



GSE & TOOL USE AND MAINTENANCE MANUAL

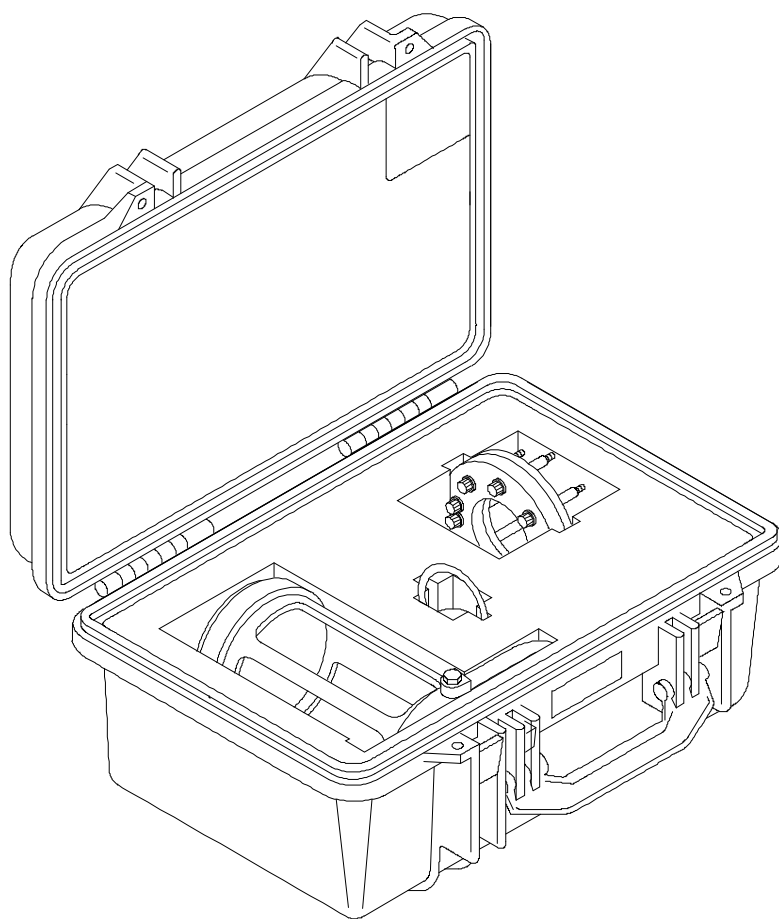
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REV. A

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GSE & TOOL MANUAL

TITLE

**TOOL KIT, MAST VIBRATION ABSORBER REM/INS
P/N 3G1805G01431**



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REVISION HISTORY

REV	CHANGE DESCRIPTION	DATE
A	First issue	08/10/2021

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1. SCOPE

1.1. APPLICABILITY

The contents of this document are meant to provide information on the P/N 3G1805G01431 TOOL KIT, MAST VIBRATION ABSORBER REM/INS.

1.2. OBJECT

The object of this document is to describe the AGE and its components, its main features and it will also provide all needed maintenance requirements to keep in service the P/N 3G1805G01431 TOOL KIT, MAST VIBRATION ABSORBER REM/INS.

1.3. WARNING AND SAFETY INSTRUCTIONS

A number of symbols are used throughout this document to indicate information to which the user should pay attention to. These are indicated below along with the specific meaning.




 Warning	...Indicates a danger that might arise from a product and might result in severe injuries or even death, if no precautions are taken.
 Caution	... Indicates a potentially dangerous situation, which might result injury or damage to the equipment.
 Notice	...Indicates a note providing information to help the reader during the procedure.

Table 1 – Warning Instruction

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2. DOCUMENTS

2.1. APPLICABLE DOCUMENTS

The following table lists the applicable documents

REF	REFERENCE OF DOCUMENT	TITLE
N.A.	N.A.	N.A.

