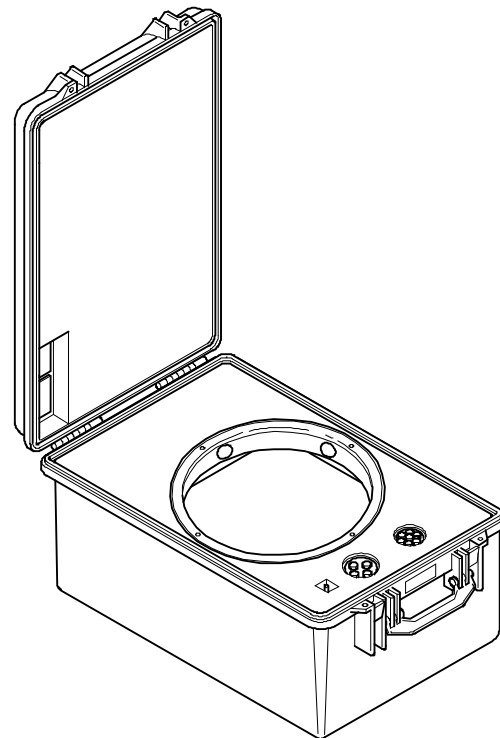
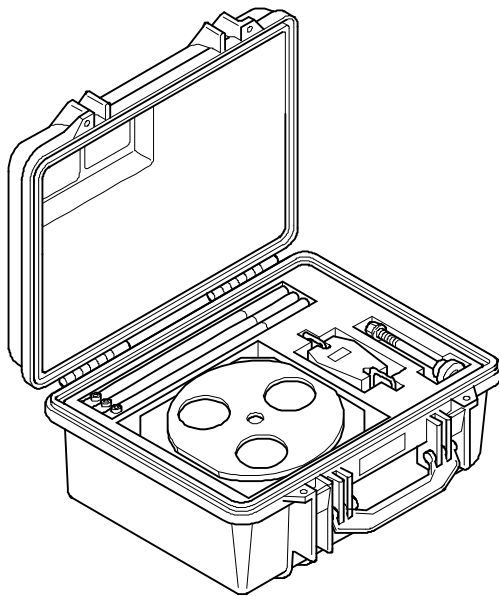


# GSE & TOOL MANUAL

<b>TITLE</b>	<b>TOOL KIT, SWASHPLATE ASSY P/N 3G6205G11231</b>
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	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b>
		Pag. 2 of 24

## REVISION HISTORY

REV	CHANGE DESCRIPTION	DATE
A	First issue	10/11/2021

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231</b> <b>REV. A</b>
		Pag. 3 of 24

## SUMMARY

SUMMARY .....	3
LIST OF TABLE .....	4
LIST OF FIGURE .....	4
1. SCOPE .....	5
1.1. APPLICABILITY .....	5
1.2. OBJECT .....	5
1.3. WARNING AND SAFETY INSTRUCTIONS .....	5
2. DOCUMENTS .....	6
2.1. APPLICABLE DOCUMENTS .....	6
2.2. ACRONYMS USED .....	6
3. DESCRIPTION .....	7
4. TOP ASSEMBLY DRAWINGS .....	8
5. IDENTIFICATION .....	8
6. OVERALL DIMENSIONS .....	9
7. WEIGHT .....	9
8. MAIN PARTS .....	10
9. MAIN FEATURES DESCRIPTION .....	11
10. WARNING AND SAFETY NOTES .....	12
10.1. WARNING NOTE .....	12
10.2. SAFETY NOTES .....	13
11. STORAGE .....	14
11.1. LUBRICATION BEFORE STORAGE .....	14
11.2. STORAGE CONFIGURATION .....	14
12. MAINTENANCE .....	14
12.1. CLEANING .....	14
12.1.1. SPECIAL TOOLS, FIXTURE AND EQUIPMENT .....	14
12.1.2. PART REQUIREMENTS .....	14
12.1.3. MANUAL CLEANING .....	14
12.2. CHECKS .....	15
12.2.1. SPECIAL TOOLS, FIXTURE AND EQUIPMENT .....	15
12.2.2. VISUAL EXAMINATION .....	16
12.2.3. PERIODICAL CHECKS .....	16
12.2.4. DIMENSIONAL CHECKS .....	16
12.2.5. SPECIAL CHECKS SUMMARY .....	16
12.3. REPLACEMENT .....	17
12.3.1. REPLACEMENT PROCEDURES .....	17

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231</b> <b>REV. A</b>
		Pag. 4 of 24

