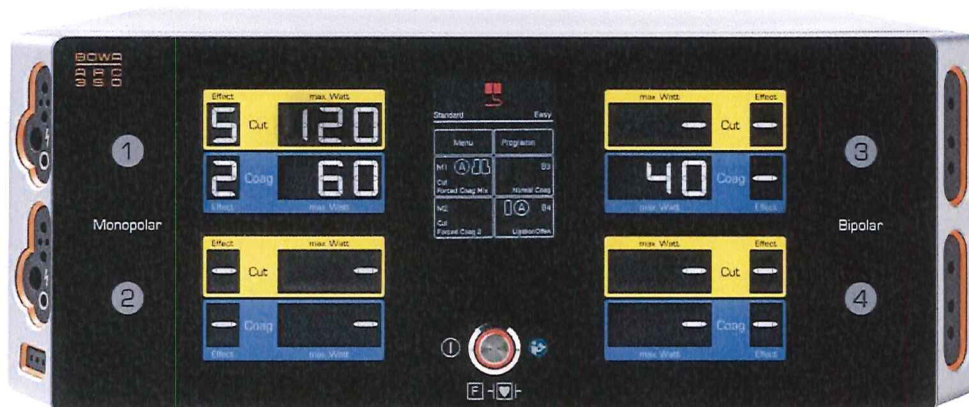


900-351 Electrosurgical unit ARC 350



**Intended use**

The HF unit is exclusively designed to generate electric power for monopolar and bipolar cutting and coagulation of tissue in surgical procedures.

**Technical specifications**

Insulation type / Classification	
EMC	IEC 60601-1-2
Level of protection provided by the housing	IP 21
Protection class according to EN 60601-1	I
Application component type according to EN 60601-1	CF
Standards compliance	IEC 60601-1: 2005, IEC 60601-1-2:2007, IEC 60601-2-2: 2009, ISO 14971: 2007 ISO 13485: 2003 + Cor.1 2009
Classification according to EC Directive 93/42/EEC	IIb

Power connection	(220 V – 240 V)	(110 V – 115 V)
Input voltage	100 – 120 V / 220 – 240 V (+/- 10 %)	
Input voltage range	198 V - 264 V	90 V – 130 V
Mains frequency	50 / 60 Hz	
Power consumption in standby mode	3 W / 40 VA	
Current consumption in standby mode	200 mA	400 mA
Maximum power consumption	(at 350 W) 700 W / 1150 VA	(at 350 W) 700 W / 1150 VA
Maximum current consumption	(at 350 W) 5 A	(at 350 W) 10 A
Line fuses	2 x 5 A slow-blow	2 x 10 A slow-blow
Terminal for potential equalization	Yes	

Dimensions and weight	
Dimensions	430 x 180 x 475 mm
Net weight	12,5 kg
Packaging information /dimensions	Carton 685 x 497 x 280 mm
Gross weight	18 kg

Programs	
Number of programs in the device	350
Default programs, factory set	Yes
Individually programmable	Yes
Information shown on the display	Yes

Neutral electrode monitoring	
EASY (Electrode Application System)	Yes
Display indication of one-piece or split or Baby electrode	Main and neutral electrode menu
Contact resistance between individual sections of split neutral electrodes shown on display	Using colour and contact indicator
Lead resistance shown on the display when a non-split neutral electrode is used	Yes
Maximum allowable resistance between the sections of a split electrode	300 $\Omega$
Warning signal for hazardous conditions concerning neutral electrode	Visual, acoustic
Tones	Warning, activation, key, starting sound
Warning message on the display	Text message with further information

Safety features	
ISSys (Integrated Safety System)	Yes
Spark regulation	ARC CONTROL
Continuous monitoring of HF leakage current and fault indication	Text message with further information
Dosage monitoring with fault indication on the display	Yes
Continuous self-test	Yes
Continuous status indication on the display	Yes
Operating errors shown on the display	Text message with further information
System faults shown on the display	Text message with further information
Technical Safety Inspection (TSI)	Automatic memory function (optional)
Operating manual	Paper, USB-Stick incl. PDF

