

Doc. Ref. No	GAM221/EO
Rev. Date	03/01/2024
Rev. No	0

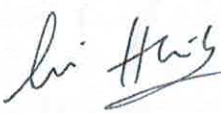


**LEONARDO S.p.A AW139  
ENGINEERING ORDER**

**FABRICATION OF GROUND SUPPORT  
EQUIPMENT AND SPECIAL TOOLS**

**IMPORTANT NOTE**

Preparation of this document is referred to GAM.P23 General Engineering Request.

**Approval Signature**

Prepared by	Verified by	Approved by
		
ILMI HAIKAL BIN MOHD YUSOFF Design Engineer 03/01/2024	Ir. NIZAM NAZAR Design Engineer Verification 03/01/2024	ISMAIL SULAIMAN Senior Design Engineer 03/01/2024

Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

**TABLE OF CONTENTS**

<u>Description</u>	<u>Page</u>
<b>RECORD OF REVISIONS</b>	<b>3</b>
<b>1. PLANNING INFORMATION</b>	<b>4</b>
A. EFFECTIVITY.....	4
B. CLASSIFICATION.....	4
C. REASON.....	4
D. DESCRIPTION.....	4
E. COMPLIANCE.....	4
F. APPROVAL.....	5
G. MANPOWER.....	5
H. SPECIAL TOOLING.....	5
I. WEIGHT AND BALANCE.....	5
J. ELECTRICAL LOAD DATA.....	5
K. REFERENCES.....	5
L. PUBLICATIONS AFFECTED.....	5
M. SOFTWARE ACCOMPLISHMENT SUMMARY.....	5
<b>2. ACCOMPLISHMENT INSTRUCTIONS</b>	<b>6</b>
A. PREPARATION.....	6
B. ACCOMPLISHMENT.....	6
<i>B.1. Mechanical Installation.....</i>	<i>6</i>
<i>B.2. Electrical Installation.....</i>	<i>9</i>
<i>B.3. Ground Check.....</i>	<i>9</i>
<i>B.4. System Check.....</i>	<i>9</i>
<i>B.5. Final Installation Instruction.....</i>	<i>9</i>
C. OPERATING AND MAINTENANCE INSTRUCTIONS.....	9
<i>C.1. Operating Instructions.....</i>	<i>9</i>
<i>C.2. Maintenance Instructions.....</i>	<i>9</i>
<b>3. MATERIAL INFORMATION</b>	<b>9</b>
A. NEW / RETAINED PARTS.....	9
B. REPLACEMENT PARTS.....	9
C. RE-IDENTIFIED PARTS.....	9

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**ENGINEERING ORDER**

Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

**RECORD OF REVISIONS**

Rev.	Affected Page(s)	Date	Descriptions of Revision	Prepared by	Verified by	Approved by
0	All	07/11/2023	Initial Issue		MAMM	INN

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Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

**TITLE: FABRICATION OF GROUND SUPPORT EQUIPMENT AND SPECIAL TOOLS**

**1. PLANNING INFORMATION**

**A. Effectivity**

Model	Register Number	Serial Number
LEONARDO S.p.A AW139	9M-BOC	31289
	9M-BOD	31291
	9M-PMA	31807
	9M-PMB	31726
	9M-PMD	31809
	9M-PME	31855
	9M-PMF	31913
	9M-JPM	31899
	9M-SAAS	31903
	9M-YTL	41358

**B. Classification**

Not applicable.

**C. Reason**

This instruction is developed as part of fabrication procedures for AW139 Ground Support Equipment and Special Tools.

**D. Description**

This Engineering Order details the fabrication procedure of ground support equipment and special tools.

**E. Compliance**

Not applicable.

Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

**F. Approval**

Not applicable.

**G. Manpower**

At fabricator's initiative.

**H. Special Tooling**

At fabricator's initiative.

**I. Weight and Balance**

Not applicable.

**J. Electrical Load Data**

Not applicable.

**K. References**

The following documents were used as reference for this Engineering Order.

1. Metallics Materials Properties Development Standardizations (MMPDS).
2. Types Certificate Data Sheet (TCDS) AW139 – General.

**L. Publications Affected**

Not Applicable

**M. Software Accomplishment Summary**

Not Applicable

## ENGINEERING ORDER

Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

### 2. ACCOMPLISHMENT INSTRUCTIONS

#### A. Preparation

Not Applicable

#### B. Accomplishment

##### B.1. Mechanical Installation

##### B.1.1. Fabrication of Ground Support Equipment and Special Tools.

1. Fabricate Ground Support Equipment and Special Tools as per Table 1 below.
2. Load Test is not required for this fabrication.