Table 2 – Applicable Documents

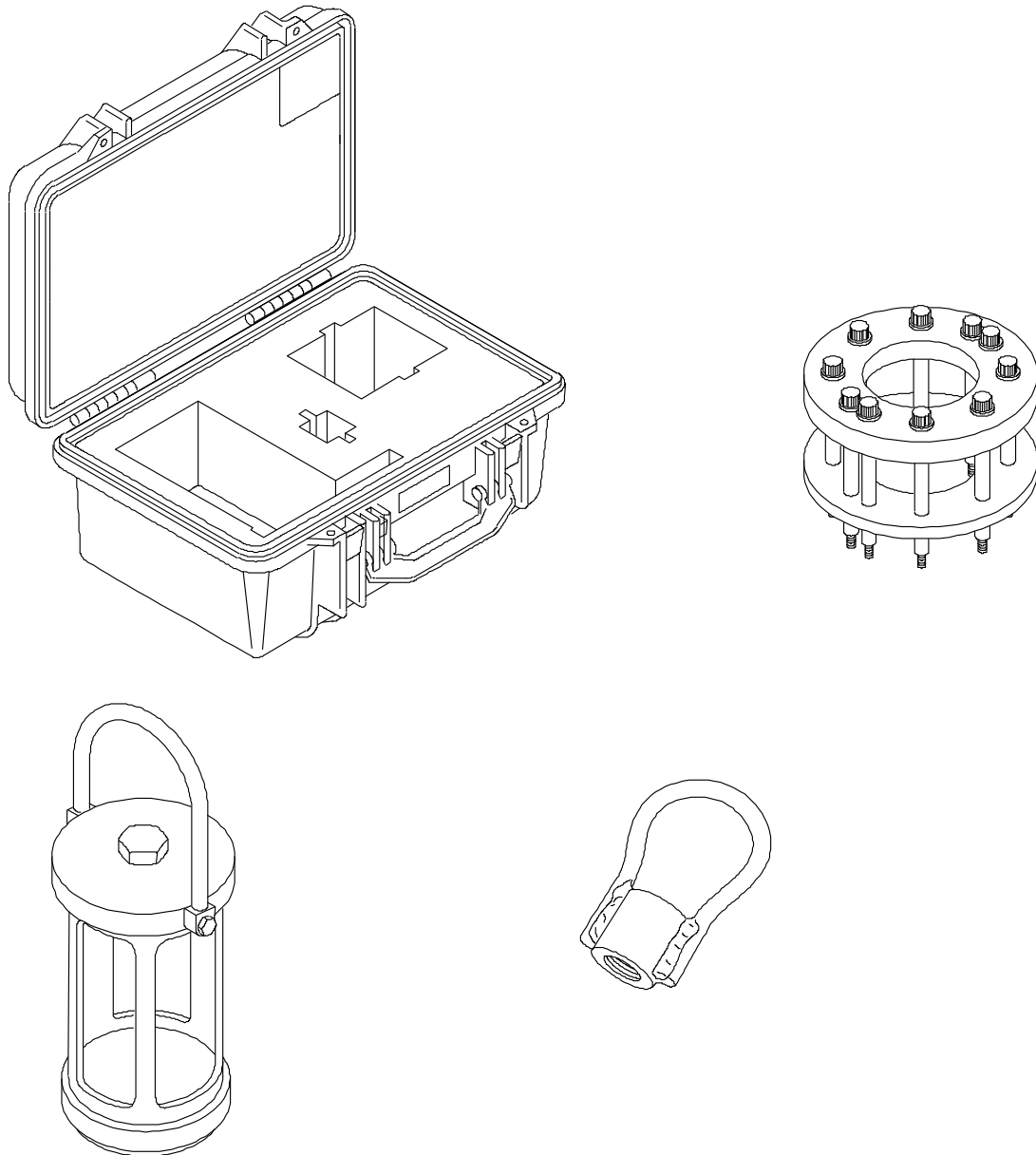
2.2. ACRONYMS USED

The main acronyms used in this document are listed below:

LHD	Leonardo Helicopter Division
HC	Helicopter
P/N	Part Number
S/N	Serial Number
N.A.	Not Applicable
MGB	Main Gearbox
MVA	Mast Vibration Absorber

3. DESCRIPTION

The tool kit is used to remove/install the Mast Vibration Absorber (MVA) kit from the helicopter.



