

PEC ITALIA S.r.l.

OPERATION AND MAINTENANCE MANUAL

for

3G5350G00831

**TOOL SET, TAILPLANE/TGB/IGB FITTING
INSTL**

3G5305G12331

TOOL, TGB/IGB FITTING INSTL

3G5350G00931

TOOL, TAILPLANE FITTING INSTL

02	12/02/24	Identification correction	A. GIANNINI	M. IACOPONI	E. MORELLI
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REV.	DATE	DESCRIPTION	WRITTEN BY	VERIFIED BY	APPROVED BY



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02	12/02/2024	Correction p/n components: "right arm" and "left arm" Pag. 12, 48.	Identification correction

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N.B. Modified parts referring to previous revisions are indicated in *Italics* with the revision number listed on the left.

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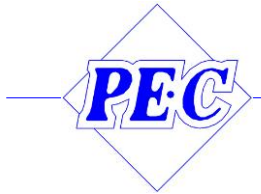


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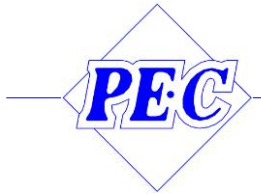
1 SCOPE

1.1 **APPLICABILITY**

The contents of this document are meant to provide information on the **3G5350G00831 TOOL SET, TAILPLANE /TGB/IGB FITTING INSTL.**

1.2 **OBJECT**

The object of this document is to explain how to operate and maintain in service the **3G5350G00831 TOOL SET, TAILPLANE /TGB/IGB FITTING INSTL.**



2 DOCUMENTS

2.1 **APPLICABLE DOCUMENTS**

The following table lists the applicable documents

REF	REFERENCE OF DOCUMENT	TITLE
AD01	3G5350G00831	TOOL SET, TAILPLANE/TGB/IGB FITTING INSTL
AD02	3G5305G12331	TOOL, TGB/IGB FITTING INSTL
AD03	3G5350G00931	TOOL, TAILPLANE FITTING INSTL

2.2 **STANDARD**

N.A.

2.3 **ACRONYMS USED**

The main acronyms used in this document are listed below:

HC	Helicopter
P/N	Part Number
N.A.	Not Applicable
T.G.B.	Tail Gear Box
I.G.B.	Intermediate Gear Box



3 3G5350G00831 TOOL SET, TAILPLANE/T.G.B./I.G.B. FITTING INSTL

3.1 TOP ASSEMBLY DRAWINGS

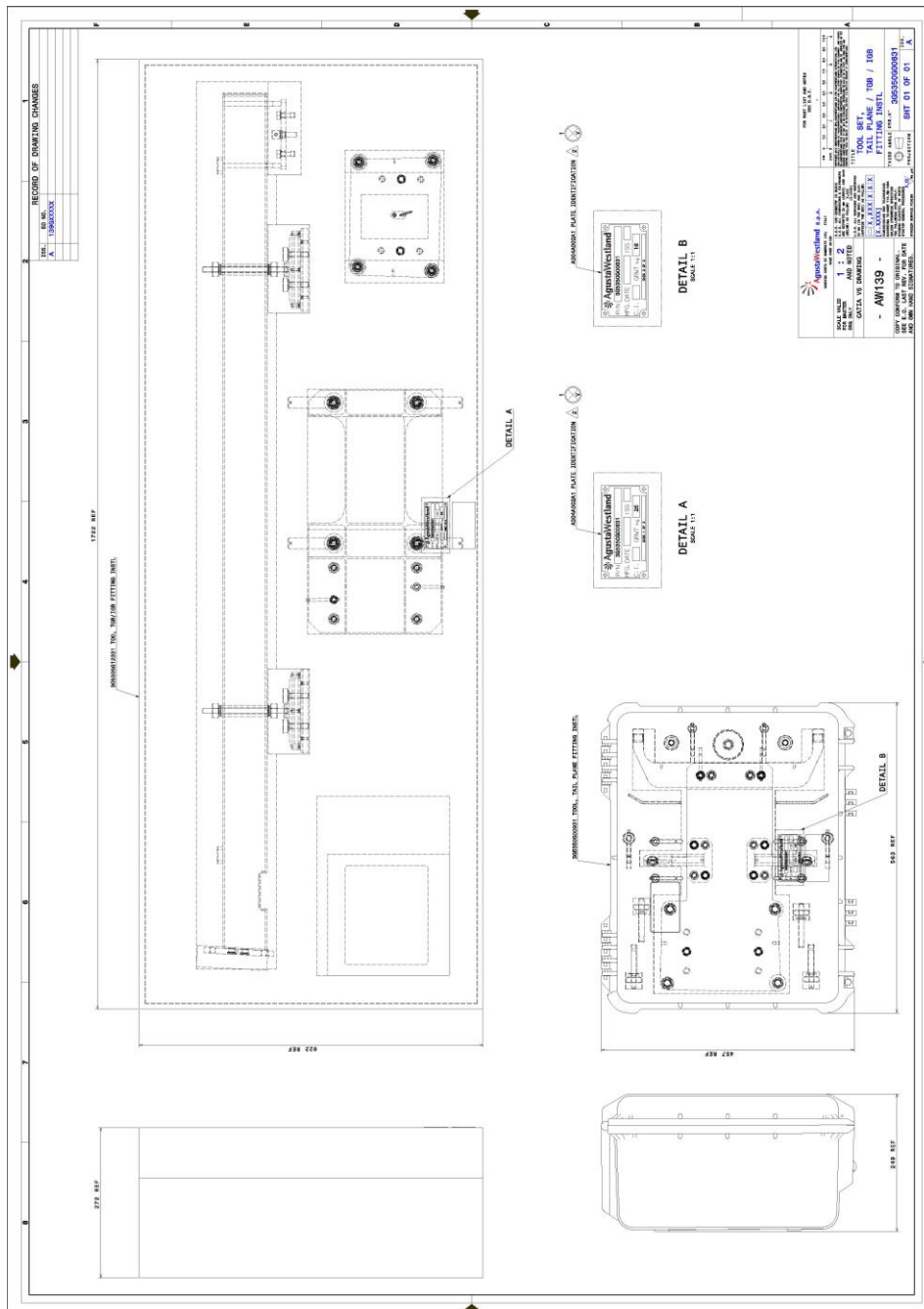


Figure 1: 3G5350G00831 TOOL SET, TAILPLANE/TGB/IGB FITTING INSTL



3.2 IDENTIFICATION TAG

P/N	3G5350G00831		
MFG. DATE	<input type="text"/>	ISS.	<input type="text"/>
C. I.	<input type="text"/>	GRWT kg	25 kg
CASE 1 OF 2			

Figure 2: tag with P/N

P/N	3G5350G00831		
MFG. DATE	<input type="text"/>	ISS.	<input type="text"/>
C. I.	<input type="text"/>	GRWT kg	16 kg
CASE 2 OF 2			

Figure 3: tag with P/N

3.3 DESCRIPTION

The equipment 3G5350G00831 TOOL SET, TAILPLANE/TGB/IGB FITTING INSTL is composed of the following subassemblies:

- 3G5305G12331 Tool, TGB/IGB fitting instl
- 3G5350G00931 Tool, tailplane fitting instl

3.3.1 3G5305G12331 TOOL, TGB/IGB FITTING INSTL

The tool is composed of the following main elements:

