

ALAN®

ANZ
Medical

SOLE DISTRIBUTOR

IMPULSE

PROVEN

TESTED

TRUSTED

“Energy
Work Station”



ELECTRO SURGICAL PRODUCTS

CORPORATE
OFFICE

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HOTLINE

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COMBI MAX



Completely Modular and Upgradable 400W Energy Workstation
Monopolar, Bipolar, Vessel Sealing, Plasma Bipolar in Saline and Argon Enhancement.

Models:

MBXXX, MBVXX, MBXXP, MBXVP, MBAXX, MBAXP, MBAVX, MBAVP

ELSY - 360 D+



Mid-Range 400W Electro Surgical Unit with Monopolar and Bipolar with Added Features of Auto-Stop, EndoCut and Soft.

ELSY - 360 M+



Premium 400W Electro Surgical Unit with Monopolar, Bipolar and Vessel Sealing features.

ELSY - 360 L+



Mid-Range 400W Electro Surgical Unit with Monopolar and Bipolar with Added Features of Spray and Micro.

E - LITE



Basic 300W Electro Surgical Unit with Basic Monopolar and Bipolar Modes.



ELECTROSURGERY RE-DEFINED



CE
1639

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COMBI MAX... THE ENERGY WORK STATION



GENERAL FEATURES

1. Wide angle color LCD Touch Screen Display.
2. User programmable 199+1 memory locations which saves complete user profile. It includes all user preferences like Footswitch Power mode, Surgery names, type of Surgery etc.
3. Simultaneous coagulation facility for 2 surgeons in Monopolar.
4. Independent different settings for 2 Monopolar outputs.
5. Monopolar Bend has 10% to 90% (17 steps user adjustable setting to achieve varying cutting effects Monopolar).
6. Auto-Stop coagulation in Monopolar.
7. Auto Start & Auto-Stop coagulation in Bipolar.
8. Randomized Spray ON/OFF control in Monopolar Coagulation.
9. Isolated Monopolar & Bipolar outputs.
10. Suitable for all Underwater, Laparoscopic & Open Surgeries.
11. Digital Volume control with Audio & Visual Alarm.
12. User settable Brightness & Contrast control for LCD to improve visibility.
13. Graphical Patient Plate Contact Quality indication.
14. Works on Generator, Inverter & UPS.
15. The Unit has 3 Pedal Footswitch which is Explosion & Water Proof.
16. Provision to connect Footswitch for each Monopolar Port.
17. Single Touch switchover from one mode to another mode.

COMBINATION OF

1. Vessel Sealing System
2. Monopolar TUR
3. Monopolar
4. Bipolar Saline TUR
5. Argon Plasma Coagulator
6. Bipolar

SAFETY FEATURES

1. Patient Plate Contact Quality Monitoring System.
2. Adaptive Patient Plate Monitoring feature (can be Enable/Disabled)
3. High Frequency leakage monitoring & controlling system.
4. Multiple Microcontroller Supervision for RF power accuracy.
5. Touchscreen Auto-Lock facility to prevent accidental change of settings.
6. Real-time tissue impedance monitor for Power control.
7. Power up Self-Test to ensure the unit healthiness.
8. Handswitch and Footswitch short detection during Self-Test.
9. Real-time Instrument open and Instrument short detection in Ligate mode.
10. Modes, Power and all other settings are accessible through touchscreen as well as unit keypad.
11. User settable maximum RF activation Timeout Limit, with Disable Function.
12. Port ON/OFF control to prevent accidental RF activation.
13. Warnings & Errors are stored with date, Timestamp & Error description. They are stored for viewing later if necessary.
14. Footswitch can be assigned to different ports as per user's preference.
15. Two Gas Cylinders can be connected with auto Switchover.
16. Real-time Argon Gas level indication for 2 cylinders.

APPLICATIONS

1. Thoracic Surgery
2. Gynaecology
3. Liver Surgery
4. Laparoscopy & Pelviscopy
5. TURP, TUVP, TUEB, TCRE etc.
6. Gastroenterology
7. Cardiac Surgery
8. Plastic & Reconstructive Surgery
9. Casualty & General Surgeries
10. Underwater Surgery.
11. Other Open Surgeries

PATIENT PLATE

PATIENT PLATE CONTACT QUALITY MONITORING SYSTEM (PPCM)

This Monitoring System, monitors Split & Non-Split type Patient Plates and deactivates output power with error message & audiovisual alarm during improper contact between Patient and Patient Plate to eliminate the risk of Patient Burn.