13.	CALIBRATION .....	17
14.	SHELF LIFE .....	17
15.	SPARE PARTS .....	18
16.	CE MARKING.....	23
	ANNEX A.....	24

### LIST OF TABLE

Table 1 – Warning Instruction .....	5
Table 2 – Applicable Documents.....	6
Table 3 – Warning Note.....	12
Table 4 – Visual Check.....	16
Table 5 – Spare Parts.....	18
Table 6 – Spare Parts.....	20
Table 7 – Spare Parts.....	21
Table 8 – Spare Parts.....	22

### LIST OF FIGURE

<i>Figure 1 – Tool Kit swashplate assy, Case 1 .....</i>	<i>7</i>
<i>Figure 2 – Tool Kit swashplate assy, Case 2 .....</i>	<i>7</i>
<i>Figure 3 – LHD Identification tag with P/N .....</i>	<i>8</i>
<i>Figure 4 – Main Parts, Case 1.....</i>	<i>10</i>
<i>Figure 5 – Main Parts, Case 2.....</i>	<i>10</i>
<i>Figure 6 – Safety Notes.....</i>	<i>13</i>
<i>Figure 7 – Spare Parts .....</i>	<i>18</i>
<i>Figure 8 – Spare Parts (Case 1) .....</i>	<i>19</i>
<i>Figure 9 – Spare Parts (Case 2) .....</i>	<i>21</i>
<i>Figure 10 – Spare Parts (Case 2) .....</i>	<i>22</i>

## 1. SCOPE

### 1.1. APPLICABILITY




The contents of this document are meant to provide information on the P/N 3G6205G11231 TOOL KIT, SWASHPLATE ASSY.

### 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 3G6205G11231 TOOL KIT, SWASHPLATE ASSY.

### 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.

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

*Table 1 – Warning Instruction*

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231</b> <b>REV. A</b>
		Pag. 6 of 24

## 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*

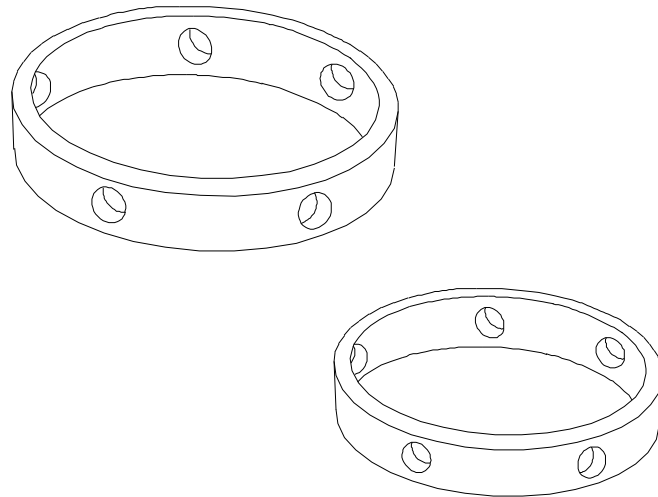
### 2.2. ACRONYMS USED

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

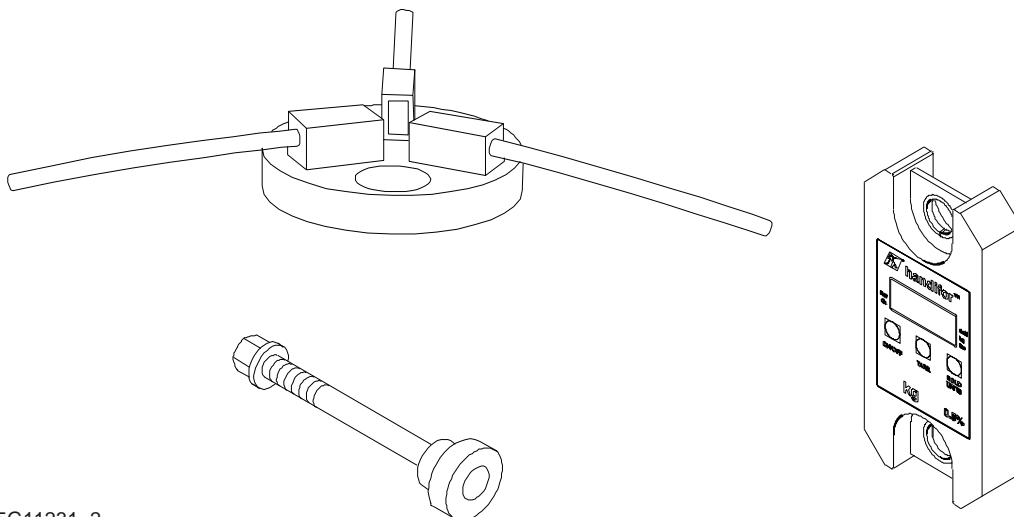
### 3. DESCRIPTION

This tool kit is used to do the repair activities on the swashplate assy by replacing the duplex ball bearing.