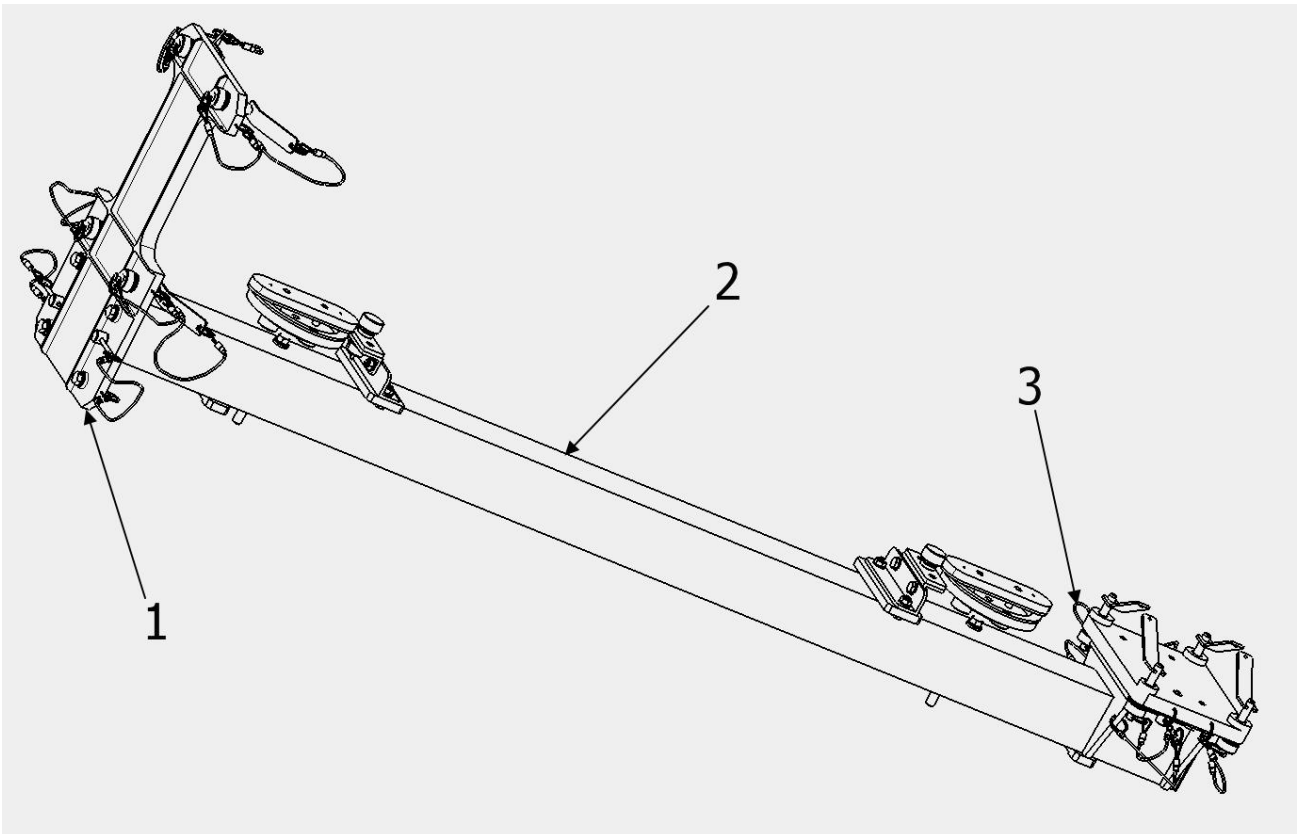


Figure 4: 3G5305G12331 T.G.B. - I.G.B. FITTING INSTL.

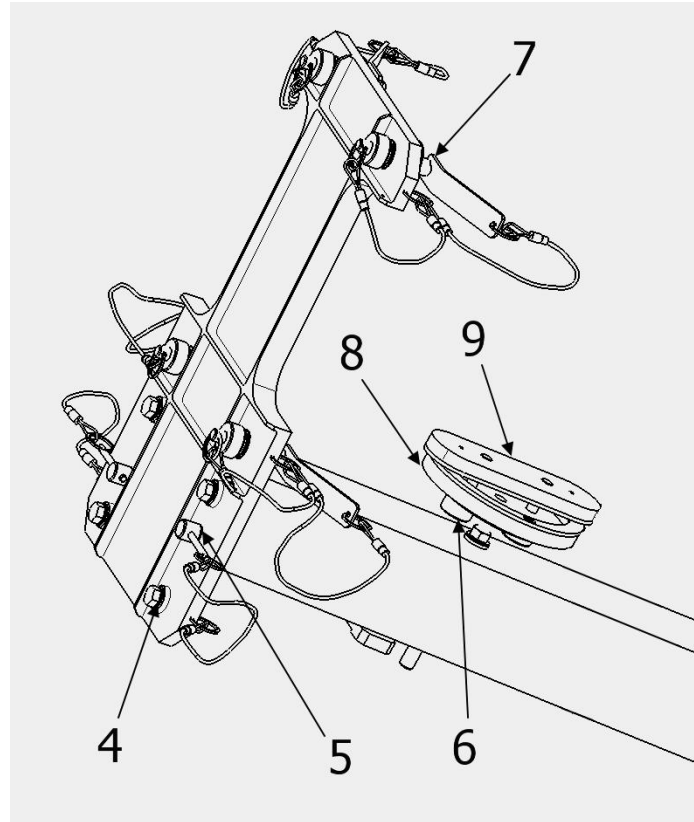


Figure 5: 3G5305G12331 T.G.B. - I.G.B. FITTING INSTL.

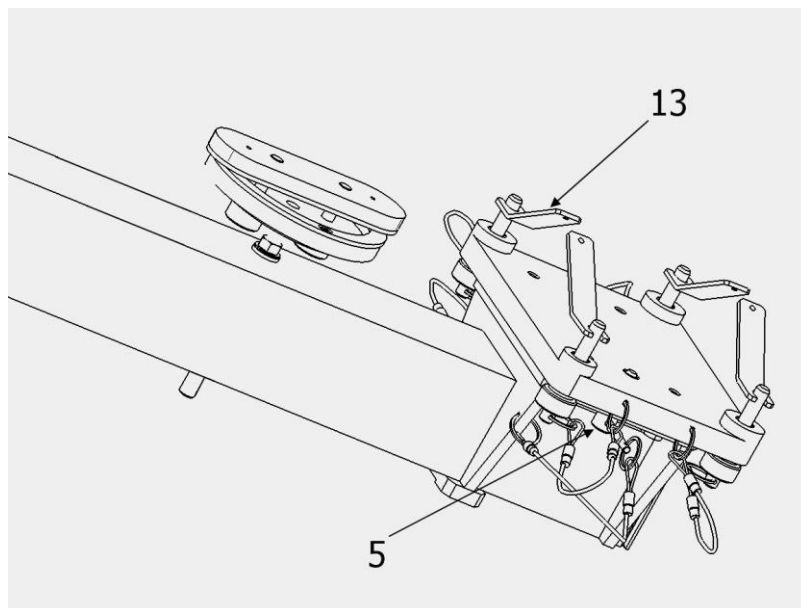


Figure 6: 3G5305G12331 T.G.B. - I.G.B. FITTING INSTL.



ITEM	P/N	DESCRIPTION
1	PEC 139-003-01-09	ASSIEME ATTACCO TGB (<i>PLATE ASSY, TGB FITTING</i>)
2	PEC 139-003-01-03	ASSIEME TRAVE (<i>CROSS BEAM, PLATE ASSY CONNECTION</i>)
3	PEC 139-003-01-05	ASSIEME PIEDE D'APPOGGIO (<i>PLATE ASSY IGB FITTING</i>)
4	PEC 139-003-02-11	VITE (<i>SCREW</i>)
5	PEC 139-003-01-06	ASSIEME SPINA (<i>PIN ASSY</i>)
6	PEC 139-003-02-07	VITE (<i>SCREW</i>)
7	PEC 139-003-01-07	ASSIEME SPINA (<i>PIN ASSY</i>)
8	PEC 139-003-02-05	APPOGGIO (<i>SUPPORT</i>)
9	PEC 139-003-02-06	PIASTRA DI CONTRASTO (<i>FIXING PLATE</i>)
13	PEC 139-003-01-08	ASSIEME SPINA (<i>PIN ASSY</i>)

3.3.2 3G5350G00931 TOOL, TAILPLANE FITTING INSTL

The tool is composed of the following main elements:

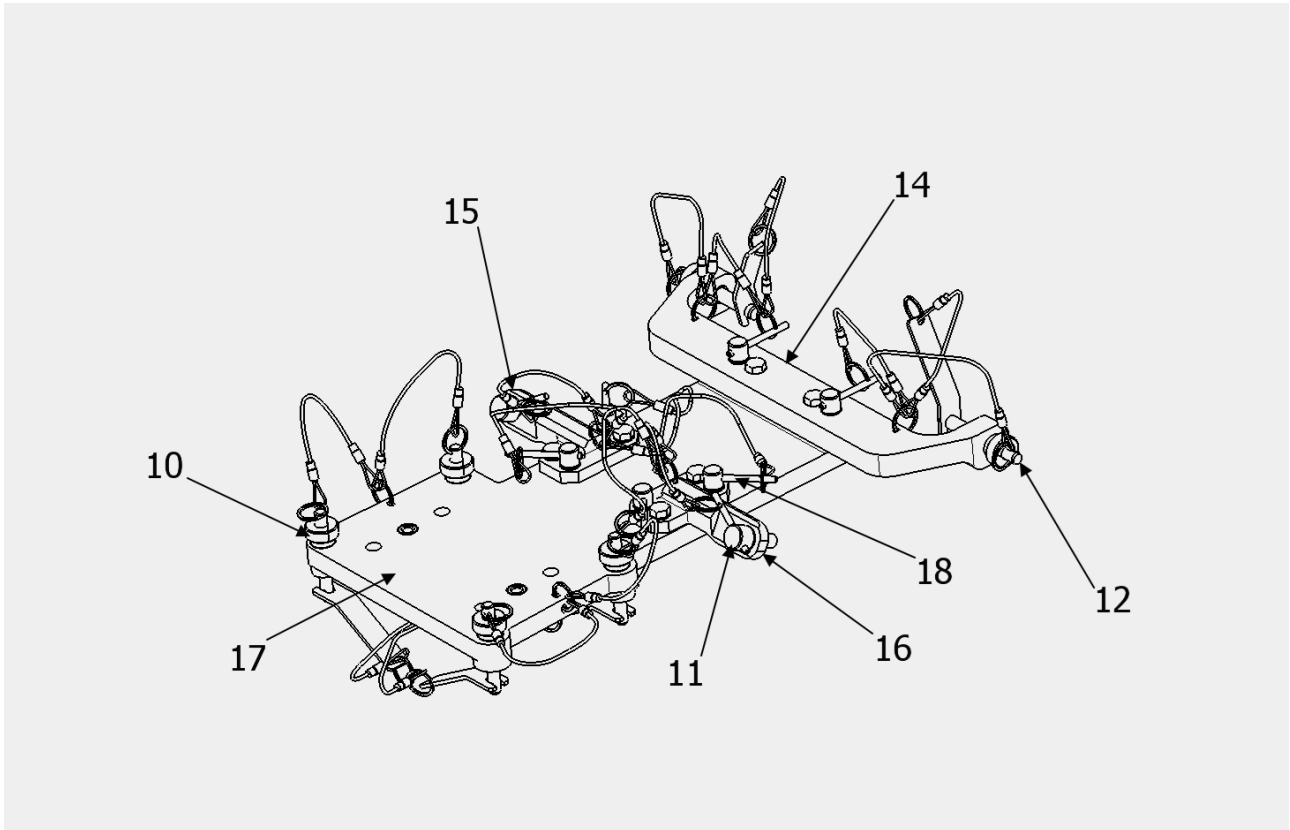


Figure 7: 3G5350G00931 TAILPLANE FITTING REPLACEMENT.

ITEM	P/N	DESCRIPTION
10	PEC 139-004-01-06	ASSIEME SPINA (<i>PIN ASSY, IGB FITTING</i>)
11	PEC 139-004-01-07	ASSIEME SPINA (<i>PIN ASSY, UPPER ATTACHMENTS</i>)
12	PEC 139-004-01-10	ASSIEME SPINA (<i>PIN ASSY, LOWER FITTING</i>)
14	PEC 139-004-01-03	ASSIEME ATTACCO PIANETTO LOWER (<i>FIXING LOWER TAILPLANE ASSY</i>)
15	PEC 139-004-01-05	BRACCETTO DX (<i>RIGHT ARM</i>)
16	PEC 139-004-01-04	BRACCETTO SX (<i>LEFT ARM</i>)
17	PEC 139-004-01-11	ASSIEME ATTACCO IGB (<i>FIXING IGB ASSY</i>)



PRIVATE ENGINEERING COMPANY
ITALIA s.r.l.

Doc. N°: PEC-0139-MAN-0001
Cliente: Leonardo Helicopter
Data: 12/02/2024
Issue:02

18 PEC 139-004-01-08

ASSIEME SPINA (*PIN ASSY*)

3.4 **TOOL APPLICABILITY**

The equipment is a structure made to position and to lock the T.G.B., I.G.B. and the tailplane fittings on the AW139 Fin Assy by mean the 3G5350G00831 TOLL SET, TAILPLANE /TGB/IGB FITTING INSTL.

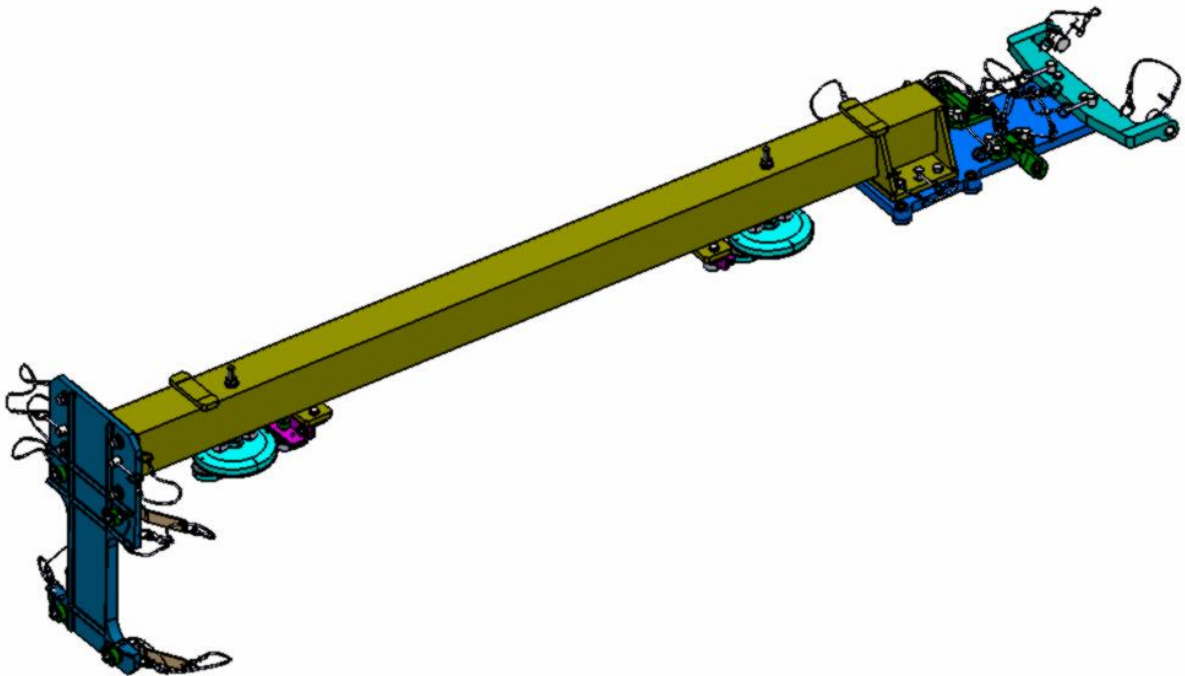


Figure 8: 3G5350G00831 TOOL SET, TAILPLANE /TGB/IGB FITTING INSTL.

This equipment is composed by two subassemblies: 3G5305G12331 and 3G5350G00931. 3G5305G12331 give you the chance to choice to connect it to the T.G.B. fitting and to the I.G.B. fitting (Figure 9 Ref.) . 3G5350G00931 give you the chance to choice to connect it to the I.G.B. fitting and the tail plane fitting (Figure 10 Ref.) . Further is possible to engage 3G5350G00931 to the tailplane and the I.G.B. fitting , and 3G5305G12331 on 3G5350G00931; with this last configuration you have the possibility to position the tailplane fitting in relation with T.G.B. fitting and vice versa (Figure 8 Ref.) .

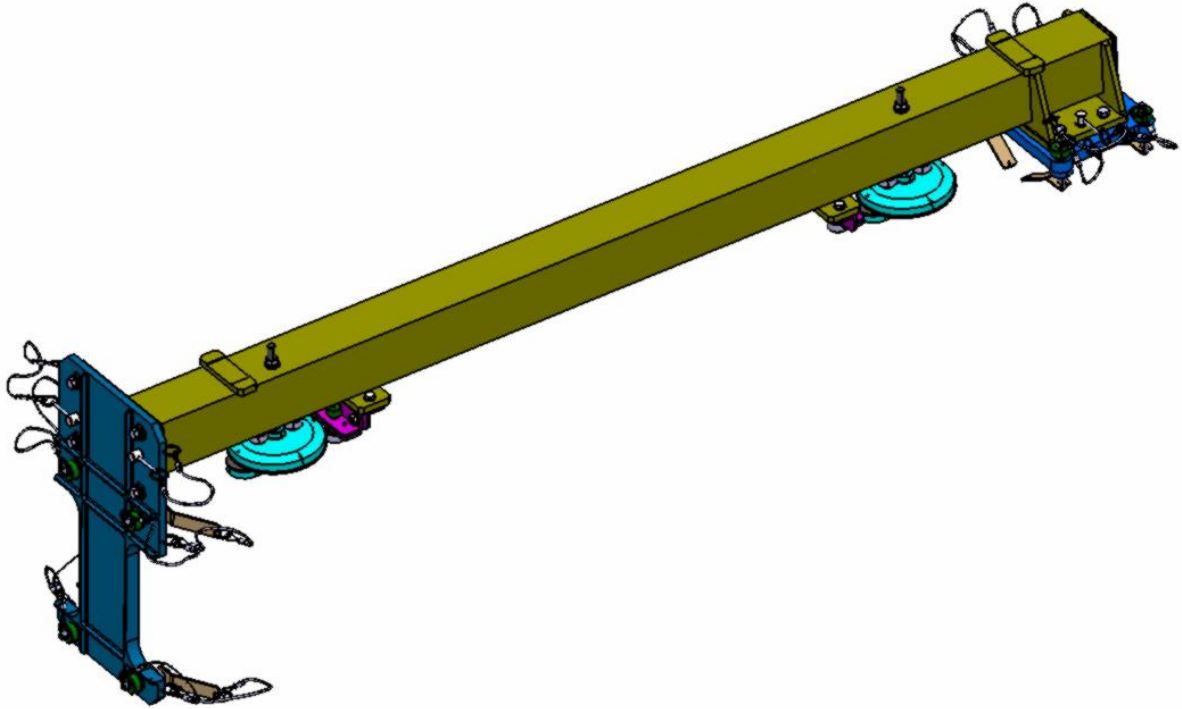


Figure 9: 3G5305G12331 TOOL, T.G.B. - I.G.B. FITTING INSTL.