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Figure 1 – Tool kit, mast vibration absorber rem/ins

4. TOP ASSEMBLY DRAWINGS

Refer to P/N 3G1805G01431 TOOL KIT, MAST VIBRATION ABSORBER REM/INS.

5. IDENTIFICATION

The tool identification P/N 3G1805G01431 is marked on the LHD identification tag.

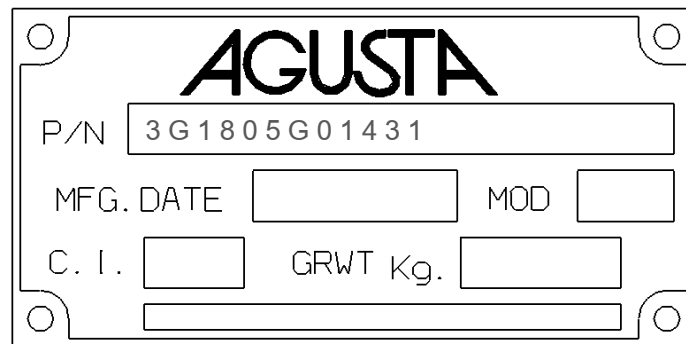


Figure 2 – LHD Identification tag with P/N

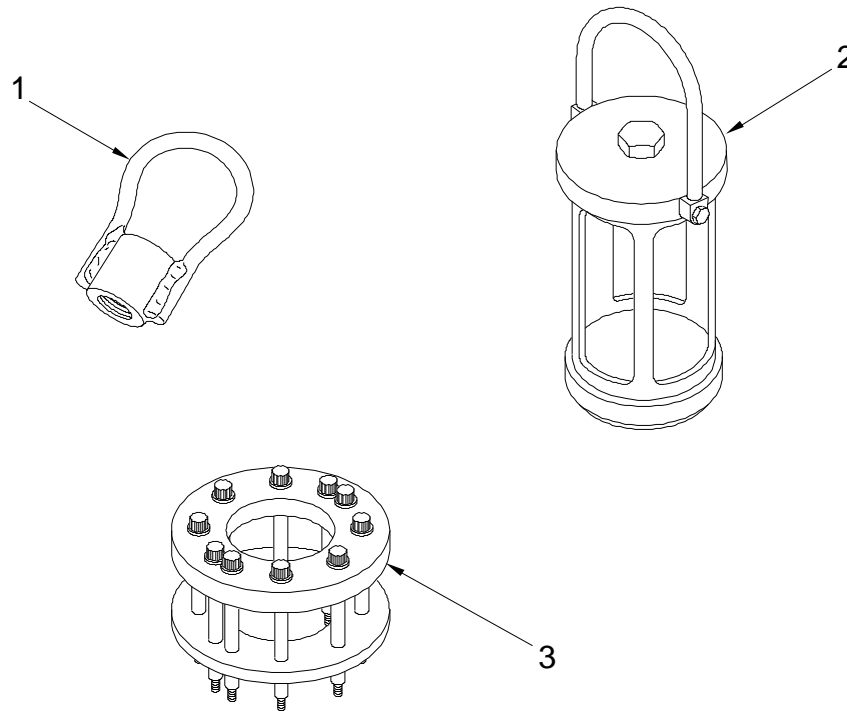
6. OVERALL DIMENSIONS

- Length: 525 mm
- Width: 435 mm
- Height: 216 mm

7. WEIGHT

- Total Weight: Not available.

8. MAIN PARTS



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Figure 3 – Main Parts

The main parts of the Tool kit, mast vibration absorber rem/ins are:

1. MVA lifting tool
2. MVA installation tool
3. MVA removal tool

9. MAIN FEATURES DESCRIPTION

The kit, supplied in a suitable transportation box, is composed of:

MVA lifting tool

This tool is used to lift the Mast Vibration Absorber partial assembly during the installation/removal procedures on the helicopter. It is used coupled to the conical rod end to lift the rod assy (without principal mass and calibrated weight installed), in order to perform the removal/installation procedures on the internal diameter of the MGB mast.