3G6205G11231\_1

*Figure 1 – Tool Kit swashplate assy, Case 1*



3G6205G11231\_2

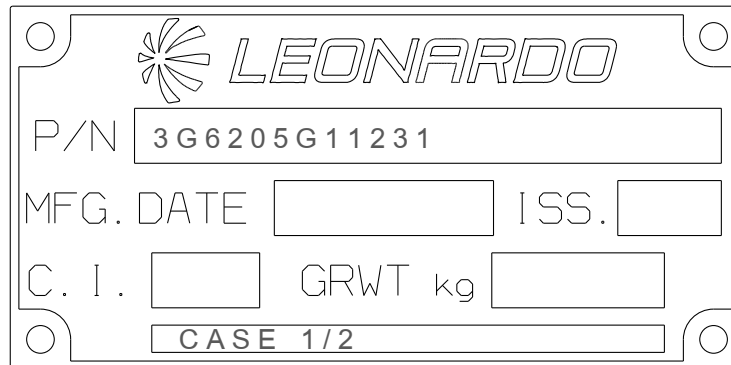
*Figure 2 – Tool Kit swashplate assy, Case 2*

#### 4. TOP ASSEMBLY DRAWINGS

Refer to P/N 3G6205G11231 TOOL KIT, SWASHPLATE ASSY.

#### 5. IDENTIFICATION

The tool identification P/N is marked on each case on the LHD identification tag.



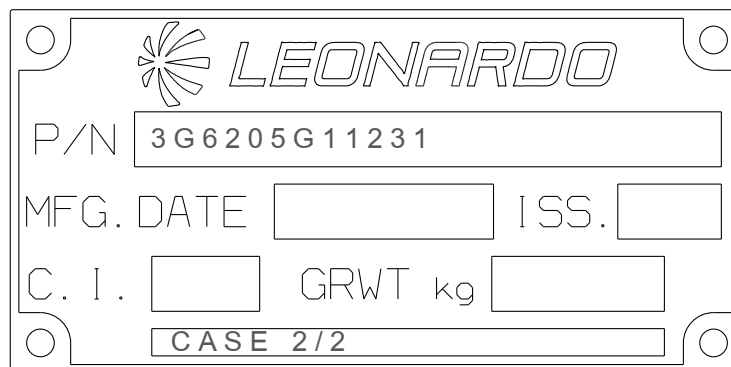
LEONARDO

P/N 3G6205G11231

MFG. DATE  ISS.

C. I.  GRWT kg

CASE 1/2



LEONARDO

P/N 3G6205G11231

MFG. DATE  ISS.

C. I.  GRWT kg

CASE 2/2

Figure 3 – LHD Identification tag with P/N



	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b>
		Pag. 9 of 24

## 6. OVERALL DIMENSIONS

### Case 1

- Length: 800 mm
- Width: 580 mm
- Height: 482 mm

### Case 2

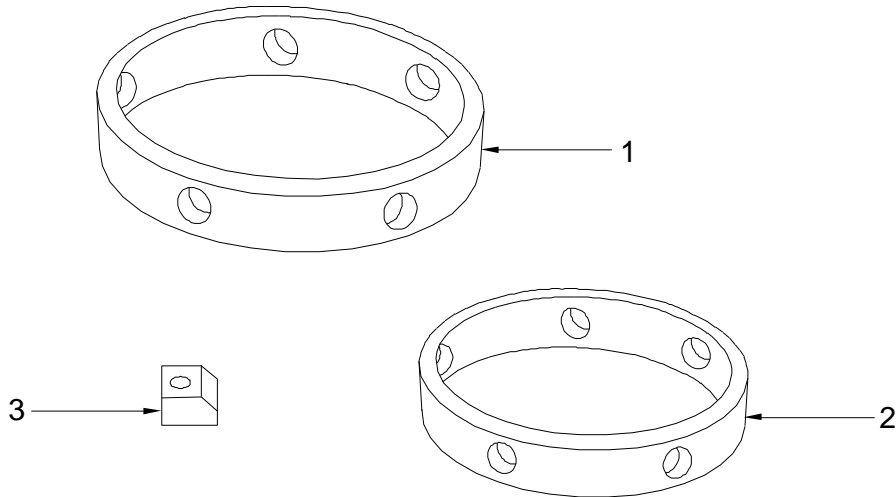
- Length: 619 mm
- Width: 495 mm
- Height: 225 mm