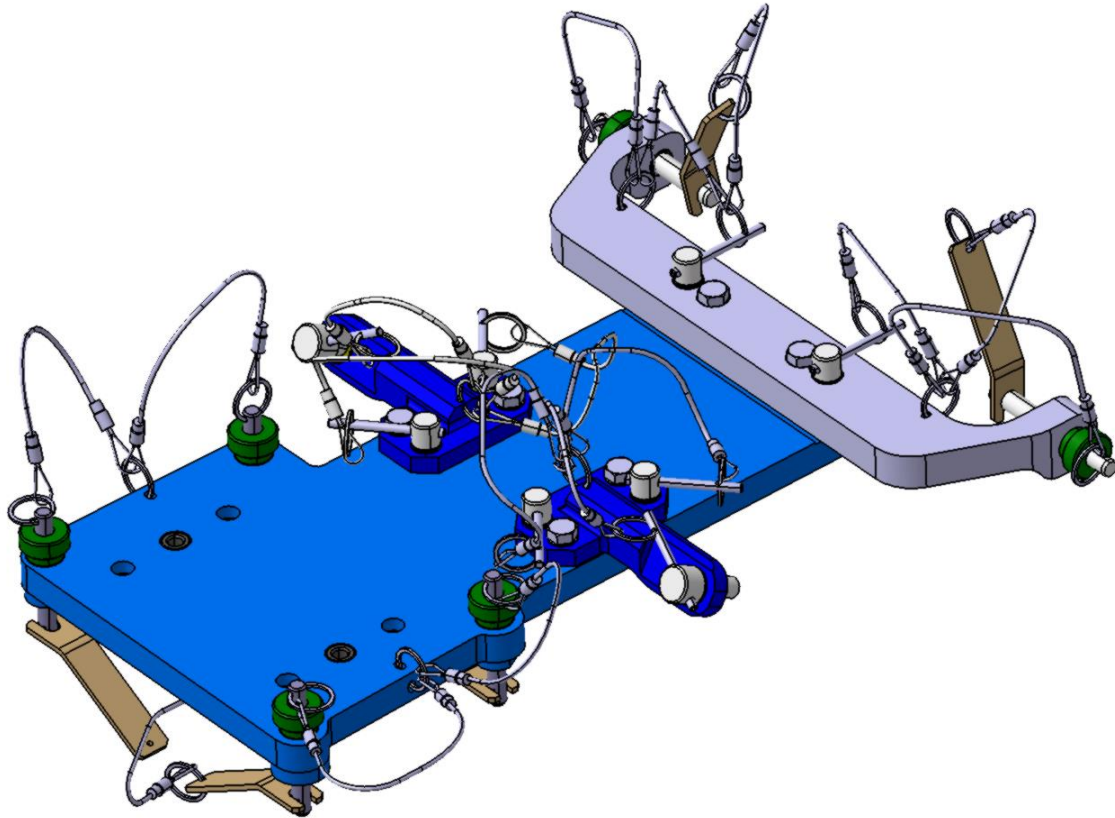


Figure 10: 3G5350G00931 TOOL, TAILPLANE FITTING INSTL.



Using this equipment there are three possible configuration to operate.

CONFIGURATION 1

3G5350G00931 is connected to the tailplane fittings and to the I.G.B. fitting; 3G5305G12331 is connected to the T.G.B. fitting and to 3G5350G00931.

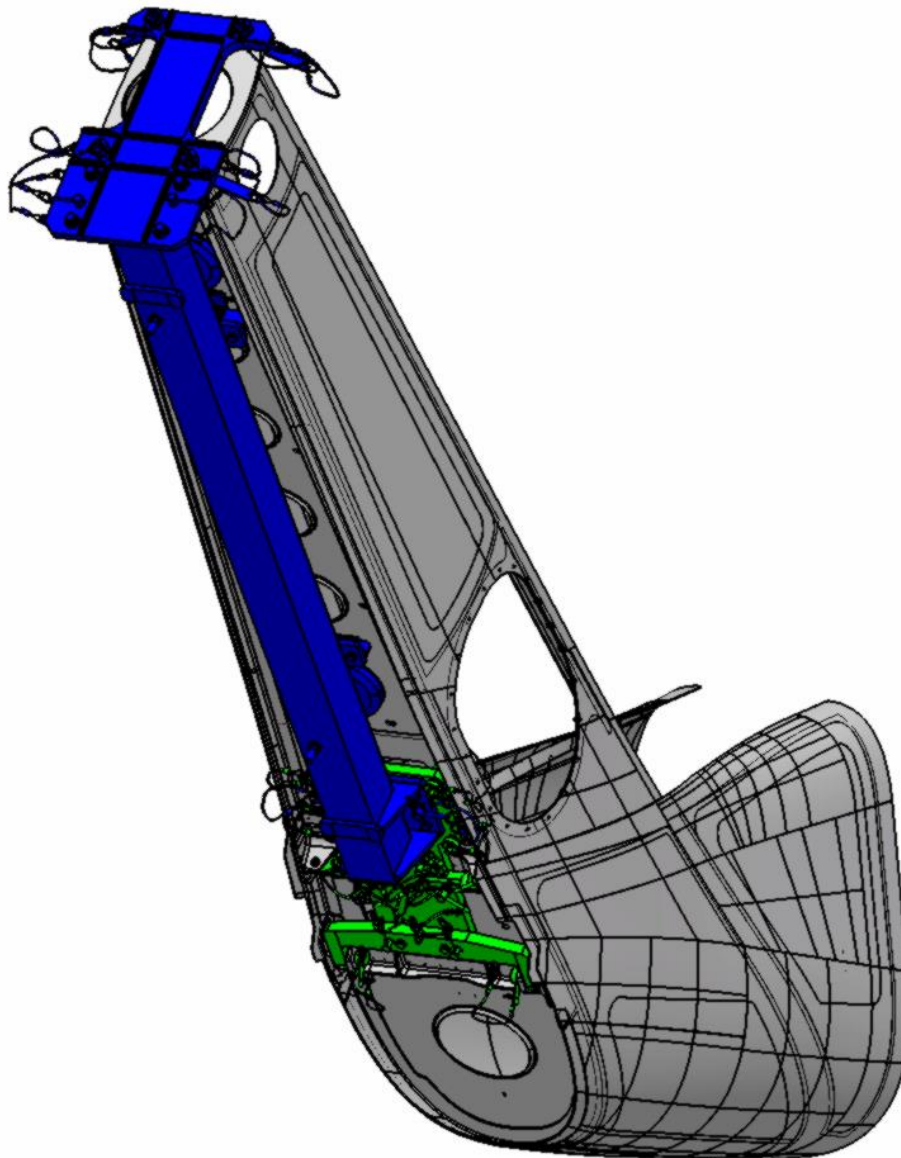


Figure 11: 3G5350G00831 - CONFIGURATION 1 .