MVA installation tool

This tool is used to install the Mast Vibration Absorber partial assembly (without principal mass and calibrated weight), into the internal diameter of the MGB mast. It is used to perform the torque of the bolt coupled to conical rod end in order to apply a specific power strength to the rod assy, necessary to perform the correct installation.

MVA removal tool

This tool is used to remove the Mast Vibration Absorber partial assembly (without principal mass and calibrated weight), from the internal diameter of the MGB mast. It is used as a puller to remove the conical ring adapter in order to get the partial assembly freely removable.

10. WARNING AND SAFETY NOTES

10.1. WARNING NOTE







 Warning	Use this equipment only for the purpose that it is designed for. Any other use can result in injury or serious material damage to the components.
 Caution	
 Notice	The Manual can never integrally replace the adequate competence of the user.
 Warning	Before and after each use of the equipment is necessary to perform the checks required. Do not operate with a tool damaged or partially completed, or partially assembled.
 Caution	
 Notice	This Manual provides guidelines and instructions of the equipment that are in addition to - but are not intended to replace or modify but only to integrate - any general or specific rule, regulation, decree or law that is in force in the place where the equipment is in use.

Table 3 – Warning Note

10.2. SAFETY NOTES

Remember to wear protective overalls, safety shoes, protective gloves and glasses during all operational and maintenance phases.



Figure 4 – Safety Notes

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11. STORAGE

The Tool shall be properly stored to provide protection from external weather conditions, damage and dirty particles.

The Kit shall be stored in the dedicated transportation box (part of the Kit).

Ensure that the tool parts are clean before storage.

11.1. LUBRICATION BEFORE STORAGE

Apply the Grease (MIL-PRF-23827) on all threaded parts before tool storage.

11.2. STORAGE CONFIGURATION

The tool has no particular storage configuration.

12. MAINTENANCE

NOTE: Correct regular maintenance allows preventing most faults and safeguards of tool performance in time, thereby making it last longer.

Every year carry out regular maintenance on a regular basis as detailed in this manual.

NOTE: Inspection intervals for tool parts placed inside in ready storage is 12 months.

12.1. CLEANING

Before inspection and after each use, carry out the cleaning of the tool components.

12.1.1. SPECIAL TOOLS, FIXTURE AND EQUIPMENT

No special tools, fixture and equipment are required for cleaning.

12.1.2. PART REQUIREMENTS

The parts to clean should be free from the moisture, emulsified water, soaps and metal shavings that can develop of corrosive acids.

They must also be free from wide grease and / or slush deposits.

12.1.3. MANUAL CLEANING

- A. Clean thoroughly all metal surfaces with a clean lint-free cloth (Local supply) moistened with Cleaning Solvent (MIL-PRF-680C, Type II) to do general spot cleaning of large groups areas. For nylon or Teflon surfaces, the use of a biodegradable, water dilutable cleaning compound (MIL-PRF-87937 D, Type II) is required.
- B. Repeat the cleaning process again by means another clean lint-free cloth (Local supply).
- C. Drying.
 - Verify that the solvent should not be trapped in the cavity. Normally, the solvent evaporates at room temperature in a satisfactory manner.

12.2. CHECKS

Before and after each use or at least every year, carry out the check of kit component.

Before each use ensure that the manual is available to the operator, in the event of loss, request a copy to Leonardo Helicopters Division.

The Tool kit shall be submitted to following checks to guarantee the functionality.

All required checks shall be registered on CHECK RECORDS Table. Ref. *TLC_Table 1*

After each use of tool ensure to have registered the number of uses on HISTORICAL USES RECORD Table. Ref. *TLC_Table 2*

The Tool Log Card template contained in the Annex A of this manual can be replaced with any other log card template in use in the plant where the equipment is in use.

12.2.1. SPECIAL TOOLS, FIXTURE AND EQUIPMENT

No special tools, fixture and equipment are required for the checks.

12.2.2. VISUAL EXAMINATION

NOTE: Replace the parts that do not obey the inspection requirements.

Restore the marking of the parts that results damaged or not readable.

