



TECHNICAL DATA SHEET

GMIEZ0901

ANITA bonding console

► DESCRIPTION

The ANITAs are recognized worldwide by MROs (MRO - maintenance, repair & overhaul) and aircraft constructors as the most appropriate equipment for the repair by bonding of high performances aircraft structures. The console is conceived as portable, light, handy for field application and their operations have been optimized to be extremely simple to use.

ANITA provides a new revolutionary way to conduct advanced bonding operations. This version with a Touch Screen Panel offers easy operative procedures; several functions are made now possible for adaptive process control together with quality document elaboration and innovative training information.

► TOUCH SCREEN PANEL OPERATIONS

The ANITA is equipped with a large touch screen panel. A sophisticated software allows easy operations for:

- Programming easily simple and elaborated cycles
- Immediate Start of Cycles
- Process Supervision with graphical and tabulated presentations
- Interactive selection of temperature control modes
- Selection of innovative functions



► ADVANCED PERFORMANCES

In a small compact box, the ANITA gathers all the necessary functions to control the bonding heating process under vacuum for a repair on composites or metal structures.

It is specially conceived to reach maximum performances on small and large surfaces, on thin and thick structures and on structures with differentiated thermal reaction.



Large touch screen (160 x 125 mm) displays make it easy for the operator

► MAIN FUNCTION

- Heat control on two independent channels for 1 repair with 1 or 2 heating zones or 2 separate repairs
- Innovative third channel for heat losses compensation on the bag or around the patch
- Large heating capacity with 6000 watts/220 Volts
- Bag vacuum sensing for repair qualification; 2 sensors installed
- Panel Printer
- Touch screen panel for:

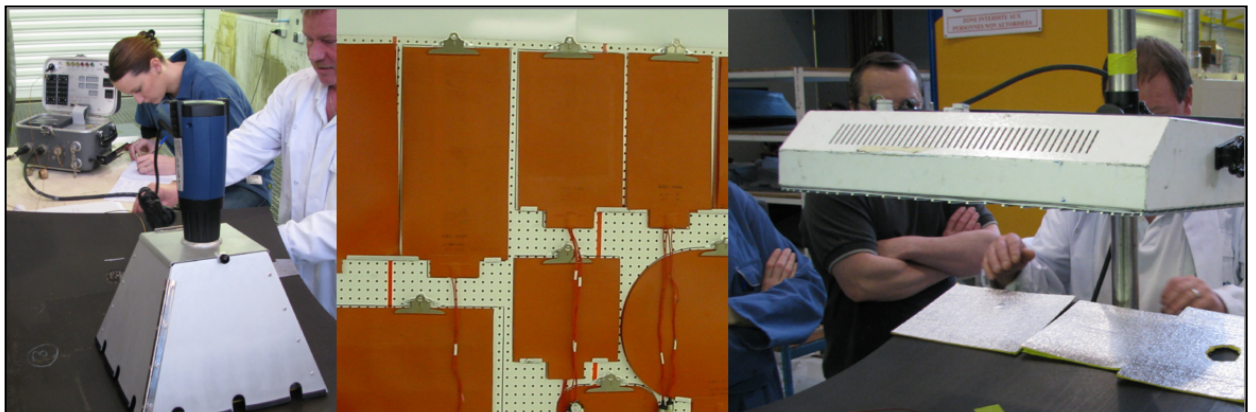
- easy programming
- start cycle
- graphic supervision
- active control mode selection
- calibration
- quality control report
- heat blanket testing

- Blanket power check and detection of shorts
- Built in electronic safety circuits.
- Large memory storage capacity for cycle data
- USB connections: 2 ports
- Transfer of data to a USB key
- Automatic reporting under pdf
- Calibration made easy by dialogue and software tuning operations

► HEATING SYSTEMS

The ANITA can drive, without any other circuit turning, various heating systems like:

- Heat blankets
- Radiant panels (GMIWRP-01M-2)
- Hot air blowers for drying of the repaired patch (GMIET010)



Hot air blower, heating blankets, radiant panels

► OTHER SPECIAL FEATURES:

- An extra third output power channel (230 Volts or 120 Volts - 3 Amp) for cold area heating
- Test of presence of blanket; measurement of power of blanket in the range 200 to 6000 watts
- Watch dog and safety associated circuits for safe operations.
- Dialogues in English, French, Spanish, German, Italian, Russian, Chinese, Japanese selectable
- Units in °C and bars or °F and in of Hg selectable
- Thermocouple scanning capacity: type J or K (to be specified at the order), 12 plugs, with optional external extension up to 24 plugs
- 2 Vacuum electronic gauges on return hose from bag to qualify the actual vacuum in bag itself. This value is monitored permanently, displayed, printed, recorded





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- Printer with large standard paper
- Audible alarm, and Mimics for alarms and heat actions; seen from far
- Easy accessible external fuses
- All blanket cables come with special circular military connectors mounted for a high-quality coupling. Our blankets come also with same quality mating connectors.
- Software and electronic safety features
- 2 USB ports, for export of data to a USB key or support

► OVERVIEW

The repair model family offers both capabilities for workshop use as well as for flight line operations. Several models are now available with 1, 4, 6 or 18 heating zones according to the nature of part to be repaired.

| Characteristics | 4.0 | EZ | EZH | NG | QS2Z | EZ4Z | QS | Combat | QSH | 6Z40 |
|-----------------|---|---|---|--|---|---|---|---|---|---|
| Photo |  |  |  |  |  |  |  |  |  |  |
| Number of Zones | 2 zones | 2 zones | 2 zones | 2 zones | 2 zones | 4 zones | 1 zone | 1 zone | 1 zone | 6 zones |
| Zoning Control | Independent | Independent | Independent | Simultaneous | Simultaneous | Independent | Independent | Independent | Independent | Independent |
| TC (J or K) | 24 TC | 12 TC | 12 TC | 6 TC | 12 TC | 12 TC | 6 TC | 6 TC | 6 TC | 36 TC |
| Vacuum Sensing | 2 lines | 2 lines | 2 lines | 1 line | 0 line | 4 lines | 1 line | 1 line | 1 line | 6 lines |
| Venturi mounted | Optional | No | No | Yes | No | No | Yes | Yes | Yes | No |
| Printer | Optional | Yes | Yes | Yes | No | Yes | No | No | No | No |
| USB Ports | 4 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 |
| Voltage | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 120V/230V | 3~ 380/415V |
| Power | 32A | 32A | 32A | 32A | 32A | 32A | 32A | 32A | 32A | 60A |
| Touch Screen | Yes | Yes | Yes | No | Yes | Yes | Yes | No | Yes | Yes |
| Remote terminal | Integrated | None | None | None | None | None | None | None | None | None |
| Remote tablet | Optional | Optional | Optional | None | None | Optional | None | None | None | None |
| TC Scanner | N/A | Optional | Optional | None | None | Optional | None | None | None | None |
| Accessory Case | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Dimensions (cm) | 38x26x27 | 35x26x27 | 38x26x27 | 35x26x22 | 35x26x22 | 36x28x27 | 38x26x18 | 38x30x21 | 38x26x27 | 150x70x165 |
| Weight (kg) | 9 kg | 9 kg | 9 kg | 9 kg | 7.5 kg | 10.5 kg | 7 kg | 7 kg | 7.5 kg | ~ 100 kg |

► VERSION 1 ZONE

1. ANITA 1 ZONE QUICK START

Model 1 repair 1 heating zone with an exclusive software for Fully Automatic Control of Temperature Cycle.

Complete Model:

- 6 Thermocouples (J or K)
- 1 heating zone 30 Amp under 230 or 120 Volts
- Vacuum pump venturi included or not on request
- Vacuum sensing return line
- Screen for easy programming and actions
- Programs can be preregistered
- USB Key for data transfer and Automatic Reporting



2. ANITA 1 ZONE - QUICK START – ATEX FLIGHT LINE MODEL

Version **ATEX Flight Line** of the workshop model 1 repair 1 zone.