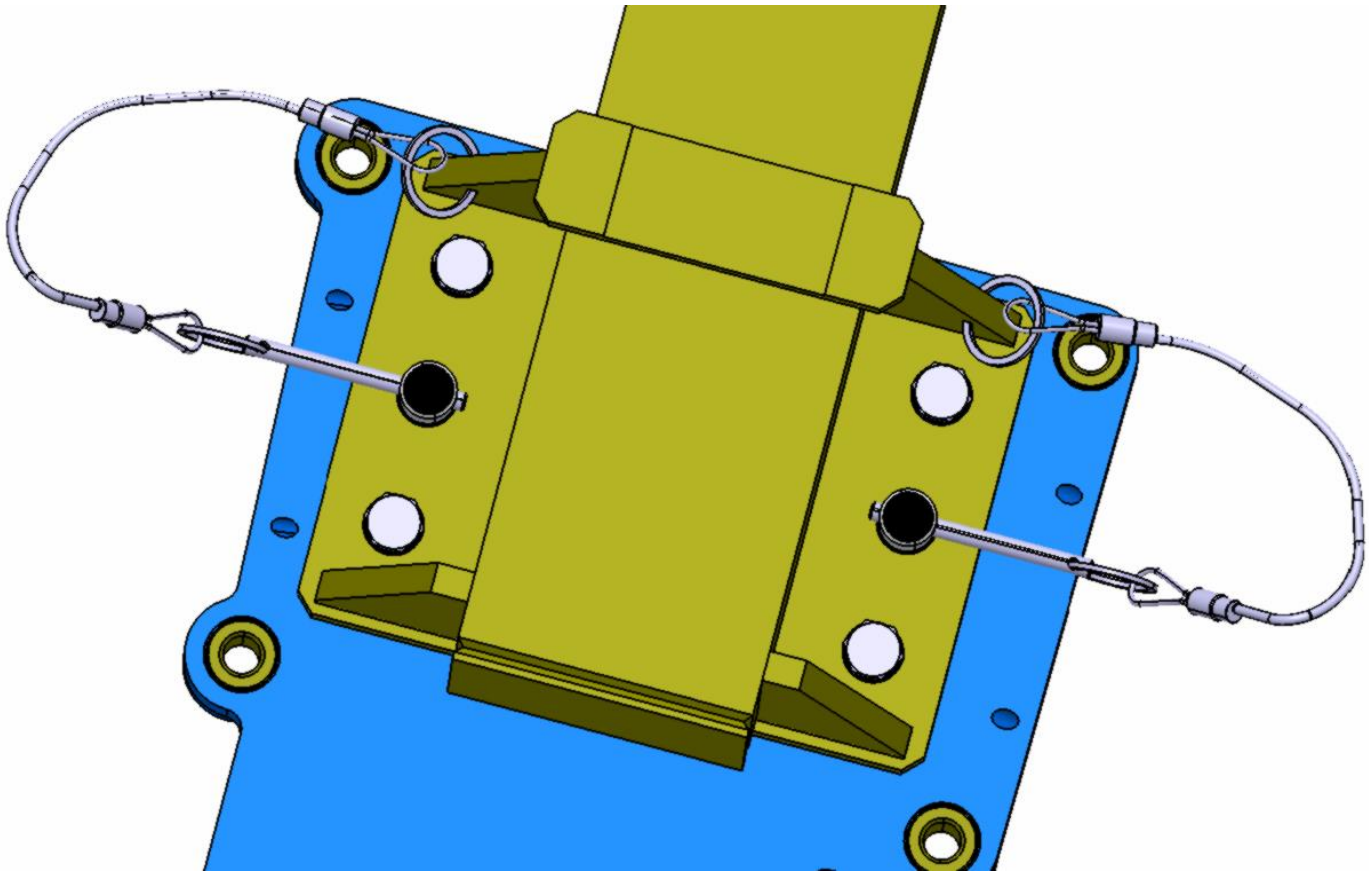


Figure 12: 3G5350G00831 - CONFIGURATION 1 - LINK BETWEEN 3G5305G12331 AND 3G5350G00931.



CONFIGURATION 2

3G5305G12331 is connected to the T.G.B. fitting and to I.G.B. fitting.

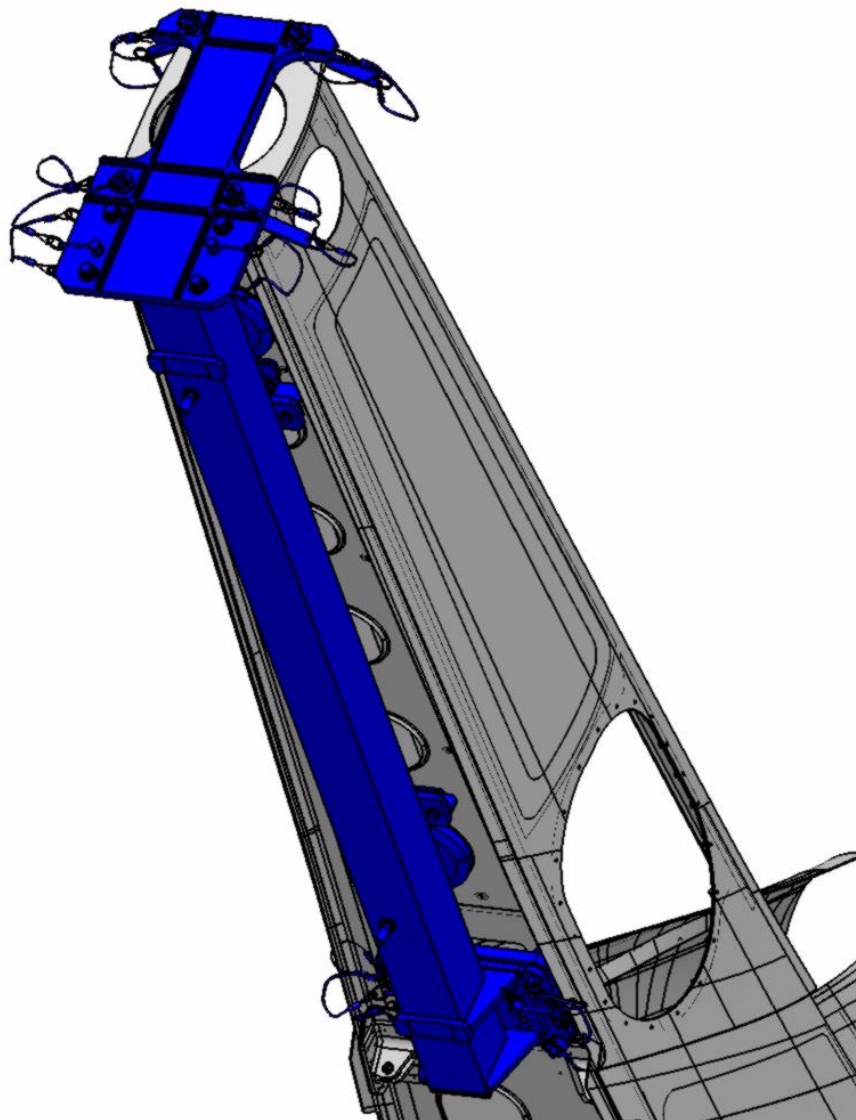


Figure 13: 3G5305G12331 - CONFIGURATION 2.

CONFIGURATION 3

3G5350G00931 is connected to the I.G.B. fitting and to the tailplane fittings.

