEIGHT	10 kg
DIMENSION	Main Unit : 225(W) X 300(L) X 155(H)mm

Standard Accessories



* This specification is changeable without notice for product improvement.

SOMETECH SINCE 1989 ISO 9001 ISO 13485 GMP

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