## 7. WEIGHT

### Case 1 + Case 2

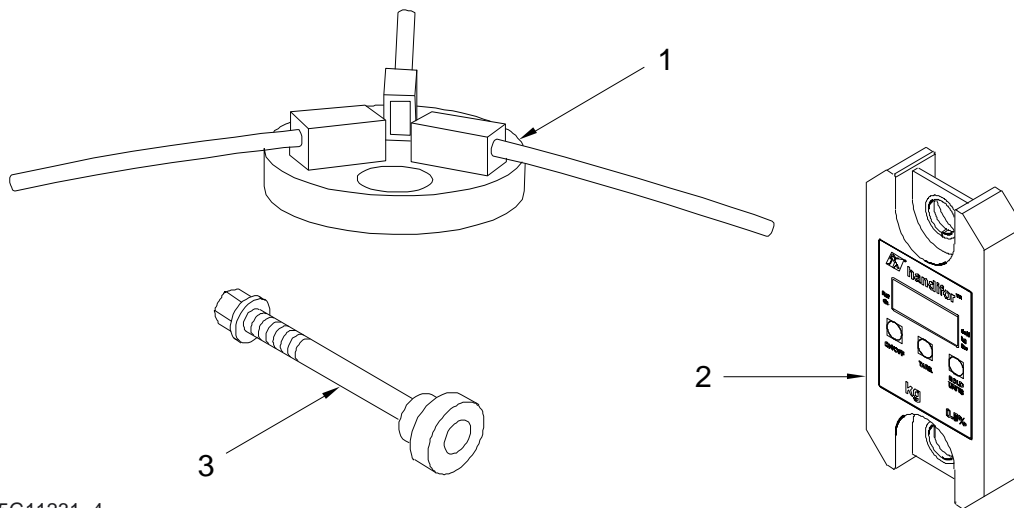
- Total Weight: 25 kg

## 8. MAIN PARTS



3G6205G11231\_3

Figure 4 – Main Parts, Case 1



3G6205G11231\_4

Figure 5 – Main Parts, Case 2

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b> <hr/> Pag. 11 of 24
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The main parts of the TOOL KIT, SWASHPLATE ASSY are:

Case 1

- 1 Guide
- 2 Guide
- 3 Clamp

Case 2

- 1 Tool, swashplate pivot friction checking
- 2 Dynamometer
- 3 Screw assy

## 9. MAIN FEATURES DESCRIPTION

The kit, supplied in suitable transportation boxes, is composed of the following tools:

Case 1







- Guide, swashplate duplex bearing installation, used to install the duplex ball bearing.
- Guide, swashplate assy assembly, used to install the rotating swashplate on the stationary swashplate.
- Clamp, swashplate duplex bearing positioning, used to find the correct inner peeling shim on the stationary swashplate.

Case 2

- Tool, swashplate pivot friction checking, used to check and measure the pivot bearing friction.
- Dynamometer
- Screw assy.

## 10. WARNING AND SAFETY NOTES

### 10.1. WARNING NOTE

 <b>Warning</b>	<p>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.</p>
 <b>Caution</b>	
 <b>Notice</b>	<p>The Manual can never integrally replace the adequate competence of the user.</p>
 <b>Warning</b>	<p>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.</p>
 <b>Caution</b>	
 <b>Notice</b>	<p>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.</p>

*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 6 – Safety Notes

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b>
		Pag. 14 of 24

## 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 two dedicated transportation boxes (part of the Kit).

Ensure that the tool parts are clean before storage.

### 11.1. LUBRICATION BEFORE STORAGE

N.A.

### 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 slosh 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.

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b> <hr/> Pag. 15 of 24
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## **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, <a href="#">Figure 7</a> , page 18 Item 18, Plate, <a href="#">Figure 8</a> , page 19 Item 19, Nameplate, <a href="#">Figure 8</a> , page 19 Item 20, Nameplate, <a href="#">Figure 8</a> , page 19 Item 26, Nameplate, <a href="#">Figure 9</a> , page 21 Item 27, Plate, <a href="#">Figure 9</a> , page 21 Item 28, Nameplate, <a href="#">Figure 9</a> , page 22 Item 29, Plate, <a href="#">Figure 10</a> , page 22
		Damage to the threads	All
		Marking	All
		Damage to the pins and to the shell	N.A.
Damage to the insulation sleeves and wires	N.A.		