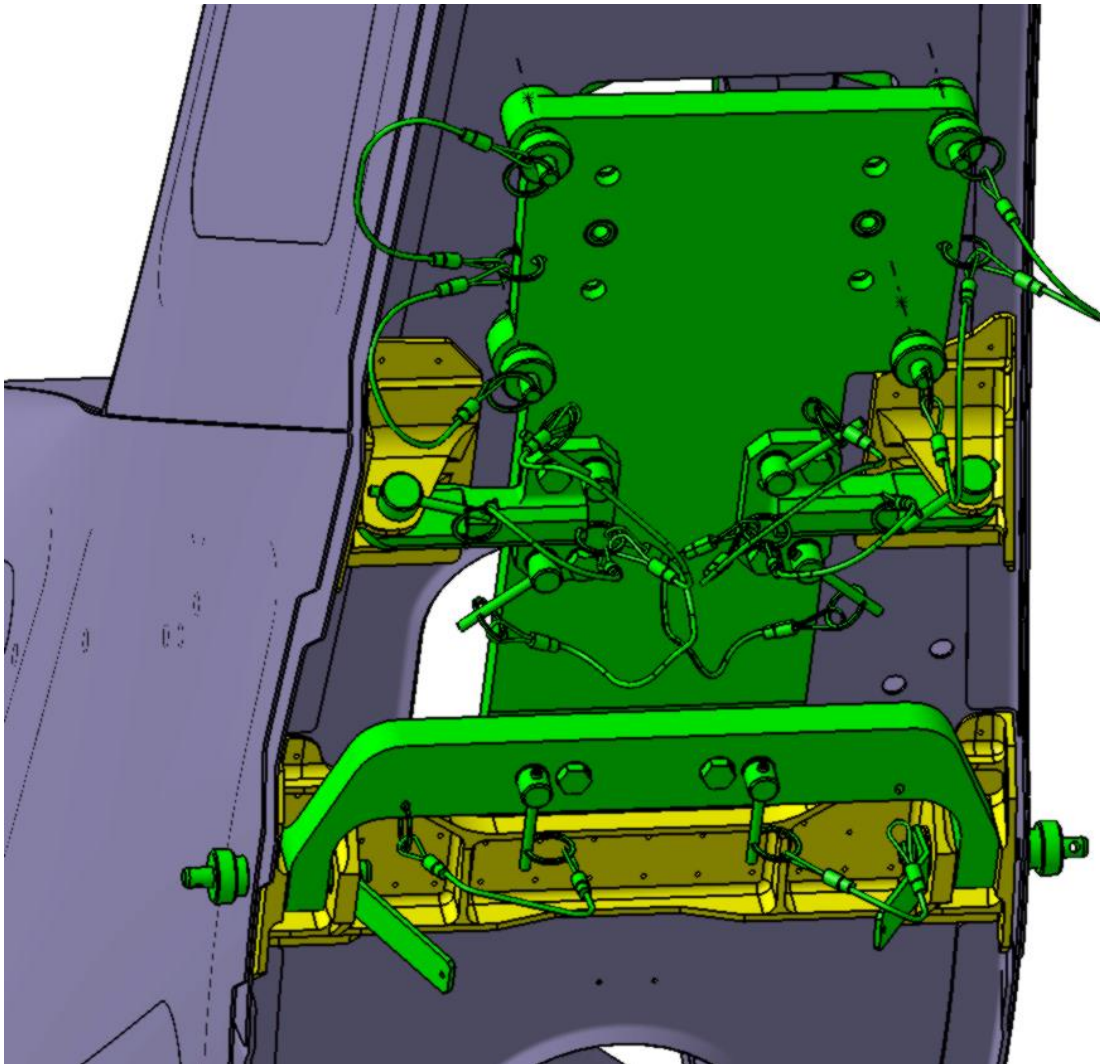


Figure 14: 3G5350G00931 - CONFIGURATION 3.



4 SAFETY NOTES

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



5 COMBINED USE OF 3G5305G12331 AND 3G5350G00931 TO INTERFACE WITH AW139 FIN ASSY

5.1 *T.G.B./I.G.B./TAILPLANE FITTING INSTALLATION*

To operate with the tool in configuration 1 you have to carry out the following instructions:

1. Remove the four pins ITEM 11 and ITEM 12 from their specific sites, and position the tailplane fitting near the 3G5350G00931 link holes.

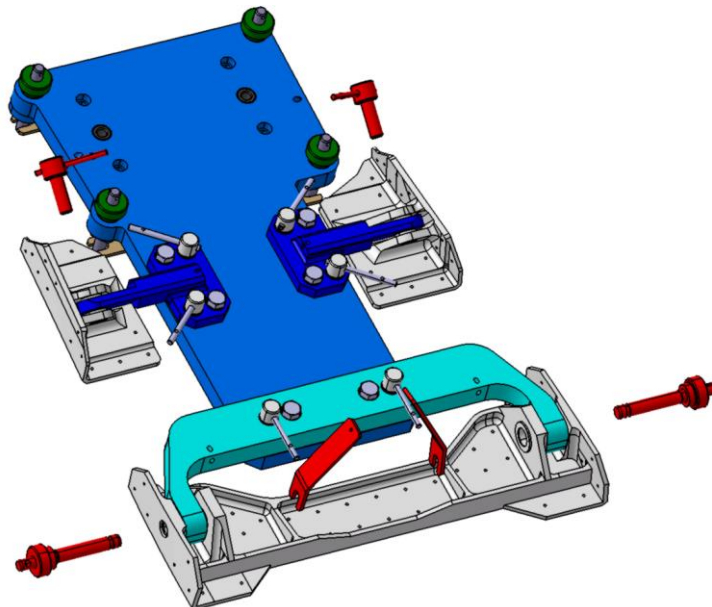


Figure 15: Phase 1 - TAILPLANE FITTING INSTALLATION.

2. Lock the tailplane fitting to the 3G5350G00931 using the pins removed in the previous point. When insert the pins in the lower tailplane fitting holes, pay attention to the presence of the HC flanged bushing, if they are not installed use the dummy bushing placed in 3G5350G00931 Tool Kit.

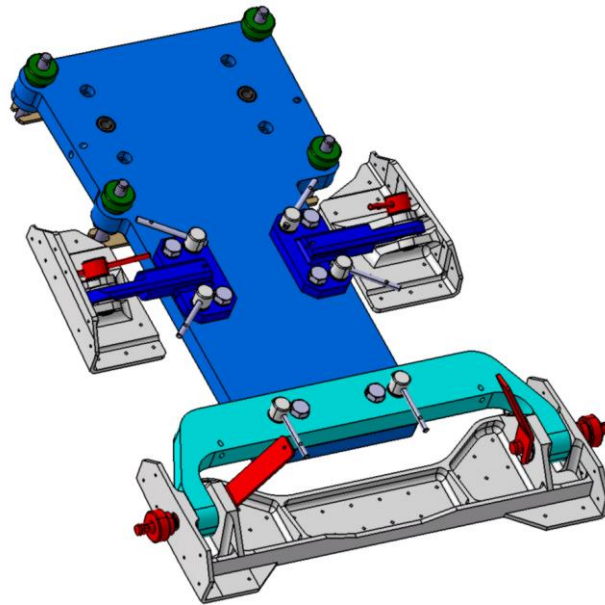


Figure 16: Phase 2 - TAILPLANE FITTING INSTALLATION.

3. Remove the four pins ITEM 10 from 3G5350G00931 and put in position the tailplane fitting/3G5350G00931 assembly in relation with the I.G.B. fitting link holes.

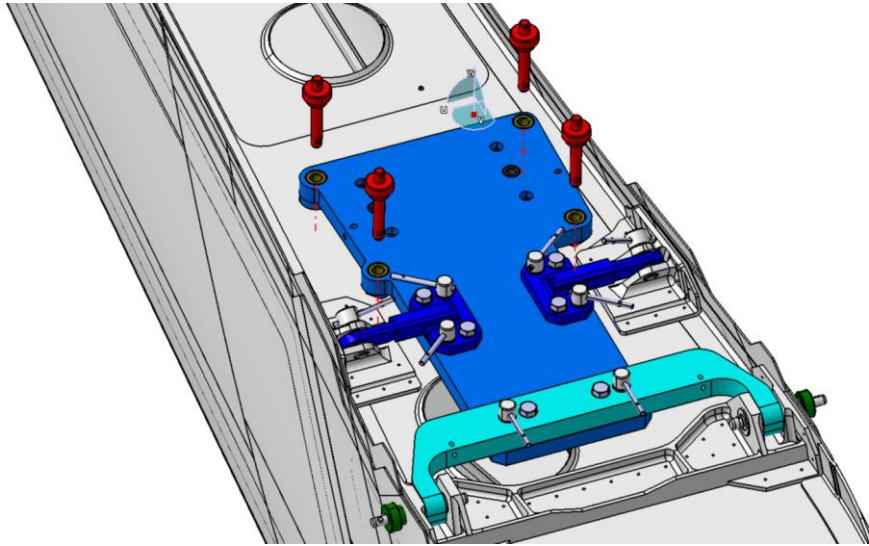


Figure 17: Phase 3 - TAILPLANE FITTING INSTALLATION.

4. Lock 3G5350G00931 using the four pins removed in the previous point.

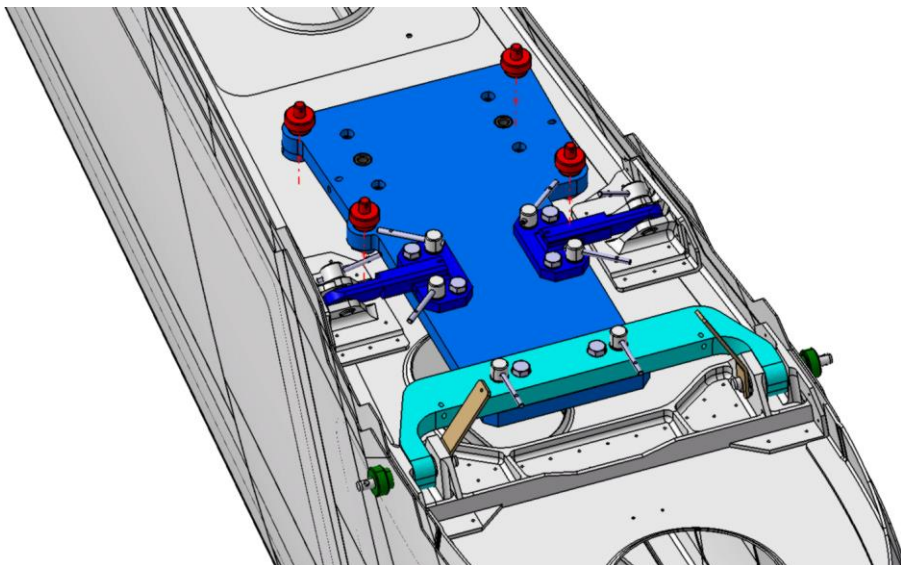


Figure 18: Phase 4 - TAILPLANE FITTING INSTALLATION.