Non-Split Type PP
(Reusable)



Split Type PP
(Reusable)



Split Type PP
(Disposable)

PPCM WITH CONVENTIONAL (NON-SPLIT) PATIENT PLATE

With this Patient Plate, wire disconnection is monitored and on disconnection of any one of the wire, the unit stops the HF delivery and gives Error message with an audible alarm to OT members on real-time basis

PPCM WITH SPLIT TYPE (DUAL PAD) PATIENT PLATE

With Split Type Patient Plate, contact quality is monitored in real-time basis. If the contact area with patient is reduced, it stops the HF delivery and gives error message with an Audible Alarm. User can also select Adaptive PPCM to enhance safety.

Alan strongly recommends the use of Split Type Patient Plate with adaptive mode for maximum safety

WIRELESS FOOTSWITCH



BISSECTOR



Our Patente Bisector TM design enables Cutting, Coagulation and Vessel Sealing Using Single Instrument saving Time and Money.

LOW ENERGY BLUETOOTH TECHNOLOGY

Introduction of LOW ENERGY BLUE TOOTH TECHNOLOGY in Footswitch for Electrosurgery, increases Surgeon's comfort level and gives them freedom from Wires. Three Pedal Footswitch makes it easier for Surgeons to operate Monopolar, Bipolar & Ligate at the same time without switching the modes in Unit. It eliminates the need of separate Footswitch for Ligate which further enhances Surgeon's Convenience

1. Introduction of Wireless Footswitch with Electrosurgical Unit for the first time in the world.
2. A Tangle free Environment with new Wireless Footswitch.
3. First in the world to offer Battery life of more than 5 years which gives OT team the freedom from charging and replacing the batteries.
4. Working Range more than 10 Meters.
5. Water & Explosion Proof Design.

SPECIAL MODES FOR SPECIAL PROCEDURES



A. SEALING VESSELS IS NOW SIMPLER THAN EVER

Alan's Vessel Sealing System is equipped with real-time tissue feedback technology with auto-power control to Seal Vessels effectively. Multiple controllers' supervision for tissue impedance and power delivery enables our Vessel Sealing System to maintain the consistency and reliability.

1. Ligated (Sealing completed)
2. Instrument Short
3. Instrument Open
4. Regrasp (Repeat Sealing Cycling for Non-Sealed Vessels) etc

All these conditions are precisely detected and displayed in real-time condition to OT members through warning/error messages with an audible alarm.

FEATURES

1. Works with all sealing instruments, 5mm, 10mm etc.
2. Can Seal up to 7mm Vessels.
3. 5 Different ligation levels for different Vessel Thickness.
4. 2 Different Fast Ligation Levels for Faster Sealing Cycle.
5. Faster Sealing Cycle with Less Thermal spread results in faster post recovery.
6. Separate Single Pedal for Ligation help surgeons to use Monopolar, Bipolar and Vessel Sealing in a procedure without any mode switchover.
7. Instrument Open & Short detection.
8. Automatic Timeout to prevent the instruments from overheat.
9. Easily interpretable warning and error message helps the OT members to handle the conditions quickly.
10. Different tones for error/warning, sealing completed and HF activation etc.

B. FUNCTIONING OF BIPOLAR TUR

Alan's BI-TUR is an efficient system which instantly generates Plasma around the loop and the tissue comes in contact are vaporized creating the cutting effect. When the resection is done at moderate speed, the thermal energy generated coagulates the capillary bleeders, reducing the need for separate Coagulation. The outcome is good, Haemostatic resection but shallow enough to prevent irritative symptoms observed with laser technologies.

ADVANTAGES

1. Saline irrigation eliminates TUR syndrome,
2. Large glands can be resected without the fear of TUR syndrome.
3. Safer because lower voltage (300 V) is used, compared to Monopolar TUR voltage (400 V)
4. No Patient plate is required, thus eliminates the chances of alternate site burns.
5. The current flow is localized in the loop itself which makes it safer to use on cardiac patients.
6. Thermal damage due to current passing through urethra is prevented, thus minimizing the urethral strictures.
7. Bipolar Saline TUV, TURP, TCER, TUEB etc.

APPLICATIONS

1. TUV: Transurethral Vaporization of Prostate.
2. TURP: Transurethral Resection of prostate.
3. TCER: Trans Cervical Resection of the Endometrium.
4. TUEB: Transurethral Endometrium with Bipolar.

C. ARGON PLASMA COAGULATOR

Argon enhancement in electrosurgical application adds precision and control in surgical procedures. It offers quick and Efficient Coagulation, a thinner & more flexible Eschar, Less Charring Less Tissue Damage and Faster Post Recovery.