Table 4 – Visual Check

### 12.2.3. PERIODICAL CHECKS

Not Applicable.

### 12.2.4. DIMENSIONAL CHECKS

Not Applicable.

### 12.2.5. SPECIAL CHECKS SUMMARY

Not Applicable.



	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b> Pag. 17 of 24
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### **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.

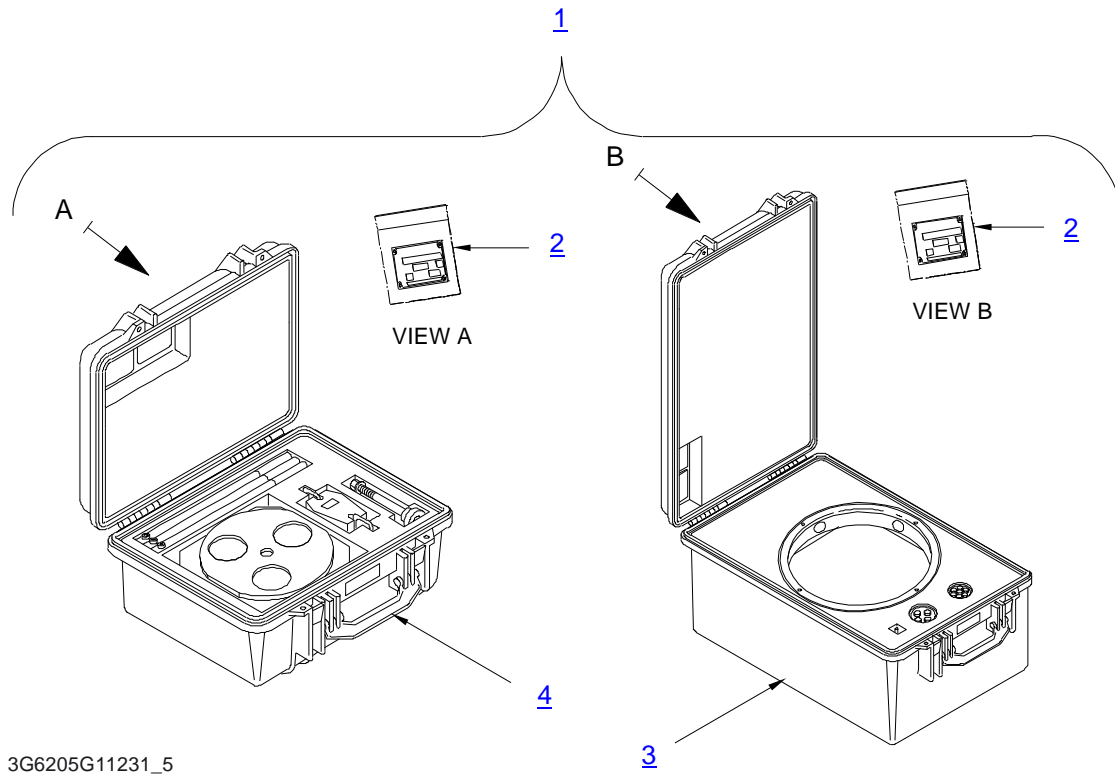
### **13. CALIBRATION**

No Calibration is required.

### **14. SHELF LIFE**

Not Applicable.