5. Bring near ITEM 2 to 3G5350G00931.

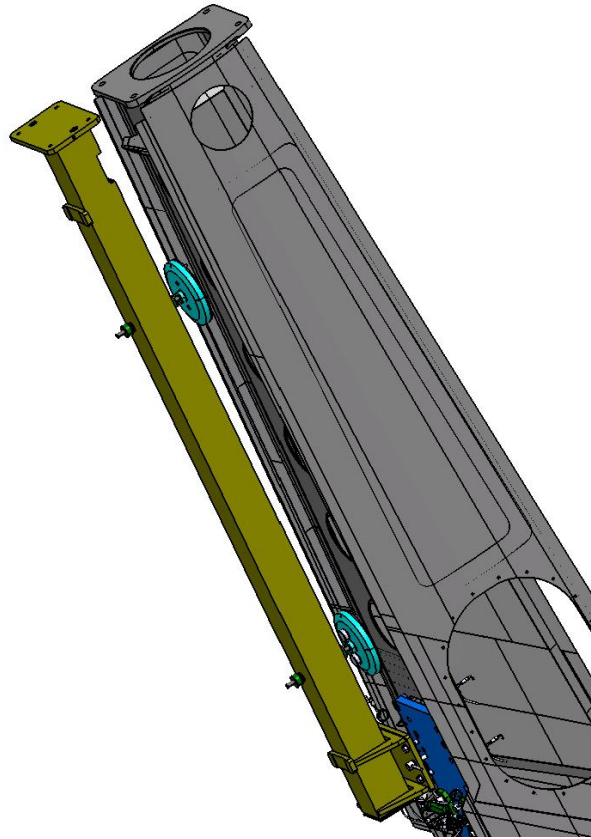


Figure 19: Phase 5 - T.G.B. FITTING INSTALLATION.

6. Position ITEM 2 on 3G5350G00931 using the two pin shown in the following images.

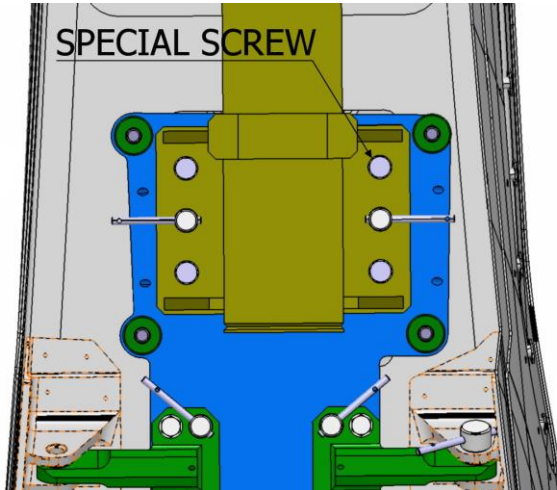


Figure 20: ITEM 1 FIXING.

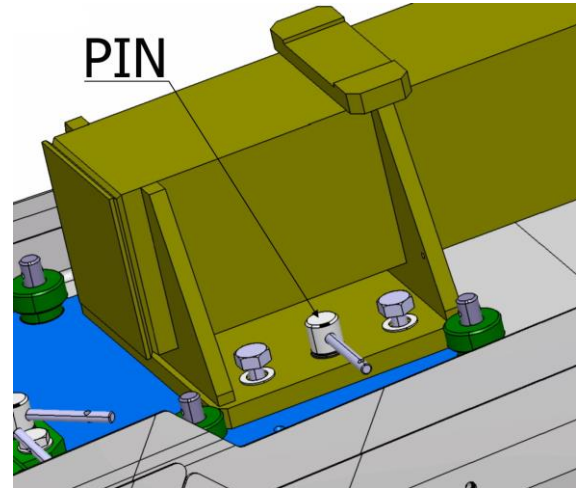


Figure 21: Phase 6 - T.G.B. FITTING
INSTALLATION.

7. Lock ITEM 2 to 3G5350G00931 using the four special screw shown in the fig.20.

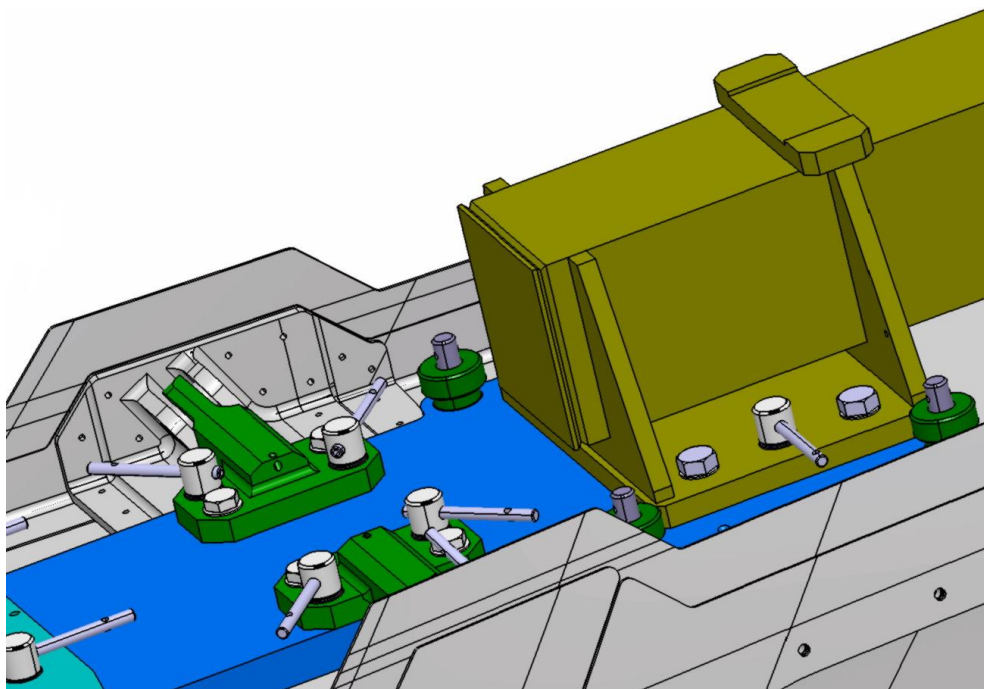


Figure 22: Phase 7 - T.G.B. FITTING INSTALLATION.

8. To have more stability regulate ITEM 6, ITEM 8 and ITEM 9 until you have the contact with the AW139 FIN ASSY.

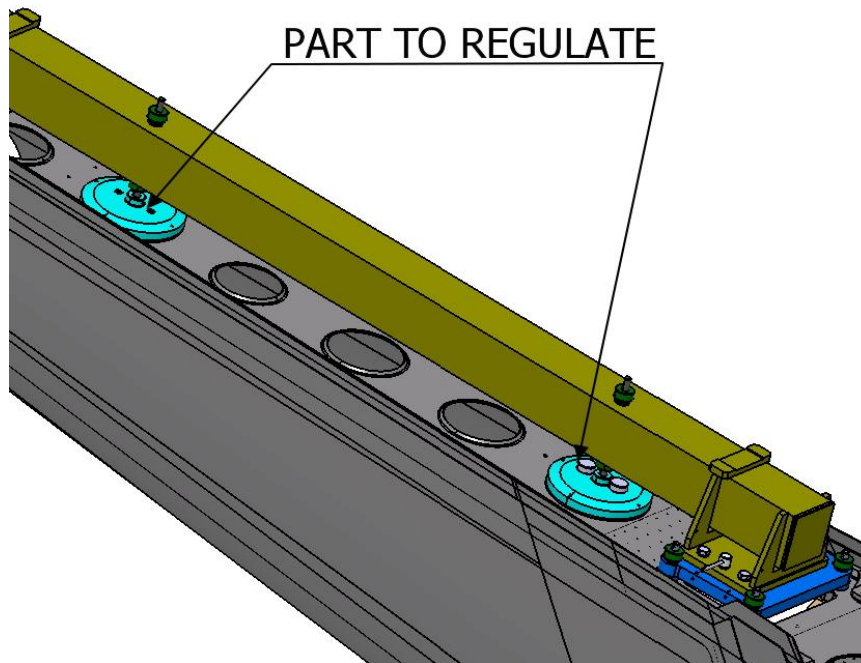


Figure 23: Phase 8 - T.G.B. FITTING INSTALLATION.

