



# TECHNICAL DATA SHEET

„LESLI“

Mobile workshop for mechanical treatment during repair  
made by GMI-AERO

## ► DESCRIPTION

Unit Mobile workshop «LESLI» includes full set of equipment, tools and attachments for core removal and repair coat lay out is used to realize all manufacturing repair operations, from skin stepping to patch manufacturing.

The set is the result of years of GMI AERO experience during repair works on work pieces and polymer composite materials. In order to offer for a customer integrated solution in preparation before bonding, special cutters, routers, templates included in the set are developed.



Photo 1: Complete mobile repair workshop



Photo 2: Surface machining tool attachments.  
operations



Photo 3: Routing, scarfing, stepping operations

► THE INNOVATIVE TOOL ATTACHMENTS:





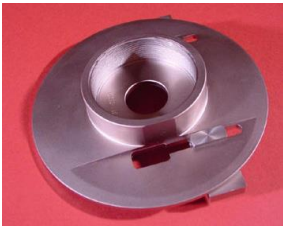
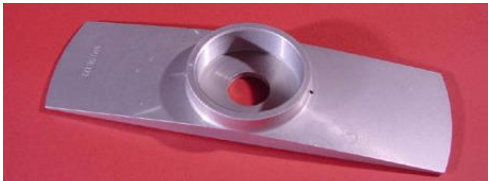



 <p>Depth Control</p>	 <p>Sanding with Depth Control</p>	 <p>Sanding with Depth Control</p>
 <p>Routing</p>	 <p>Chamfering; edge milling</p>	 <p>Sanding with Depth Control; two models for curved and very curved surfaces</p>
 <p>Sanding with Depth Control</p>	 <p>Set of Diamond cutters for routing, milling, stepping, scarfing, chamfering...</p>	 <p>Sanding with Depth Control (non developable surfaces)</p>

Table 1: Attachment tools and attributed functions

► STRUCTURES TO BE TREATED

Type	Material	Shapes
Sandwich	Carbon	Flat
Laminate	Glass	Curved / Slightly non developable

Table 2: Typology of structures



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## ► A COMPREHENSIVE KIT FOR ALL SURFACE PREPARATION STEPS

The innovative tools designed by GMI to offer the technician to face all possible tasks of a composite repair on an advanced carbon structure are gathered in a case. With tools, and necessary other selected accessories the repair phase preparation can be fully conducted.



Photo 4: The mobile repair workshop

## ► MACHINING WORK SCHEMES

The works are categorized to cover the typical schemes met in advanced carbon repair on aircraft structures: laminate cutting of polymer composite materials, chamfering, routing of sandwich surface or upper layer of monolithic laminate, stepping of damaged skin.

- Cutting of a carbon laminate doubler, chamfering the edges
- Routing of a sandwich skin or of a laminate box skin
- Easy control to remove the skin up to the adhesive or deeper
- Stepping ply by ply a carbon skin
- Scarfing with respect of a slope of 3 or 2° a carbon skin

## ► THE KIT WILL ALLOW TO PREPARE FULLY THE REPAIR PHASES:

- Remove the paint on the repair area
- Prepare the installation of the core and of the patch
- Dry the sandwich area after core removal with a foldable oven
- Rout and Step the skin
- Handle Wet Lay Up operations if any or the Prepreg cuts
- Manufacture the patch pre-cured or to be co-cured
- Install the patch and make the vacuum bag (heat blanket not provided).



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## ► USE OF TEMPLATES

The use of templates allow to work with full safety inside guides and with all the confidence which is lacking when working eye driven with other standard tools.

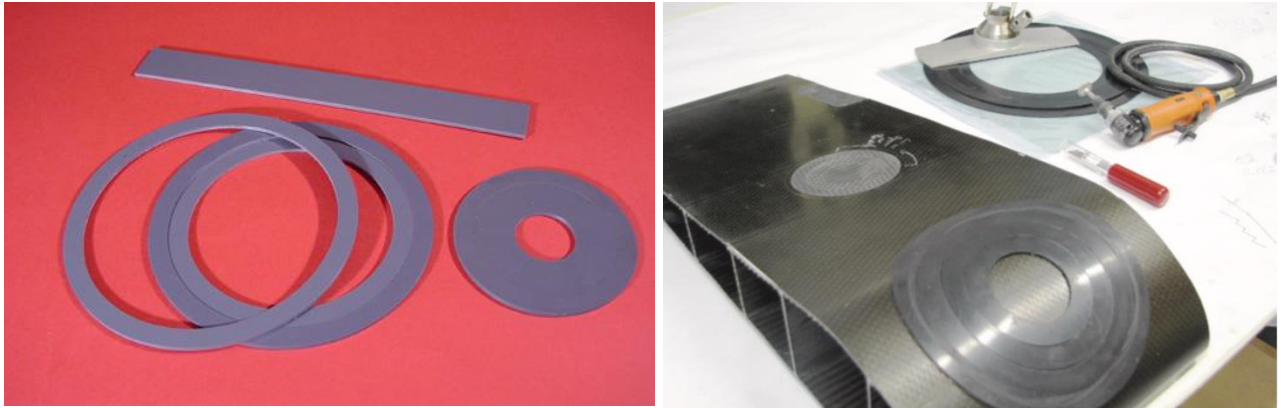


Photo 5: Templates

## ► DUST ASPIRATION AT THE SOURCE

Each tool attachment is equipped with a port to be connected by a quick coupling connector to a flexible hose for connection to a vacuum cleaner. For convenience a venturi vacuum cleaner is provided.

## ► CONSOLE COMPOSITION

To perform all the tasks of the repair, the Complete Mobile Workshop is composed of Five groups of elements.

Group 1: A selection of accessories to prepare the repair by paint removal, honeycomb cut, lamination of dry fabrics, cutting and assembly of patches. Routers and sanders are included.

Group 2: Pneumatic machines necessary for the work with Attachments from the group 1: one for routers and one for sanders.

Group 3: The innovative kit of Attachments. This kit comes with the necessary kit of diamond cutters and carbide cutters, templates. These cutters are conceived specially to achieve specific repair machining quality. A first set of templates is added. The pneumatic adapted vacuum cleaner is included.

Group 4: First hand set of bagging products state of the art.

Group 5: **(In Option)** A foldable oven for drying the sandwich area after core removal and before core installation or potting. The oven is useful to accelerate the potting curing; in some cases it can be used to heat the adhesive when. The oven temperature cycle is controlled by the ANITA Console. The oven is equipped with a specific heat gun.



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## ► TRANSPORTATION CONSOLE

The unit is packed in a special box with rollers, providing security during transportation and storage, as well as mobility of stuff, who makes repair.

Size: 1230 x 535 x 285 mm, weight: 30 kg.



Photo 6: Complete Mobile Repair Workshop

## ► TO ORDER

The Complete Mobile Workshop (without Group 5): P/N: GMIAT87B02-320

For a Restricted version limited to the innovative attachment and tools without accessories (groups above 2 and 3 ; 4 in option; without Group 5):

P/N: GMICRT9201

## ► NOTE

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