Complete Model:

- 6 Thermocouples (J or K)
- 1 heating zone 30 Amp under 230 or 120 Volts
- Vacuum pump venturi included or not on request
- Vacuum sensing return line
- Screen for easy programming and actions
- Programs can be preregistered - USB Key



| Reference | Description |
|------------------|---|
| GMIQS1Z | Bonding Console 1 Zone including its accessory set; the vacuum venturi pump is mounted |
| GMIQS1Z-P | Bonding Console 1 Zone including its accessory set; the vacuum venturi pump and a printer are mounted |
| GMIQSH1Z | Bonding console 1 zone quick start Version ATEX |

► VERSION 2 ZONE

1. ANITA EZ09 - 2 REPAIRS - 2 ZONES

The Anita EZ09 is designed with a Touch Screen Panel supported by a highly versatile dialogue Software. The ANITA comes with all its accessories necessary to implement a bonding operation under vacuum: a complete set of cables, hoses, in a nice storage and transportation console.

Console dimensions:

460 x 350 x 166 mm

Weight: 27 Lb. - 12 Kg

Content List:

- A Power cable: 1 unit, length 5 m
- Blanket cable: 2 units, length 3 m
- Vacuum Silicone Hoses: 2 units for return sensing, length 3 m
- 2 Vacuum Valves
- A heat compensation blanket (230 or 120 Volts) and its cable
- Thermocouple cables: 12 of 3 m long
- A first set of printer consumable
- A User and Service Manual



Metal case with accessories (left) and the Anita console (right)

| Reference | Description |
|--|---|
| GMIEZ0901 | Bonding console with touch screen 2 zones with its accessory case |
| GMIEZAC0901-V* *V= 1 for 120 Volts environment *V = 2 for 230 Volts environment | Accessory console delivered together with the Anita console as above; |
| GMIOTI010-01 | A box of 20 paper rolls (spares for printer) |
| GMIOTI010-02 | A box of 10 ink ribbons (spares for printer) |

For the vacuum generation for the Anita EZ, one can use an electrical vacuum pump **GMIWVP021** or a compressed air venturi pump as below.



| Reference | Description |
|--------------------|---|
| GMIOTPVV010 | Vacuum bag valve with a venturi pump mounted. This set can be easily mounted on the vacuum bag. Excellent flow. Delivered with its silencer. With standard male connector brand Staubli |
| GMIOTPVV011 | Vacuum bag valve with a venturi pump mounted, brand male connector US - Atlas Copco for compressed air input. |

To enrich the use of the Anita EZ09 in several contexts of work: very large repairs, use in hangars, positioned with recess access, GMI has developed two complementary instruments:

A) Scanner 12 TC - Extension of thermocouple channels proposed to extend the capacity of temperature measurement by connection of a scanner of Capacity 12 T/C.

Wireless linked to the Anita, the scanner can easily be positioned close to the repair and this is useful in case of difficult access, the Anita being positioned at distance:

- Capacity 12= 2 x 6 thermocouples J or K, engineered at the order



- Detected automatically by the Anita
- With this scanner, total capacity of Thermocouples handled by Anita is: 24 for 1 large repair or 12 Thermocouples per zone for a repair with 2 zones

B) Remote Control with a Screen Tablet:

We offer now the possibility to dialogue at distance with the Anita EZ through a latest technology WIFI linking the Anita to a remote Tablet.

This feature is unique to ease the work of the operator in field operations. Alarms are also transferred at distance visually on the

remote screen and loudly through a speaker.

| Reference | Description |
|---|---|
| GMIEZS012- J* *or K according to your choice | Scanner 12 TC – Thermocouple extension |
| GMIEZR010 | Tablet for remote control of Anita EZ09 |

2. ANITA MODEL EZH - FOR 2 REPAIRS – ATEX FLIGHT LINE

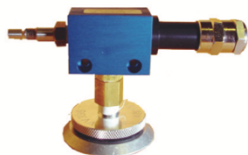


For conducting bonding on the aircraft if explosive proof conditions apply . This model is based on Model above.

Delivered complete with its accessory console including electrical cables, hoses, thermocouples, valves.