NO	DESCRIPTION	DRAWING NUMBER	GAM LOCAL PART NUMBER	EQUIVALENT OEM PART NUMBER
1	DECK SERVICING PLATFORM TAIL	ED063001	ED063001	-
2	DECK SERVICING PLATFORM RH	ED064001	ED064001	RMGE3G-103A
3	DECK SERVICING PLATFORM LH	ED065001	ED065001	RMGE3G-102A
4	TAIL ROTOR PLATFORM	ED063001	ED063001	-
5	RH PLATFORM	ED064001	ED064001	RMGE3G-103A
6	LH PLATFORM	ED065001	ED065001	RMGE3G-102A
7	TROLLEY MAIN ROTOR HEAD	ED058001	ED058001	3G6005G00131
8	TROLLEY ENGINE SUPPORT	ED145001	ED145001	3G710G00132
9	MAINTENANCE PLATFORM	ED300001	ED300001	-
10	SERVICING TABLE	ED301001	ED301001	-

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## ENGINEERING ORDER

Doc. Ref. No      GAM221/EO

Rev. Date          07/11/2023

Rev. No             0

NO	DESCRIPTION	DRAWING NUMBER	GAM LOCAL PART NUMBER	EQUIVALENT OEM PART NUMBER
11	SERVO PRESSURE SWITCH	ED221001	87223-85GAM	87223-85
12	TOOL KIT SPECIAL WRENCH c/w BOX	ED221002	3327GAM	3327
13	SPANNER WRENCH	ED221003	STI 3111	STI 3111
14	SOCKET 7/16"	ED221004	STI 3108	STI 3108
15	SOCKET 3/4"	ED221005	STI 3335	STI 3335
16	GUIDE TUBE	ED221006	ED221006	PW42200E
17	ADAPTOR SOCKET WRENCH (MLG)	ED221007	3G3205G00151GAM	3G3205G00151
18	TGB/IGB FITTING INSTL (C/W BOX)	ED221008	3G5305G12331GAM	3G5305G12331
19	M/R SCISSOR RETAINING NUT WRENCH	ED221009	3G6205G26631GAM	3G6205G26631
20	FIRE EXTINGUISHING CHECK TEE TESTER	ED221010	ED221010	-
21	TGB CENTER SEAL REMOVAL/INSTL KIT	ED221022	ED221022	-
22	JACK SCREW	ED221033	3G6005G00431GAM	3G6005G00431
23	M/R DAMPER HUB SIDE	ED221036	3G6005G01531GAM	3G6005G01531
24	BOOSTER PUMP CRATRIDGE REMOVAL TOOL	ED221039	3G2805G00131GAM	3G2805G00131
25	TOOLKIT, T/R BUSHING REPLACEMENT	ED221041	3G6405G08632GAM	3G6405G08632
26	TOOLKIT, T/R BUSHING REPLACEMENT	ED221044	3G6405G08632GAM	3G6405G08632

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**ENGINEERING ORDER**

Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

NO	DESCRIPTION	DRAWING NUMBER	GAM LOCAL PART NUMBER	EQUIVALENT OEM PART NUMBER
27	WRENCH. M/R SCISSORS RETAINING NUT REMOVAL/INSTALLATION	ED221047	3G6205G26631GAM	3G6205G26631
28	M/R PITCH ADJUSTMENT TOOL	ED221051	3G6205G00432GAM	3G6205G00432
29	HYDRAULIC SERVICE OIL HOSE	ED221052	ED221052	AP-AIR120-2
30	LANDING GEAR BLOCKING SYSTEM C/W BOX	ED221053	ED221053	3G0705G00411
31	MGB ANTI TORQUE BEAM INSTALLATION PIN	ED221054	3G6305G26631GAM	3G6305G26631
32	M.R DAMPER REMOVE & INSTALL	ED221056	3G62205G05951GAM	3G62205G05951



Doc. Ref. No	GAM221/EO
Rev. Date	07/11/2023
Rev. No	0

**B.2. Electrical Installation**

Not applicable.

**B.3. Ground Check**

1. Perform General Visual Inspection (GVI) on all fabricated items. No defects are allowed.

**B.4. System Check**

Not applicable.

**B.5. Final Installation Instruction**

Not applicable.

**C. Operating and Maintenance Instructions**

**C.1. Operating Instructions**

Not applicable.

**C.2. Maintenance Instructions**

Not applicable.

**3. MATERIAL INFORMATION**

**A. New / Retained Parts**

Not applicable.


**B. Replacement Parts**


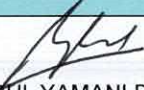
Not applicable.

**C. Re-identified Parts**


Not applicable.