ADVANTAGES

1. Energy Work Station with integrated Argon Plasma Coagulator.
2. Argon enhancement in Monopolar Cut and Coag.
3. Cut and Coag modes have independent Argon Control.
4. Works with Handswitch and Footswitch.
5. Smart & efficient gas management system saves Argon gas from wastage.
6. Simple Argon ON/OFF control.
7. Superior Coagulation.
8. Effective on high impedance tissues.
9. Enhanced healing of the target tissues.

SAFETY REDEFINED



1. MULTI PROCESSORS FOR BETTER ACCURACY

Multiple Microcontrollers Supervision enables the Combimax Surgical Generators to deliver, control and maintain the power levels dynamically in varying tissue impedances.

2. SMART AUTO-STOP COAGULATION

Microcontroller measure the tissue impedance and automatically stops the HF delivery after obtaining "Optimum Coagulation" without charring the tissue. Sticking effect & heat produced on instrument is reduced which increases life of the instrument. Thermal spread is also minimized in this mode because the machine senses increase in tissue impedance and stops the delivery at appropriate time.

3. HANDSWITCH AND FOOTSWITCH SHORT DETECTION

Handswitch and Footswitch conditions are scanned during power up Self-Test. If Handswitch/Footswitch is detected in Short/Activated conditions during self-Test, it gives an error message with an audible alarm. This prevents the accidental HF power activation during power interruption and also alerts the OT members to check the instrument prior to surgery if a faulty instrument is in use.

4. TISSUE MONITORING TECHNOLOGY

Alan's Combimax Surgical Generator are equipped with Tissue Monitoring Technology. This technology monitors the tissue impedance and dynamically varies the HF current & voltage in microseconds to achieve the desired effect on tissue as per selected mode of operation. This prevents unintended power delivery, which helps in faster post recovery of patients as well as protects the instrument from accidental damage due to excessive power/HF voltage.

5. HF LEAKAGE MONITOR & CONTROLLER

Active HF Leakage Monitor constantly supervises Leakage Current. If any current leakage is detected, Microcontroller controls it efficiently. If these current exceeds specified limit, Microcontroller stops the HF delivery and gives Error Message with an Audible Alarm.

6. 199+1 USER PROGRAMMABLE PROFILES

Surgeon can store & recall the complete preferences which includes Power setting of each displayed Mode, Timecut limit, Footswitch settings, Key tone setting, Activation Tone and Volume setting by just selecting program number. By doing this, the total profile is restored. Additionally last activated setting can be restored thus practically 200 profiles are stored.

7. SMART AUTO-START COAGULATION

Auto-Start in this mode the unit delivers power when tissue is held between forceps or similar instrument by automatically sensing the tissue presence.



TOUCHSCREEN AUTO-LOCK FOR MAXIMUM SAFETY

Controllers will disable the touch sensing after a predefined time if the touchscreen is not in use. This protects the power and other settings intact even if anyone touches the Screen Accidentally. Once Touch Screen is locked, user can unlock and use the same safely.

PORT ON/OFF CONTROL

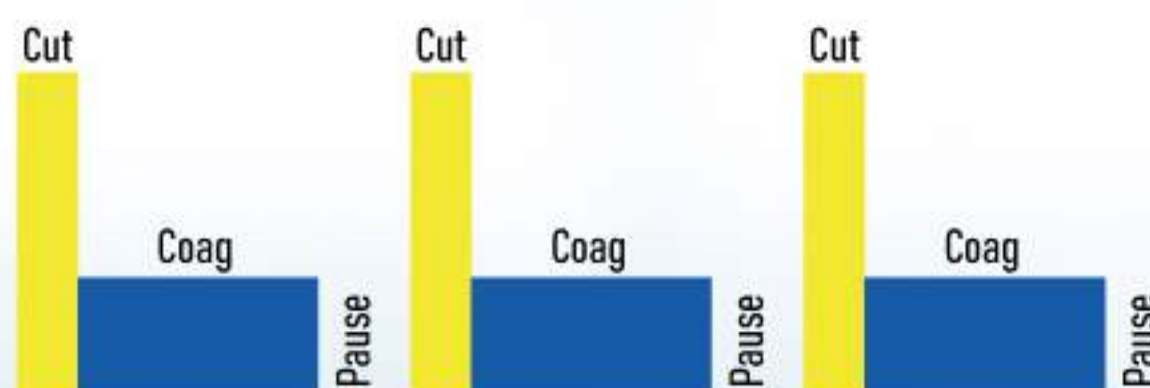
RF output of individual ports can be enabled or disabled, depending upon the procedure requirements. This prevents accidental activation of unused RF output and ensures maximum safety of patient and OT members.