For the filtration of compressed air to vent the console in order to comply with regulation, see in the table filter against oil and water proposed for this model.

| Reference | Description |
|---------------------|--|
| GMIEZH1401 | ANITA EZH1401 Flight line model Version ATEX |
| GMIOTPF022 | Container for filter against oil and water with a filter installed (delivered with console above) (to be used for the internal air sweeping circuit) |
| GMIOTPF022-1 | For spare: filter cartridge against oil and water together |



3. ANITA NG9201 - 1 REPAIR 1 OR 2 ZONES

Two zone model for 1 advanced repair.

- 6 thermocouples
- Printer
- Vacuum venturi pump mounted
- Sensing of bag vacuum
- Immediate programming and run intuitive procedures
- Very robust for field operation
- Size: 350 x 220 x 220 mm, Weight 9 Kg
- Total Power 6000 Watts
- Anitalk PC software for supervision and data logging and reporting
- Delivered complete with its accessory case



| Reference | Description |
|---------------------|--|
| GMING9201 | Anita Bonding Console with its accessory case see specifications |
| GMIOTI010-01 | A box of 20 paper rolls for printer(valid for EZ and NG) |
| GMIOTI010-02 | A box of 10 ink ribbons for printer |

► ANITA 4 ZONES - UP TO 4 INDEPENDENT REPAIRS

Anita 4 zones with 4 independent heating channels for: 1 repair up to 4 zones or 4 repairs independent in program and time. This is an extension of our famous 2 zone version EZ09.

Useful for:

- Intensive repair on parts with multiple impacts
- Radome Repair
- When blankets have 3 to 4 zones
- Helicopter blade repair

Main specs:

- Temperature measurements: through thermocouples, type J or K according to choice at the order.
- Vacuum circuits: 4
- Total power capacity: 30 Amp x 230 Volts
- Each zone equipped with a power capacity of: 20 amps.
- USB connection



| Reference | Description |
|--------------------|--|
| GMIEZ4Z01 | Bonding console 4 Zones Useful for radome repair with its accessory case |
| GMIAB4Z16-2 | Option - of power extension for the GMIEZ4Z01 above up to 16KW - zones - for very large blankets – separate unit |

► ANITA 6 ZONES - HIGH POWER - 6 REPAIRS

As a bench, this model is for various applications from radome to reversers. Anita 6 zones with 6 independent heating channels for: 1 repair up to 6 zones or 6 repairs independent in program and time with various combination of zones.

This bench is powered under three phases to offer a large power capacity of: 40 Kwatt total power; each of 6 zones with a capacity of 230 Volts x 30 Amp.

Useful for:

- Intensive repair on parts with multiple impacts:
- Radome Repair
- Reverser repairs : Transcowls and Corecowls
- Complex repair when blankets have 3 to 4 zones,
- Helicopter blade repair
- 36 Temperature measurements: through thermocouples, type J or K according to choice at the order.
- Vacuum circuits: 6

This equipment allows also to conduct 6 independent repairs at different times according to different cycles



| Reference | Description |
|-------------------|-------------------------|
| GMI6Z40- V | Bonding console 6 Zones |

► ANITA 18 ZONES

To repair very large surfaces of structures of class a specific bonding control equipment with 18 zones has been designed.

This equipment combines a sophisticated instrumentation with smart software for cycle programming and configuration of the repair parameters. A power system is specially designed to offer powering capabilities to the 18 zones covering several square meters.

System with 18 zone capability. Power per zone 230 V x 20 Amp.



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Description:

- Up to 80 Thermocouples
- Up to 7 vacuum sensing lines
- Measurement of autoclave pressure in case of using a vessel for pressure compaction
- Automatic report fabrication

► TRAINING

We offer a wide range of programs for training to composite repair. For level I and II programs to specialised on job repair sessions (see technical data sheet: «Repair technologies training»).

► DEVELOPMENTS

If you need an assistance to adapt the consoles and the peripheral equipment to suit your specific needs, please consult us.

Several models are available to cover a large range of applications: shop use, flight line intervention (anti explosive proof model), with 4 heating zones, for very large areas like: reversers or radomes.

► NOTE

Please contact us for more detailed information as well as for system development according to your technical specification.