## 15. SPARE PARTS

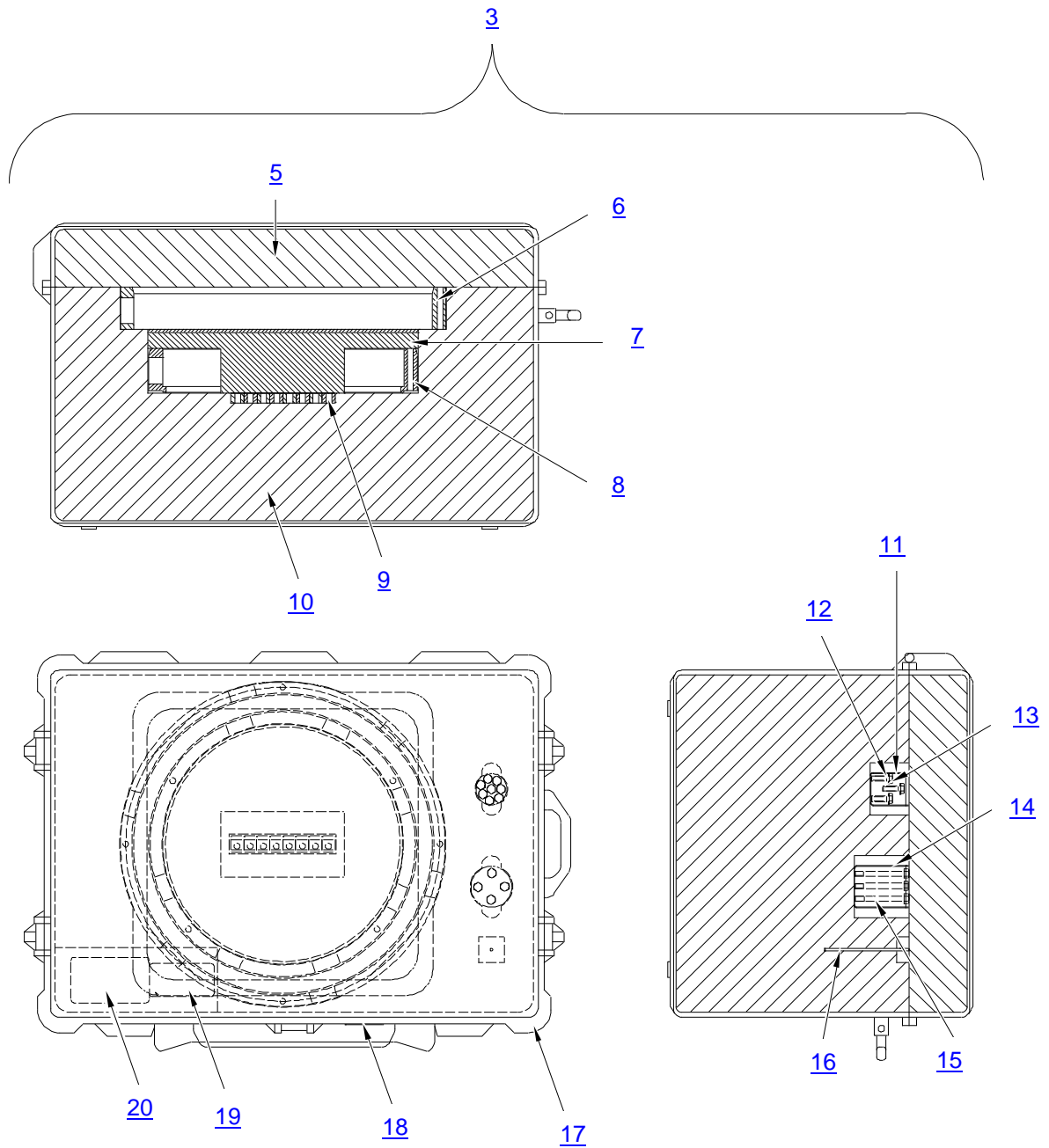


3G6205G11231\_5

*Figure 7 – Spare Parts*

ITEM	P/N	DESCRIPTION	Q.TY
1	3G6205G11231	TOOL KIT, SWASHPLATE ASSY	REF
2	A304A001A1	PLATE, IDENTIFICATION	2
3	3G6205G15231	TOOL KIT, SWASHPLATE ASSY ASSEMBLY CASE 1 (For Breakdown ref. to <a href="#">Fig. 8</a> and <a href="#">Table 6</a> )	1
4	3G6205G13831	TOOL KIT, SWASHPLATE ASSY ASSEMBLY CASE 2 (For Breakdown ref. to <a href="#">Fig. 9</a> and <a href="#">Table 7</a> )	1