ENDOCUT

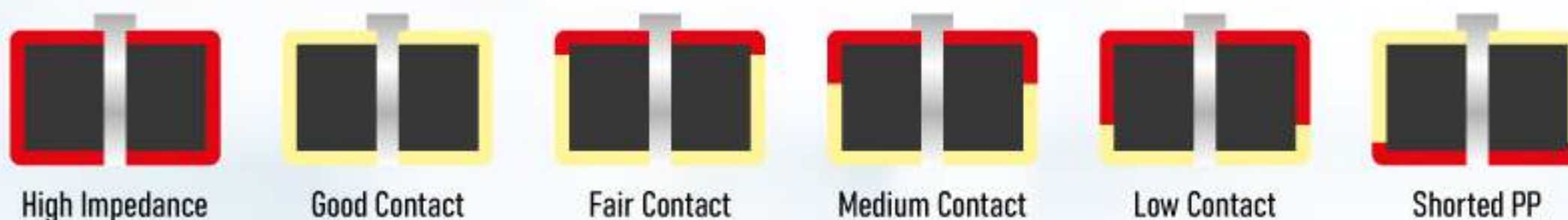
The fractionated cutting mode ENDO CUT is characterized by alternating Cutting and Coagulation Cycles. This makes it possible to carry out controlled cutting with Sufficient Haemostasis and (Bloodless) Dry PRECUT during Gastroenterology. It is also useful for myomectomies & Cervical Conization.

The unit continues Coagulation till the bleeding stops and resumes Cutting again.

10 Levels are given to achieve varying speed, depth and sharpness of CUT



PPCM WITH SPLIT-TYPE (DUAL PAD) PATIENT PLATE



PPCM with Conventional (Non-Split) Patient Plate: With this Patient Plate, wire disconnection is monitored and on disconnection of any one wire, the unit stops the HF delivery, and gives Error message with as audible alarm.



Alan strongly recommends use of Split-Type Patient Plate with adaptive mode for maximum safety.

PATIENT PLATE CONTACT QUALITY MONITORING SYSTEM

PPCM with Split-Type (Dual Pad) Patient Plate: With Split Patient Plate, contact quality is monitored in real time basis. If the contact area with the patient is reduced, it stops the HF delivery and gives error message with an audible alarm.

User can also select adaptive PPCM to enhance safety.



MONOPOLAR COAGULATION MODES	MONOPOLAR CUT MODES	BIPOLAR MODES	LIGATE MODES	BIPOLAR SALINE MODES (BI-TUR)
Lo Spray Hi Spray Fulgurate Hi Desi Lo Desi Soft Auto Desi Auto Soft	Pure LopCut Blend EndoCut I-Cut V-Cut	Cut/Standard Macro/Force Micro/Precise SAS Auto Micro V-Mode	Ligate F-Ligate	Low Cut HiCut 1 HiCut 2 HiCut 3 Effect 1 Effect 2 Desiccate Force

- | Random Spray ON/OFF Selection
- | Argon ON/OFF Selection
- | Bipolar Output ON
- | Argon ON/OFF Selection
- * Optional Features
- Ligate Port Selection

MODELS COMPARISON

Description	MBXXX	MBAXX	MBVX	MBAVX	MBXXP	MBAXP	MBXVP	MBAVP
MONOPOLAR	Present	Present	Present	Present	Present	Present	Present	Present
BIPOLAR	Present	Present	Present	Present	Present	Present	Present	Present
APC		Present		Present		Present		Present
VESSEL SEALING			Present	Present			Present	Present
BI-TUR					Present	Present	Present	Present

TECHNICAL SPECIFICATIONS

RF OUTPUT CHARACTERISTICS

MONOPOLAR CUT MODES

Pure	400 W 350 Ohm CF 1.5
Lap Cut	300 W 350 Ohm CF 1.5
Blend	250 W 350 Ohms CF-Variable
EndoCut	10 Levels CF-Variable Max. Power 200W @ 300 Ohms
i-Cut	10 Levels CF-Variable Max. Power 200W @ 300 Ohms
V-Cut*	10 Levels CF-1.5 Max. Power 300W @ 350 Ohms