All required visual checks are listed on Table 4

PERIODICITY	CHECK TYPE	COMPONENTS	
BEFORE AND AFTER EVERY USE	VISUAL EXAMINATION	Evidence of impact;	All
		Crushing or stripping	All
		Cracks	All
		Dents	All
		Wear	All
		Distortions	All
		Corrosion	All
		Loose or defective attaching parts (warning flag)	All
		Unsticking of parts	Item 2, Plate, Figure 5 , page 15 Item 4, Nameplate, Figure 5 , page 15
		Damage to the threads	All threaded STD parts.
		Marking	All

Table 4 – Visual Check

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12.2.3. PERIODICAL CHECKS

Not Applicable.

12.2.4. DIMENSIONAL CHECKS

Not Applicable.

12.2.5. SPECIAL CHECKS SUMMARY

Not Applicable.

12.3. REPLACEMENT

All the parts for which it is allowed the components replacement are listed in Paragraph 15.

12.3.1. REPLACEMENT PROCEDURES

The replacement of parts of the kit does not require specific procedures.

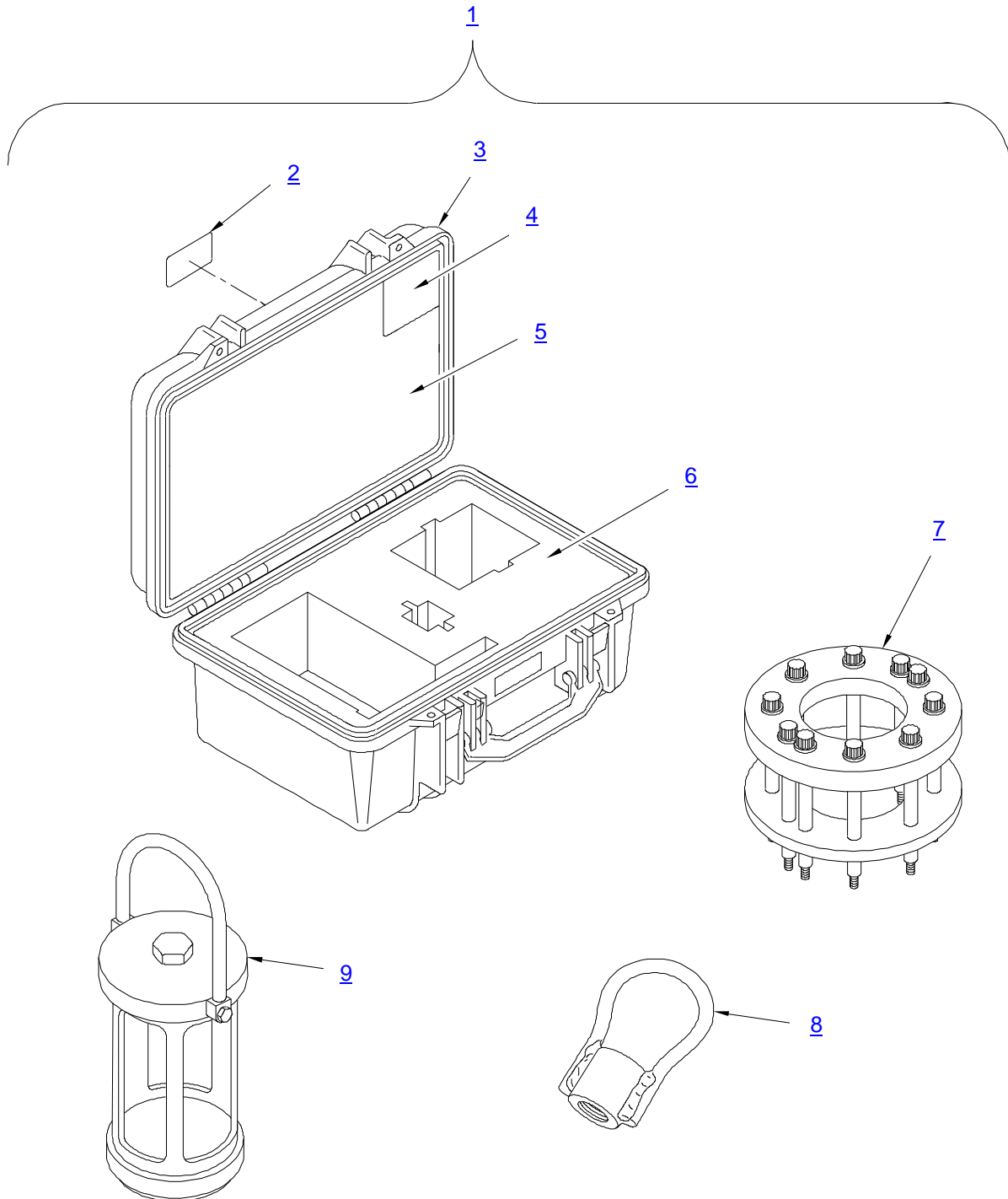
13. CALIBRATION

No Calibration is required.

14. SHELF LIFE

Not Applicable.

15. SPARE PARTS



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Figure 5 – Spare Parts

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ITEM	P/N	DESCRIPTION	Q.TY
1	3G1805G01431	TOOL KIT, MAST VIBRATION ABSORBER REM/IN	REF.
2	A304A001A1	PLATE, IDENTIFICATION	1
3	1550	CASE	1
4	3G1805G01951	NAMEPLATE	1
5	3G1805G02451	UPPER FOAM	1
6	3G1805G02351	LOWER FOAM	1
7	3G1805G01731	TOOL, MVA REMOVAL	1
8	3G1805G01531	HOISTING TOOL, MVA LIFTING	1
9	3G1805G01631	TOOL, MVA INSTALLATION	1

Table 5 – Spare Parts

16. CE MARKING

No CE marking is required for the P/N 3G1805G01431 TOOL KIT, MAST VIBRATION ABSORBER REM/INS.

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ANNEX A

TOOL LOG CARD



TOOL LOG CARD