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PART A			
Description of tool	GUIDE TUBE	Tool Part No. (OEM)	PW42200E
Document reference	PRATT & WHITNEY ETP PT6C-67C/-67C1	Aircraft type	AW139
Signature	: 		
Name	: JASMALIZAM JAMALUDIN		
Designation	: ENGINEERING CONTROLLER		
Date	: 1 / 11 / 2023		

PART B			
Drawing No.	ED221006	Assigned Part No.	ED221006
Engineering Order No.	GAM221/EO		
Signature	: 		
Name	: MUHAMMAD SHAFIQ BIN ABDUL SHUKOR		
Designation	: DESIGN ENGINEER		
Date	: 6 / 11 / 2023		
Verification			
Signature	: 		
Name	: SYAFRUL YAMANI BIN SAFRUDDIN		
Designation	: ENGINEERING MANAGER		
Date	: 1 / 12 / 2023		

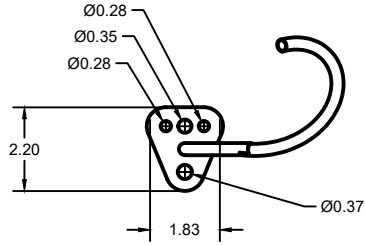
PART C			
Evaluation			
Section 1			
	Original/ OEM Tool	Equivalent Tool	Remarks
Part No. and Model	N/A	N/A	N/A
Technical Specification:			
i. N/A	N/A	N/A	N/A
ii. N/A	N/A	N/A	N/A
iii. N/A	N/A	N/A	N/A
Section 2			
Condition of Tool:	Satisfactory	Unsatisfactory	Remarks
i. Technical Specification	/		
ii. Dimension	/		
iii. Physical appearance	/		
iv. Paintwork	/		
v. Surface treatment	/		
vi. Function/Operation	/		
vii. Safety feature	/		
viii. Attachment & fitting	/		
Requirement for load test	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Requirement for calibration	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

PART D	
Declaration	
I hereby verify that:	
<input checked="" type="checkbox"/> The Alternative Tool and Test Equipment has been assessed and found to be equivalent to that specified in the Maintenance Data/ Drawing.	
<input type="checkbox"/> The Alternative Tool and Test Equipment has been assessed and found to be incompatible for use in accordance with specifications in the Maintenance Data/ Drawing.	
Signature	: 
Name	: MUHAMMAD SHAFIQ BIN ABDUL SHUKOR
Designation	: DESIGN ENGINEER
Date	: 6/12/2023

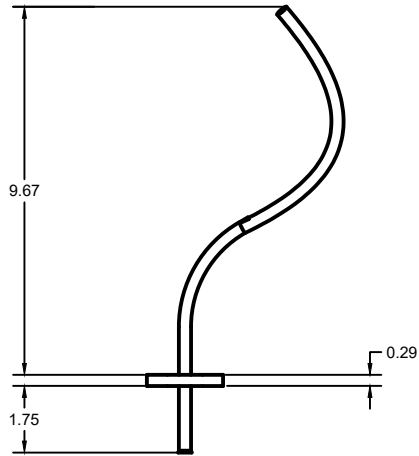
REV	DESCRIPTION	DATE
0	INITIAL REVISION	17/03/2023

NOTE :

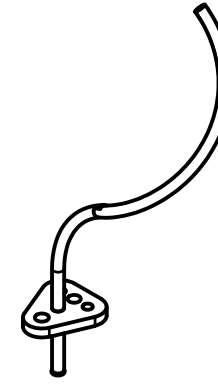
1. MACHINING ALL OVER IN ACCORDANCE WITH ISO 14649-201:2011
2. REMOVE ALL SHARP EDGES AND BURRS



-001  
TOP VIEW



-001  
SIDE VIEW



-001  
ISO VIEW

1	ED2210006-001	1	GUIDE TUBE	STAINLESS STEEL	-	-
ITEM	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATIONS	REMARKS
BILL OF MATERIALS						



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GAM/DOA.F.005 MARCH 2023

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RELATED DOC : GAM221/EO

- UNLESS OTHERWISE SPECIFIED:-
1. DIMENSIONS IN INCH/FEET OR CM/MM.
  2. TOLERANCES ON:
    - XX ±1.00
    - XX.X ±0.50
    - XX.XX ±0.05
    - ANGLES ±0.5 DEG
  3. REMOVE BURRS AND SHARP EDGES.