*Table 5 – Spare Parts*



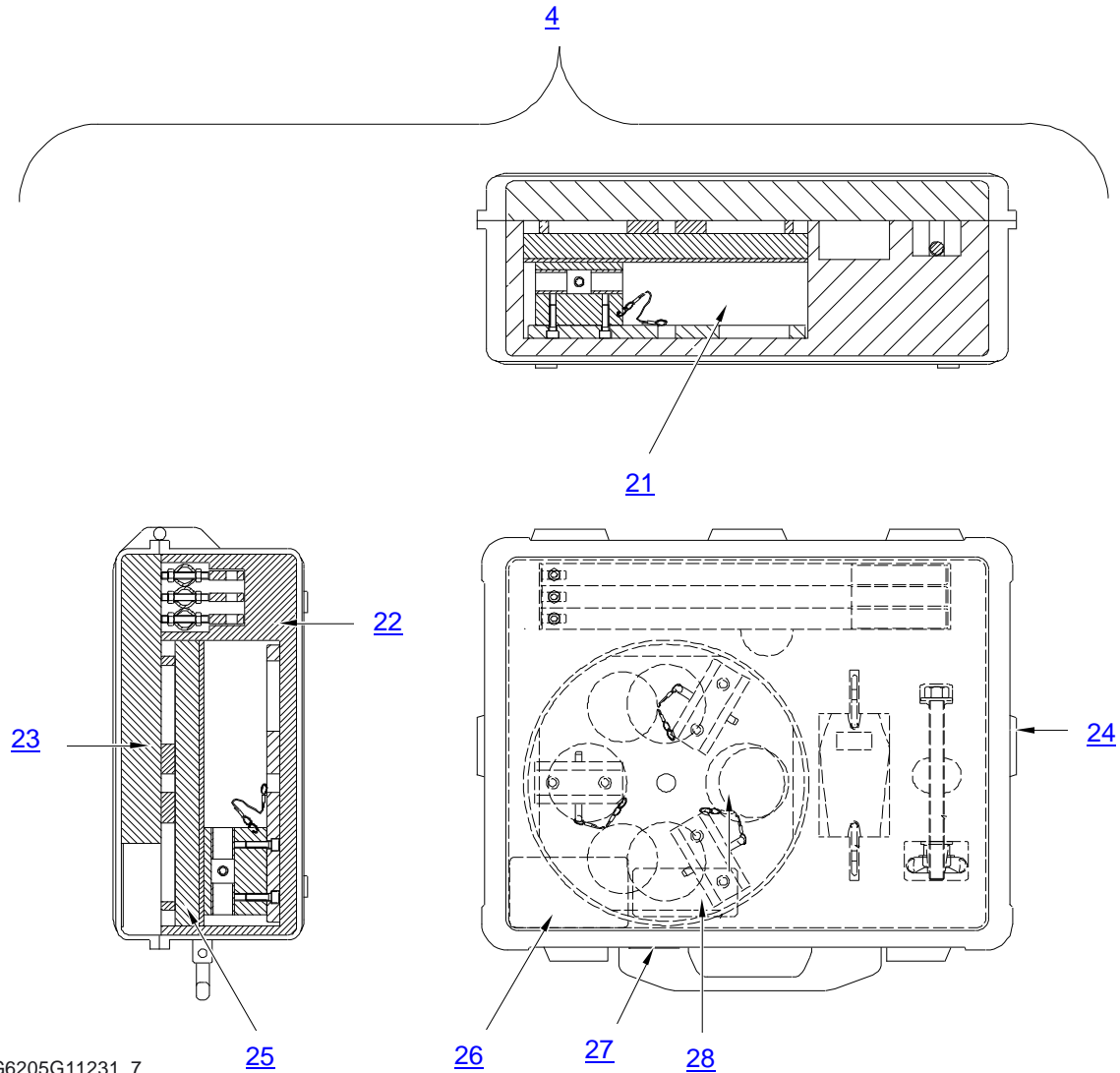
3G6205G11231\_6

*Figure 8 – Spare Parts (Case 1)*

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231</b> <b>REV. A</b>
		Pag. 20 of 24

ITEM	P/N	DESCRIPTION	Q.TY
3	3G6205G15231	TOOL KIT, SWASHPLATE ASSY ASSEMBLY, CASE 1	REF
5	3G6205G18951	FOAM	1
6	3G6205G11651	GUIDE, SWASHPLATE DUPLEX BEARING	1
7	3G6205G15631	PANEL ASSY	1
8	3G6205G11751	GUIDE, SWASHPLATE ASSY ASSEMBLY	1
9	3G6205G11451	CLAMP, SWASHPLATE DUPLEX BEARING	8
10	3G6205G18851	FOAM	1
11	PL2177	CLEAR POT	1
12	NAS1149G0563P	WASHER, FLAT	8
13	AN5-10A	BOLT, MACHINE	8
14	PL2182	CLEAR POT	1
15	AN5-27A	BOLT, MACHINE	4
16	3G6205G15551	PIN	1
17	1660	CASE WITH WHEEL	1
18	A304A001A1	PLATE, IDENTIFICATION	1
19	3G0205G00452	NAMEPLATE	1
20	3G0205G00352	NAMEPLATE	1