MONOPOLAR COAGULATION MODES

Lo Spray	120 W @ 500 Ohms CF 9.0
Hi Spray	70 W 1000 Ohms CF 12.5
Fulgurate	150 W @ 500 Ohms CF Variable
Lo Desiccate	120 W @ 500 Ohms CF Variable
Hi Desiccate	180 W @ 500 Ohms CF Variable
Soft	120 W @ 150 Ohms CF 1.5
Auto Desiccate	40 W
Auto Soft	40 W

| Randomized Spray Selections Available

BIPOLAR MODES

Cut / Standard	120 W @ 100 Ohms CF 1.5
Macro / Force	120 W @ 100 Ohms CF 1.5
Micro/Precise	100 W @ 100 Ohms CF 1.5
Auto Macro	120 W @ 100 Ohms CF 1.5
Auto Micro	100 W @ 100 Ohms CF 1.5
V-Mode*	10 Effects CF-1.5 Max. Power 120W@75 Ohms

| Auto Start/Stop

LIGATE

Ligate	5 Levels
F-Ligate	2 Levels

BIPOLAR (SALINE TUR) CUT

Low Cut	250 W @ 200 Ohms CF 1.5
Hi Cut 1	300 W 200 Ohms CF 15
Hi Cut 2	300 W @ 200 Ohms CF 1.5
Hi Cut 3	300 W @ 200 Ohms CF 1.5
Effect 1	300 W @ 200 Ohms CF Variable
Effect 2	300 W @ 200 Ohms CF Variable

BIPOLAR (SALINE TUR) COAGULATION

Desiccate	250 W @ 25 Ohms CF 1.5
Force	200 W @ 25 Ohms CF 3.0

TECHNICAL DATA INPUT SUPPLY

Input	220/230 VAC $\pm$ 20%, 50 Hz
Power Consumption	750VA Max.
Protection Class	I
Mdd.	II B
Input Fuse	5A T
Output Control	7" Colour TFT Display with Touch Screen and Push buttons in all Modes
Nominal Freq.	360 KHz

ARGON

Max. inlet pressure	4.5 bar (65.25 psi)
Min. inlet pressure	2.5 bar (36.25 psi)
Max. No. of Cylinders	2
Argon Gas purity	99.998%

MAX. OUTPUT

Maximum Power Output: 400 watts

SAFETY STANDARDS

Basic Construction	In accordance with IEC 60601-1, IEC 60601-1-2 & IEC 60601-2-2
Unit Type	CF
Electrical Potential	Connecting Pin & Indicated by Symbol
Balancing	
PER	98

ENVIRONMENTAL FACTORS OPERATING

Ambient temperature	+10° C to +40° C
Relative humidity	30% to 75% non-condensing
Atmospheric pressure	700 millibars to 1060 millibars

TRANSPORT AND STORAGE

Ambient temperature	-30° C to +65° C
Relative humidity	0% to 90% non-condensing
Atmospheric pressure	500 millibars to 1060 millibars

DIMENSIONS

420mm (W) x 170mm(H) x 380mm (D)

WEIGHT

Max Weight -8 Kg

* Optional Features

| Specifications are subject to change due to continual development & upgradation.



CE
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EASY-360 M+

ADVANCED MICROCONTROLLER BASED
DIGITAL ELECTROSURGICAL UNIT

Alan's Electrosurgical unit (Diathermy) is designed with latest miniature electronic circuit design technology. The advanced microcontroller based technology helps in achieving the desired tissue effects. It is Small in Size but Surprises on Performance.

+ SAFETY

- | Patient Plate Contact Quality Monitoring System.
- | HF leakage monitoring & controlling systems.
- | Real-Time Tissue impedance monitoring for power control.
- | Power up Self-Test to ensure the unit healthiness.
- | Handswitch and Footswitch short detection during Self-Test.
- | Multiple microcontroller supervision for RF power accuracy.

+ RELIABILITY

- | Built in line filter protects from voltage surges and bad line conditions hence no need to use Spike Buster.
- | No need of voltage stabilizer, can work in lower voltage.
- | Works on Generator, Inverter & UPS.
- | Convection Cooling System offers better Reliability.
- | Alan's proven track record for more than 20 years.