Documentation	
Data acquisition and storage in the device	System information
Documentation of fault states	Yes
Documentation of operating errors	Yes
Retrieval of system information via the display	Text message with further information

Communication	
Display	Capacitive touchscreen 3,5" TFT display, 4 LCD displays, 7 PCT keys
External interface for communication of HF generator and ARC PLUS	Light wire cables
USB interface for software updates	Yes
External PC interface for service support using BOWA software	CAN / UART

Service support	
Network port for service support	Yes
Service support by service programs integrated in the device	Yes
Service support via ISSys	Yes

Cooling	
Convection	Yes
Temperature-controlled fan	Yes

Duty factor	
Duty factor	Intermittent 10 s / 30 s (on / off)

Characteristics	
Max. CUT power	350 W (at 500 $\Omega$ )
Max. COAG power	350 W (at 25 $\Omega$ )
Output frequency	350 kHz / 1 MHz
Monopolar sockets	2x (footswitch and finger switch)
Bipolar sockets	2x (footswitch and finger switch)
Connection for footswitch	2x
AUTOSTART	Yes
Options	Bipolar Resection M098-900395, LIGATION M098-900396, GastroCut M098-900391
Indication	Options incl. Plug'n Cut COMFORT instrument identification
Scope of delivery	Incl. operating manual, mains cable, PE-line

Compatibility	
Permitted combinations	ARC PLUS (900-001), footswitch (901-031, 901-032, 901-011)

Conditions of operation, transport and storage	Operation	Transport and storage
Temperature	+10°C to +40°C	-20°C to +50°C
Relative humidity	30 to 75%, non-condensing	0 to 90%, non-condensing
Atmospheric pressure	700 to 1060 hPa	500 to 1060 hPa
Operating altitude (max.)	4000 m above sea level	

## Current types

Description	CCS	ARC CONTROL	Form of HF voltage	Max. power output		Peak voltage	Default values	
				Effect	Power range		Effect	Max. Watt
<b>Monopolar Modes Cutting</b>								
Standard	Yes	Yes	sinusoidal constant	1	1 W - 350 W	400 Vp	5	100
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
Micro	Yes	Yes	sinusoidal constant	1	1 W - 50 W	280 Vp	5	20
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
Dry	Yes	Yes	sinusoidal modulated	1	1 W - 200 W	1,4 kVp	5	100
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
Argon	Yes	Yes	sinusoidal constant	1	1 W - 300 W	400 Vp	5	100
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
Resection	Yes	Yes	sinusoidal constant	1	250 W	650 Vp	2	---
				2				
				3				
				4				
				5				
MetraLOOP	Yes	Yes	sinusoidal constant	1	100 W 150 W 200 W	650 Vp	1	---
				2				
				3				
Laparoscopy	Yes	Yes	sinusoidal constant	1	1 W - 200W	400 Vp	5	100
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
GastroLOOP 1	Yes	Yes	Sinusoidal alternating Coag, Cut and break phases	1	-	750 Vp	5	---
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
GastroLOOP 2	Yes	Yes	Sinusoidal alternating Coag, Cut and break phases	1	-	750 Vp	5	---
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
GastroLOOP 3	Yes	Yes	Sinusoidal alternating Coag, Cut and break phases	1	-	750 Vp	5	---
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				