*Table 6 – Spare Parts*

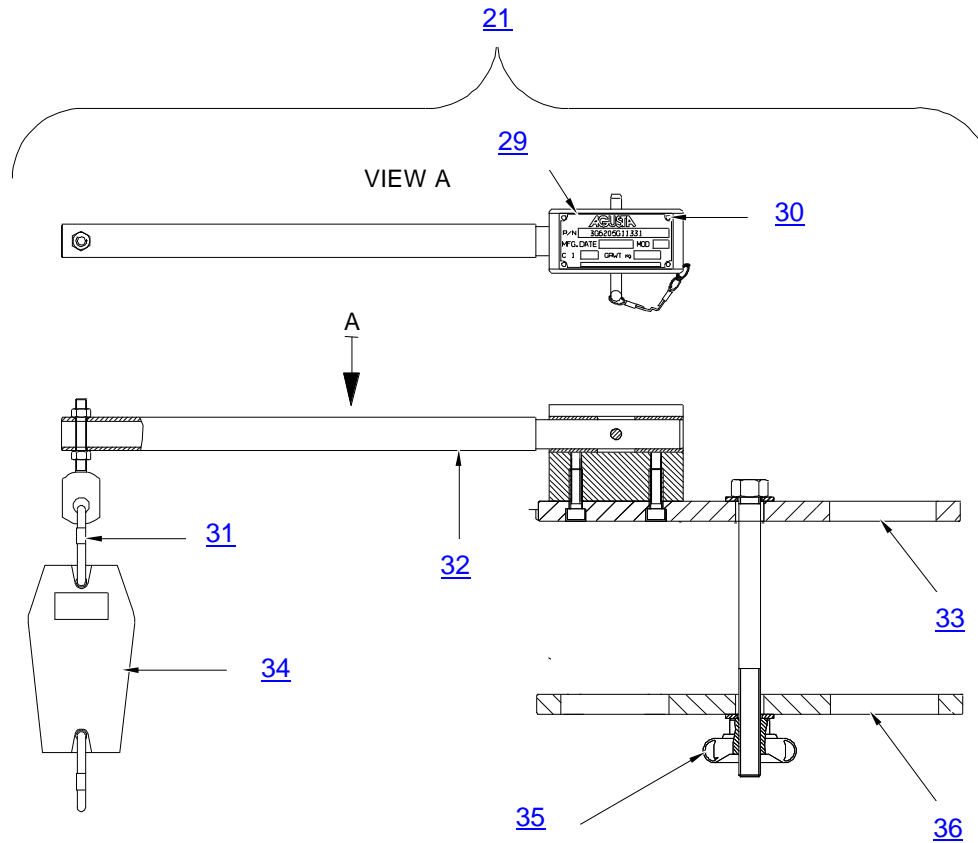


3G6205G11231\_7

*Figure 9 – Spare Parts (Case 2)*

ITEM	P/N	DESCRIPTION	Q.TY
4	3G6205G13831	TOOL KIT, SWASHPLATE ASSY ASSEMBLY CASE 2	REF
21	3G6205G11331	TOOL, SWASHPLATE PIVOT FRICTION CHECKING (For Breakdown ref <a href="#">Fig. 10</a> and <a href="#">Tab 8</a> )	1
22	3G6205G19051	FOAM	1
23	3G6205G19151	FOAM	1
24	1600	CASE, TRANSIT	1
25	3G6205G13931	PANEL ASSY	1
26	3G0205G00199	NAMEPLATE	1
27	A304A001A1	PLATE, IDENTIFICATION	1
28	3G0205G00299	NAMEPLATE	1

*Table 7 – Spare Parts*



3G6205G11231\_8

*Figure 10 – Spare Parts (Case 2)*

ITEM	P/N	DESCRIPTION	Q.TY
21	3G6205G11331	TOOL, SWASHPLATE PIVOT FRICTION CHECKING	REF
29	A304A001A1	PLATE, IDENTIFICATION	1
30	MS35207-226	SCREW, MACHINE	4
31	540.06K-L	SPRING CATCH	2
32	3G6205G13231	ARM ASSY	3
33	3G6205G12731	UPPER PLATE ASSY	1
34	HANDIFOR-20	DYNAMOMETER	1
35	3G6205G13531	SCREW ASSY	1
36	3G6205G13151	LOWER PLATE	1

*Table 8 – Spare Parts*

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b> Pag. 23 of 24
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## 16. CE MARKING

No CE marking is required for the P/N 3G6205G11231 TOOL KIT, SWASHPLATE ASSY.

	<b>GSE &amp; TOOL USE AND MAINTENANCE MANUAL</b>	Manual number: <b>MAN-3G6205G11231 REV. A</b> <hr/> Pag. 24 of 24
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# **ANNEX A**

# **TOOL LOG CARD**





# TOOL LOG CARD

ISSUE -/  
Pag. 1 of 3

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

## Section 1: CHECKS RECORD

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

TLC\_Table 1



# TOOL LOG CARD

ISSUE -/-  
Pag. 2 of 3

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

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