GENERAL FEATURES

1. Feather touch membrane keyboard for Power, Mode, Program and Footswitch selection etc. for easy operation of Machine.
2. User programmable 99 memory locations.
3. Can Seal up to 7mm Vessels.
4. 5 Different ligation levels for different Vessel Thickness.
5. 2 Different Fast Ligation Levels for Faster Sealing Cycle.
6. Faster Sealing Cycle with Less Thermal spread.
7. Isolated Monopolar & Bipolar outputs.
8. Simultaneous Coagulation for 2 surgeons in Monopolar mode.
9. Monopolar outputs can be activated via Handswitch and Footswitch.
10. Special EndoCut mode for Polypectomy & Papillotomy.
11. 9 levels are given in Endocut to achieve varying speed, depth & sharpness of the cut.
12. Auto-Stop in Bipolar & Monopolar for optimum coagulation effect.
13. Digital volume control and audio-visual indications for all outputs.
14. Restoration of previous activated power settings.
15. Reduced R.F distortion due to noiseless performance.
16. User Settable Auto start delay in Bipolar.
17. User settable maximum RF activation Timeout limit.
18. Instant power response against the tissue density & impedance variation & Adjust Power.
19. PPCM monitors Split/Non-Split type patient plates and deactivates output power with audio-visual alarm during improper contact between patient and patient plate to eliminate the risk of site burns.
20. Using Alan's 3 pedal footswitch Monopolar and Bipolar can be operated without changing any settings in the machine.
21. 3 Pedal Footswitch is explosion proof and water proof.
22. Compatible with Wireless Footswitch.
23. Well suited for Underwater (TURP), Micro, Major, Gynaec, General and all other Surgeries
24. Upgradable to Argon beam coagulator*
25. Maximum output of 400 Watts.

TECHNICAL SPECIFICATIONS

MONOPOLAR CUT

Pure	: 400 Watts/300 Ohms
Low Cut	: 300 Watts/300 Ohms
Blend	: 250 Watts/300 Ohms
Endocut	: 200 Watts/300 Ohms@EC9 Variable Duty cycle up at 9 Levels

MONOPOLAR COAG

Spray	: 120 Watts/500 Ohms
Fulgurate/Force	: 150 Watts/500 Ohms
Desiccate	: 120 Watts/500 Ohms
Soft	: 120 Watts/150 Ohms
Auto Desiccate	
Auto Soft	

BIPOLAR

Cut	: 120 Watts/100 Ohms
Force	: 100 Watts/100 Ohms
Micro	: 100 Watts/100 Ohms
Auto-Stop	: 40 Watts, Max.
Auto-Start	: 40 Watts, Max.
Scal-Cut	: 5 Levels

VESSEL SEALING

Ligate	: 5 Levels
F-Ligate	: 2 Levels



ONLY PERFORMANCE
MATTERS...
...NOT SIZE



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EASY-360 L+

MICROCONTROLLER BASED DIGITAL
ELECTROSURGICAL UNIT

Alan's electrocautery unit (Diathermy) is designed with latest miniature electronic circuit design technology. The advanced microcontroller based technology helps in achieving the desired tissue effects. It is Small in Size but Surprises on Performance.

+ SAFETY

- | Patient Plate Contact Quality Monitoring System.
- | HF leakage monitoring & controlling systems.
- | Real-Time Tissue impedance monitoring for power control.
- | Power up Self-Test to ensure the unit healthiness.
- | Handswitch and Footswitch short detection during Self-Test.
- | Multiple microcontroller supervision for RF power accuracy.

+ RELIABILITY

- | Built in line filter protects from voltage surges and bad line conditions hence no need to use Spike Buster.
- | No need of voltage stabilizer, can work in lower voltage.
- | Works on Generator, Inverter & UPS.
- | Convection Cooling System offers better Reliability.
- | Alan's proven track record for more than 20 years.

GENERAL FEATURES

1. Feather touch membrane keyboard for Power, Mode, Program and Footswitch selection etc. for easy operation of Machine.
2. Isolated Monopolar & Bipolar outputs.
3. Coagulation in Monopolar Mode.
4. Monopolar outputs can be activated via Handswitch and Footswitch.
5. Digital volume control and audio-visual indications for all outputs.
6. Timeout function.
7. Restoration of previous activated power settings.
8. Multiple microcontrollers' supervision automatic diagnosis enables instant power response against the tissue density & impedance variation and Adjust Power.
9. Built with Return Electrode/Patient Plate Contact Quality Monitoring System.
10. PPCM monitors Split/Non-Split type patient plates and deactivates output power with audio-visual alarm during improper contact between patient and patient plate to eliminate the risk of patient burns.
11. Using Alan's 3 pedal footswitch Monopolar and Bipolar can be operated without changing any settings in the machine.
12. 3 Pedal Footswitch is explosion proof and water proof.
13. Well suited for Underwater (TURP), Micro, Major, Gynaec, General and all other Surgeries.
14. Maximum output of 400 Watts.