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TOOL KIT P/N: [1]	TOOL KIT DESCRIPTION: [2]	TOOL KIT S/N: [3]
TOOL P/N: [4]	TOOL S/N: [5]	REMARKS: [6]

Section 1: CHECKS RECORD

[7] N° check	[8] DATE	[9] P/N TO CHECK	[10] CHECK	[11] FREQUENCY	[12] RESULT	[13] NOTE	[14] CERTIFICATION
							[15] STAMP & SIGNATURE
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
FINAL ACCEPTANCE [16]							
STAMP & SIGNATURE [17]							DATE [18]

TLC_Table 1



TOOL LOG CARD

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TOOL KIT P/N: [1]	TOOL KIT DESCRIPTION: [2]	TOOL KIT S/N: [3]
TOOL P/N: [4]	TOOL S/N: [5]	REMARKS: [6]

Section 2: HISTORICAL USES RECORD

[19] N°USE	[8] DATE	[6] NOTE	[13] CERTIFICATION	[19] N°USE	[8] DATE	[6] NOTE	[13] CERTIFICATION
			[14] STAMP & SIGNATURE				[14] STAMP & SIGNATURE
1				11			
2				12			
3				13			
4				14			
5				15			
6				16			
7				17			
8				18			
9				19			
10				20			

TLC_Table 2

LOG CARD FILLING INSTRUCTIONS

FIELD #	HEADER	NOTE
1	Part number of the tool Kit	
2	Tool Kit denomination	
3	Serial Number of the tool Kit	
4	Part Number of the tool (part of kit)	
5	Serial Number of the tool (if applicable)	
6	Indicate any details of the use	
7	Sequential number of check performed	
8	Date of the activity	
9	PN of tool or component (part of tool) checked/affected by issue	
10	Typology or description of checks /issue	
11	Check frequency	
12	Check result	
13	Check remarks	
14	Performance certification	
15	Stamp and signature of the personnel which performs the check	
16	Section related to the final approval	
17	Stamp and signature of the personnel which performs the final approval	
18	Date on which the final check was made	
19	Sequential number of performed used of the tool	