Description	CCS	ARC CONTROL	Form of HF voltage	Max. power output		Peak voltage	Default values	
				Effect	Power range		Effect	Max. Watt
<b>Monopolar Modes Cutting</b>								
GastroKNIFE 1	Yes	Yes	Sinusoidal alternating Coag and Cut phases	1 2 3 4 5 6 7 8 9	-	650 Vp	5	---
GastroKNIFE 2	Yes	Yes	Sinusoidal alternating Coag and Cut phases	1 2 3 4 5 6 7 8 9	-	650 Vp	5	---
GastroKNIFE 3	Yes	Yes	Sinusoidal alternating Coag and Cut phases	1 2 3 4 5 6 7 8 9	-	650 Vp	5	---
<b>Monopolar Modes Coagulation</b>								
Moderate			sinusoidal constant	1 2 3	1 W - 120 W	250 Vp	2	60
Forced coag			pulsed modulated	-	1 W - 80 W	3,5 kVp	---	50
Forced mixed			sinusoidal modulated	1 2 3	1 W - 120 W	2,3 kVp 2,5 kVp 2,8 kVp	2	60
Forced cutting			sinusoidal modulated	1 2 3 4	1 W - 250 W	1,5 kVp 1,5 kVp 1,3 kVp 1,3 kVp	2	80
Spray			pulsed modulated	1 2 3 4	1 W - 120 W	3,0 kVp 3,8 kVp 4,6 kVp 5,0 kVp	2	80
Argon open			pulsed modulated	-	1 W - 120 W	4,6 kVp	---	80
Argon flexible			pulsed modulated	-	1 W - 120 W	4,4 kVp	---	40
Argon flex. pulse			pulsed modulated	1 2 3	1 W - 80 W	4,4 kVp	2	20
Resection			sinusoidal modulated	-	1 W - 120 W	2,6 kVp	---	60
Cardiac Mammary			sinusoidal modulated	-	1 W - 60 W	2,3 kVp	---	15
Cardiac Thorax			sinusoidal modulated	-	1 W - 100 W	2,3 kVp	---	40
SimCoag			sinusoidal modulated pulsed modulated pulsed modulated	1 2 3	1 W - 120 W	1,5 kVp 2,3 kVp 4,6 kVp	2	60

Description	CCS	ARC CONTROL	Form of HF voltage	Max. power output		Peak voltage	Default values	
				Effect	Power range		Effect	Max. Watt
<b>Monopolar Modes Coagulation</b>								
Gastro Coag			sinusoidal modulated	1 2 3	1 W - 50 W	2,3 kVp 2,6 kVp 3,1 kVp	2	15
Laparoscopy			sinusoidal modulated	-	1 W - 120 W	1,8 kVp	---	60
<b>Bipolar Modes Cutting</b>								
Standard	Yes	Yes	sinusoidal constant	-	1 W - 200 W	400 Vp	---	100
Bipolar Resection	Yes	Yes	sinusoidal constant	1 2 3	250 W	500 Vp	2	---
Bipolar Scissors			sinusoidal constant	-	1 W - 120 W	200 Vp	---	40
<b>Bipolar Modes Coagulation</b>								
Forceps Standard			sinusoidal constant	-	1 W - 120 W	150 Vp	---	40
Forceps Standard AUTOSTART			sinusoidal constant	-	5 W - 120 W	150 Vp	---	40
Forceps Micro			sinusoidal constant	-	0.1 W - 20 W	150 Vp	---	10
Forceps Forced			sinusoidal modulated	-	1 W - 100 W	550 Vp	---	70
LIGATION			sinusoidal modulated	-	200 W	190 Vp	---	---
TissueSeal PLUS			sinusoidal modulated	-	200 W	190 Vp	---	---
Bipolar Scissors			sinusoidal constant	-	1 W - 120 W	200 Vp	---	40
Laparoscopy			sinusoidal constant	-	1 W - 120 W	150 Vp	---	50
Bipolar Resection			sinusoidal constant	-	1 W - 350 W	190 Vp	---	200

				Prep.	Date	Name	<b>M098-900351</b>	
				TE	24.02.2014	Müller		
				TL	PM	QM		
<b>Index</b>	<b>No. of Change</b>	<b>Date</b>	<b>Name</b>	<b>BOWA</b> <small>EINFACH SICHER</small> BOWA-elektronik GmbH & Co. KG Heinrich-Hertz-Strasse 4-10 72810 Gomaringen Telefon +49 (0) 7072 6002 0 Telefax +49 (0) 7072 8719			<b>Specification</b>	<b>EN</b>