+ CLINICAL BENEFITS

MONOPOLAR CUTTING

- | **Pure** : Monopolar Cut mode is for Underwater (TURP) and General Surgeries.
- | **Low Cut** : Mode specifically tailored for Laparoscopy
- | **Blend** : Cutting with Coagulation effect

MONOPOLAR COAGULATION

- | **Spray** : Impulse modulated sinuous waveform for not-contact Coagulation and (TURP) Underwater Procedures.
- | **Fulgurate/Force** : A low spray waveform suitable for non-contact coagulation on oozing surfaces and (TURP) underwater coagulation
- | **Desiccate** : Standard Coagulation Mode

BIPOLAR

- | **Cut/Mandard** : Best coagulation mode when used with graspers. especially designed for Bipolar Scissors
- | **Forta/Macro** : Faster Bipolar Coagulation

RF OUTPUT CHARACTERISTICS

MONOPOLAR CUT

- | **Pure** : 400W @ 300 Ohms
- | **Low Cut** : 300W @ 300 Ohms
- | **Blent** : 250W @ 300 Ohms

MONOPOLAR COAGULATION MODES

- | **Spray** : 120W @ 500 Ohms
- | **Fulgurate/Force** : 150W @ 500 Ohms
- | **Desiccate** : 120W @ 500 Ohms

BIPOLAR MODES

- | **Cut/Standard** : 125W @ 100 Ohms
- | **Force/Macro** : 100W @ 100 Ohms
- | **Micro/Precise** : 100W @ 100 Ohms
- | **Auto Bipolar** : auto start & auto stop

INPUT SUPPLY

- | **Input Supply** : 230VAC $\pm$ 20% 50Hz
- | **Power Consumption** : 750VA Max
- | **Loading Duty Factor** : 10Sec (Active)
: 30Sec (Pause)
- | **Input Fuse** : 5AT
- | **Output Control** : Digital Display, Push buttons in all Modes.

SAFETY STANDARDS

- | **Basic Construction** : Accordance with IEC 60601-1, IEC 60601-1-2 & IEC 60601-2-2
- | **Protection Class** : 1
- | **Unit Type** : CF
- | **All Outputs** : Floating Outputs
- | **Balancing** : Indicated by Symbol
- | **Weight** : 4.2kg.
- | **Size (in mm)** : 310 (W) x 150 (H) x 350 (D)

* Optional Feature

| Specifications are subject to change due to continual Development & upgradation
| ESU is Also Popularly Known as E. S. Diathermy & E.S. Cautery

ONLY PERFORMANCE
MATTERS...
...NOT SIZE



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E-LITE

MICROCONTROLLER BASED DIGITAL
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+ SAFETY

- | Patient Plate Contact Quality Monitoring System.
- | HF leakage monitoring & controlling systems.
- | Real-Time Tissue impedance monitoring for power control.
- | Power up Self-Test to ensure the unit healthiness.
- | Handswitch and Footswitch short detection during Self-Test.
- | Multiple microcontroller supervision for RF power accuracy.

+ RELIABILITY

- | Built in line filter protects from voltage surges and bad line conditions hence no need to use Spike Buster.
- | No need of voltage stabilizer, can work in lower voltage.
- | Works on Generator, Inverter & UPS.
- | Convection Cooling System offers better Reliability.
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GENERAL FEATURES

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10. PPCM monitors Split/Non-Split type patient plates and deactivates output power with audio-visual alarm during improper contact between patient and patient plate to eliminate the risk of patient burns.
11. Using Alan's 3 pedal footswitch Monopolar and Bipolar can be operated without changing any settings in the machine.
12. 3 Pedal Footswitch is explosion proof and water proof.
13. Well suited for Underwater (TURP), Micro, Major, Gynaec, General and all other Surgeries.
14. Maximum output of 300 Watts.

+ CLINICAL BENEFITS

MONOPOLAR CUTTING

- | **Pure** : Monopolar Cut mode is for Underwater (TURP) and General Surgeries.
- | **Low Cut** : Mode specifically tailored for Laparoscopy
- | **Blend** : Cutting with Coagulation effect

MONOPOLAR COAGULATION

- | **Fulgurate/Force** : A low spray waveform suitable for non-contact coagulation on oozing surfaces and (TURP) underwater coagulation
- | **Desiccate** : Standard Coagulation Mode

BIPOLAR

- | **Cut/Mandard** : Best coagulation mode when used with graspers. especially designed for Bipolar Scissors
- | **Forta/Macro** : Faster Bipolar Coagulation

RF OUTPUT CHARACTERISTICS

MONOPOLAR CUT

- | **Pure** : 300W @ 300 Ohms
- | **Low Cut** : 200W @ 300 Ohms
- | **Blent** : 100W @ 300 Ohms