DRAWN: MUHAMMAD SAUFI ASFIAMMAYUS

APPROVED: Ir. NIZAM NAZAR


DATE: 17/03/2023


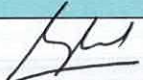
TITLE: GUIDE TUBE

DRAWING NO.: ED2210006


AIRCRAFT TYPE: AW139

REV: 0 SCALE: NTS SHEET 1 OF 1 SIZE: A3

PART A			
Description of tool	BOOSTER PUMP CARTRIDGE REMOVAL TOOL	Tool Part No. (OEM)	3G2805G00131
Document reference	AW139 IETP 39-A-GH-01-00-00A-066A-A	Aircraft type	AW139
Signature	: 		
Name	: JASMALIZAM JAMALUDIN		
Designation	: ENGINEERING CONTROLLER		
Date	: 2/11/2023		

PART B			
Drawing No.	ED221040	Assigned Part No.	3G2805G00131GAM
Engineering Order No.	GAM221/EO		
Signature	: 		
Name	: MUHAMMAD SHAFIQ BIN ABDUL SHUKOR		
Designation	: DESIGN ENGINEER		
Date	: 6/11/2023		
Verification			
Signature	: 		
Name	: SYAFROL YAMANI BIN SAFRUDDIN		
Designation	: ENGINEERING MANAGER		
Date	: 1/12/2023		

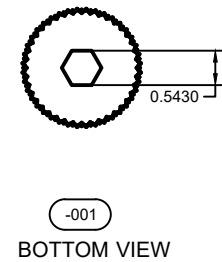
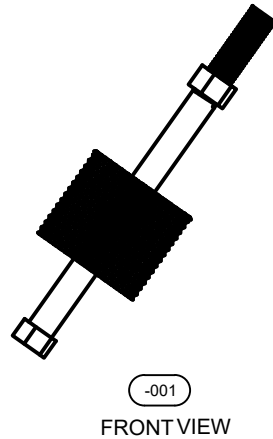
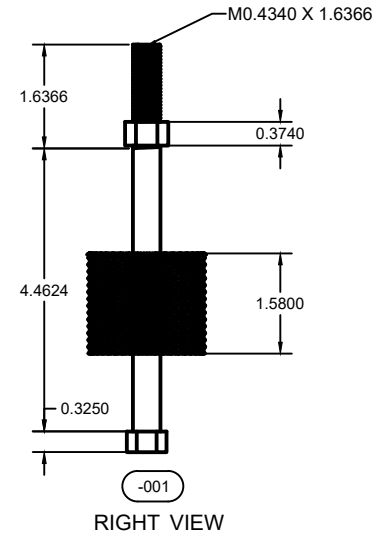
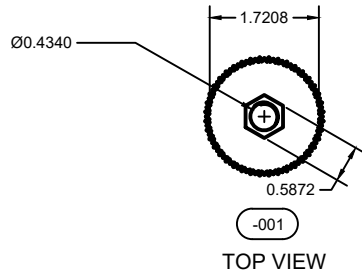
PART C			
Evaluation			
Section 1			
	Original/ OEM Tool	Equivalent Tool	Remarks
Part No. and Model	N/A	N/A	N/A
Technical Specification:			
i.	N/A	N/A	N/A
ii.	N/A	N/A	N/A
iii.	N/A	N/A	N/A
Section 2			
Condition of Tool:	Satisfactory	Unsatisfactory	Remarks
i. Technical Specification	/		
ii. Dimension	/		
iii. Physical appearance	/		
iv. Paintwork	/		
v. Surface treatment	/		
vi. Function/Operation	/		
vii. Safety feature	/		
viii. Attachment & fitting	/		
Requirement for load test	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Requirement for calibration	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

PART D	
Declaration	
I hereby verify that:	
<input checked="" type="checkbox"/> The Alternative Tool and Test Equipment has been assessed and found to be equivalent to that specified in the Maintenance Data/ Drawing.	
<input type="checkbox"/> The Alternative Tool and Test Equipment has been assessed and found to be incompatible for use in accordance with specifications in the Maintenance Data/ Drawing.	
Signature	: 
Name	: MUHAMMAD SHAFIQ BIN ABDUL SHUKOR
Designation	: DESIGN ENGINEER
Date	: 6/12/2023

REV	DESCRIPTION	DATE
0	INITIAL REVISION	28/02/2020

NOTE :

1. MACHINING ALL OVER IN ACCORDANCE WITH ISO 14649-201:2011
2. REMOVE ALL SHARP EDGES AND BURRS
3. APPLY KNURLING IN ACCORDANCE WITH ISO 13444:2012(EN) OR EQUIVALENT.
4. THE SPECIAL TOOLS DRAWING ARE MADE REFERENCE WITH ITEM PART NUMBER 3G2805G00131GAM.



1	ED2210040-001	1	BOOSTER PUMP CRATRIDGE REMOVAL TOOL	STAINLESS STEEL	-	-
ITEM	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATIONS	REMARKS

BILL OF MATERIALS

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			<p>APPROVED: Ir. NIZAM NAZAR</p>	<p>DRAWING NO.: ED2210040</p>	<p>AIRCRAFT TYPE: AW139</p>

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