MONOPOLAR COAGULATION

- | **Fulgurate** : 100W @ 500 Ohms
- | **Desiccate** : 100W @ 500 Ohms

BIPOLAR

- | **Cut/Standard** : 80W @ 100 Ohms
- | **Force/Macro** : 80W @ 100 Ohms

INPUT SUPPLY

- | **Input Supply** : 230VAC $\pm$ 20% 50Hz
- | **Power Consumption** : 500VA Max
- | **Loading Duty Factor** : 10Sec (Active)
: 30Sec (Pause)
- | **Input Fuse** : 3.15AT
- | **Output Control** : Digital Display, Push buttons in all Modes.

SAFETY STANDARDS

- | **Basic Construction** : Accordance with IEC 60601-1, IEC 60601-1-2 & IEC 60601-2-2
- | **Protection Class** : 1
- | **Unit Type** : CF
- | **All Outputs** : Floating Outputs
- | **Balancing** : Indicated by Symbol
- | **Weight** : 3.2kg.
- | **Size (in mm)** : 310 (W) x 150 (H) x 280 (D)

* Optional Feature

| Specifications are subject to change due to continual Development & upgradation
| ESU is Also Popularly Known as E. S. Diathermy & E.S. Cautery

ALTRASCAL

ULTRASONIC SURGICAL GENERATOR



QUALITY, PERFORMANCE
AND DURABILITY

FEATURES

Advanced Ultrasonic Energy Surgical System with High Performance

Universal Connector with Automatic Instrument Recognition

High-resolution 5" LCD display with wider viewing angles at a glance

Touch screen for easy setup, operation, and on-screen diagnostics

Intuitive Design, Compact, Lightweight and easy to carry in OR

Energy delivered via high-frequency vibrations of ~55,000 times per second

Minimal lateral thermal tissue damage, with Tissue Impedance Monitoring



**HIGH
PERFORMANCE**



**ULTRASONIC
ENERGY**



SAFE



**SERVICE
& CARE**



ALTRASCAL

ULTRASONIC SURGICAL GENERATOR

TECHNICAL SPECIFICATIONS

Main Fuses	T5AL 250 V (Time-delay 5 Amp. Glass Body, 5x20mm Package size, Quantity 2)	
Degree of protection against electric shock	Type CF applied part consisting of the SECUTE instrument	
Class of protection against electric shock	Class 1	
Ingress protection ALTRASCAL® generator	IP 21	
Ingress protection ALTRASCAL® footswitch	IP 68	
Display	5 LCD Touch Screen Display	
Main Input	88-285 V AC, 50/60 Hz, 200 VA	
Output	SECUTE® Output: 150 VAC RMS maximum 35 watts continuous, 55.5 kHz	
Ambient Operating Conditions	Temperature	10°C to 40°C
	Humidity	10% to 90% non-condensing
	Atmospheric Pressure Range	600 hPa to 1200 hPa
Transport and Storage Conditions	Temperature	-35°C to 55°C
	Humidity	10% to 95% non-condensing
	Atmospheric Pressure Range	600 hPa to 1200 hPa
Weight	Generator	Max. 4 kg
	Footswitch	Max. 1 kg
Overall Dimensions	Generator	335 mm X 395mm X 150 mm
	Footswitch	350 mm X 175 mm x 65 mm

WARRANTY OVERVIEW

Manufacturer Warranty Coverage (covers repair and standby equipment costs)

Product	Warranty Duration
ALTRASCAL Generator and Power Cord	2 Years
Wireless ALTRASCAL® Footswitch	2 Years
Hand Piece/ Transducer	12 Months/ 99 Usages (whichever earlier)

* Preventive maintenance and output verification not included.

* Wireless ALTRASCAL Footswitch battery not covered under warranty.

* Warranty Ex-Works





ORDERING INFORMATION

ASGEN01	ALTRASCAL™ Generator
ASTHP01	ALTRASCAL™ Transducer/Hand Piece
AS0140S	SECUTE™ Ultrasonic Shear for Open Surgery, 14 cm
AS0230S	SECUTE™ Ultrasonic Shear for Open Surgery, 23 cm
ASL360S	SECUTE™ Ultrasonic Shear for Laparoscopic Surgery, 36 cm
ASL450S	SECUTE™ Ultrasonic Shear for Laparoscopic Surgery, 45 cm
3PWFS-A	Wireless ALTRASCAL™ Footswitch



SOLE DISTRIBUTOR



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