9. Lock the T.G.B fitting. to ITEM 1 using the four pins (ITEM 7) like shown in the following images.

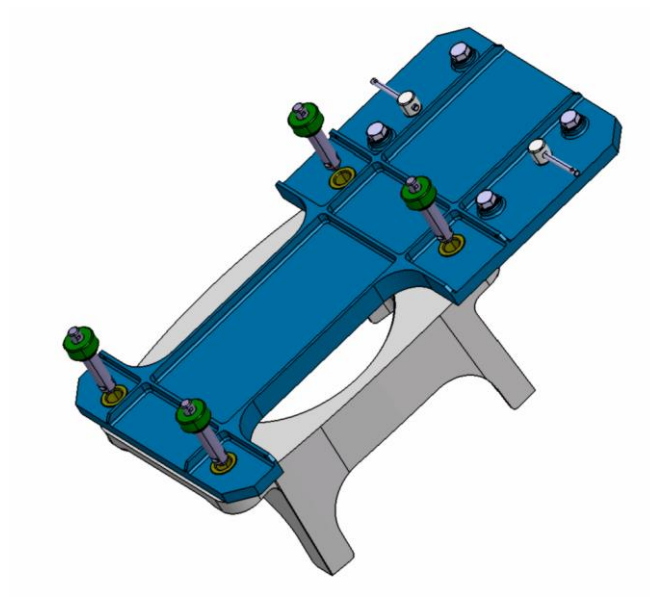


Figure 24: Phase 9 - T.G.B. FITTING INSTALLATION.

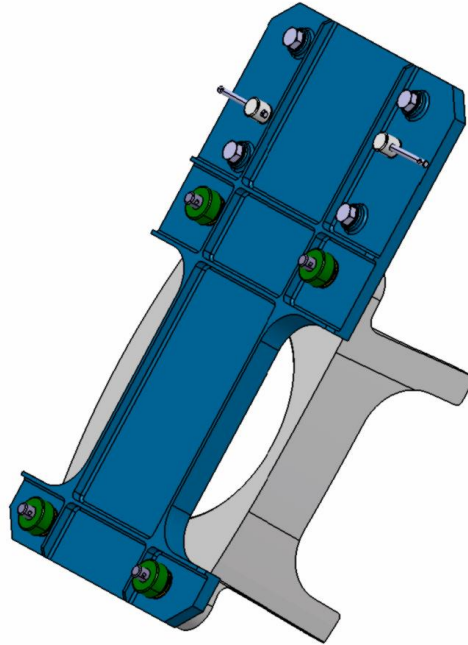


Figure 25: Phase 9 - T.G.B. FITTING INSTALLATION.

10. Lock the T.G.B. fitting / ITEM 1 assembly to the ITEM 2 (this one is just locked on the AW139 FIN ASSY) .

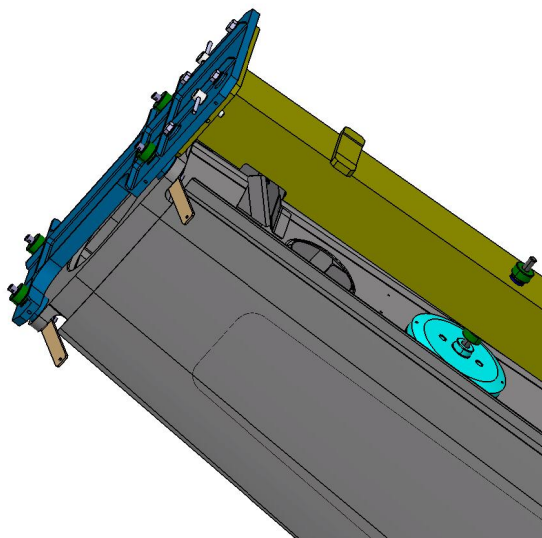
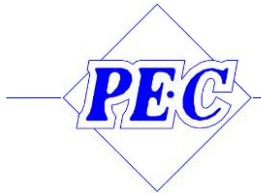


Figure 26: Phase 10 - T.G.B. FITTING INSTALLATION.

11. Lock the T.G.B. fitting and remove the tool from the AW139 FIN ASSY.



6 **3G5305G12331 TOOL, TGB/IGB FITTING INSTL**

6.1 **SCOPE**

6.1.1 **APPLICABILITY**

The contents of this document are meant to provide information on the **3G5305G12331 TOOL, TGB/IGB FITTING INSTL**.

6.1.2 **OBJECT**

The object of this document is to explain how to operate and maintain in service the **3G5305G12331 TOOL, TGB/IGB FITTING INSTL**.



6.2 3G5305G12331 TOOL, T.G.B./I.G.B. FITTING INSTL

6.2.1 TOP ASSEMBLY DRAWINGS

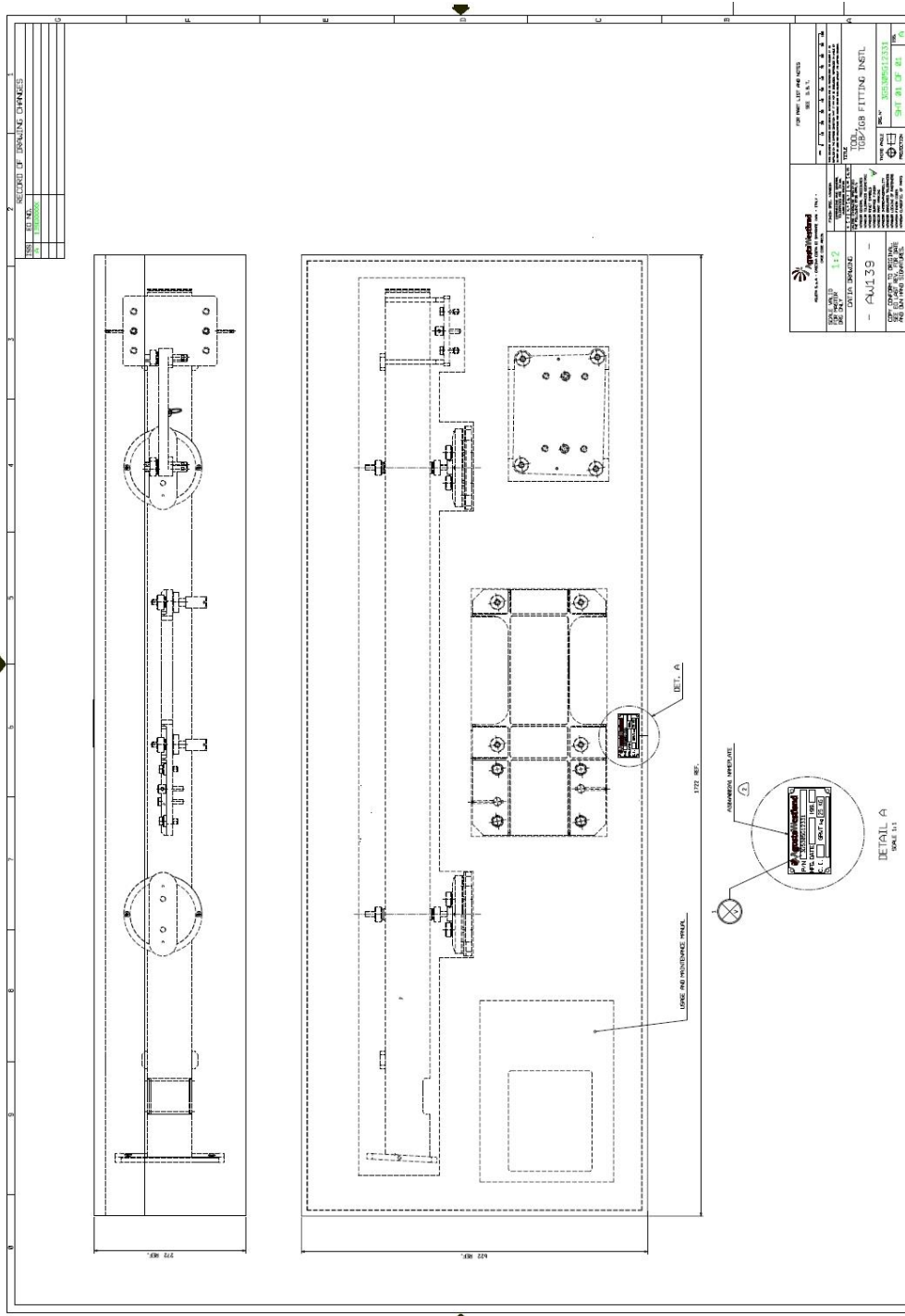
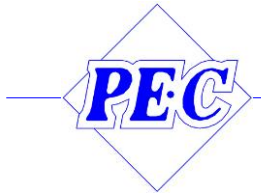


Figure 27: 3G5305G12331 TOOL, TGB/IGB FITTING INSTL



6.2.2 IDENTIFICATION TAG

P/N	<input type="text" value="3G5305G12331"/>
MFG. DATE	<input type="text"/>
ISS.	<input type="text"/>
C. I.	<input type="text"/>
GRWT kg	<input type="text" value="25 kg"/>
<input type="text"/>	

Figure 28: tag with P/N

6.3 INTERFACE 3G5305G12331 WITH AW139 FIN ASSY

6.3.1 T.G.B. FITTING INSTALLATION

To carry out the T.G.B. fitting installation you have to follow the next instructions:

1. Remove the pins from the plate ITEM 3 and position it near the I.G.B. fitting link holes.

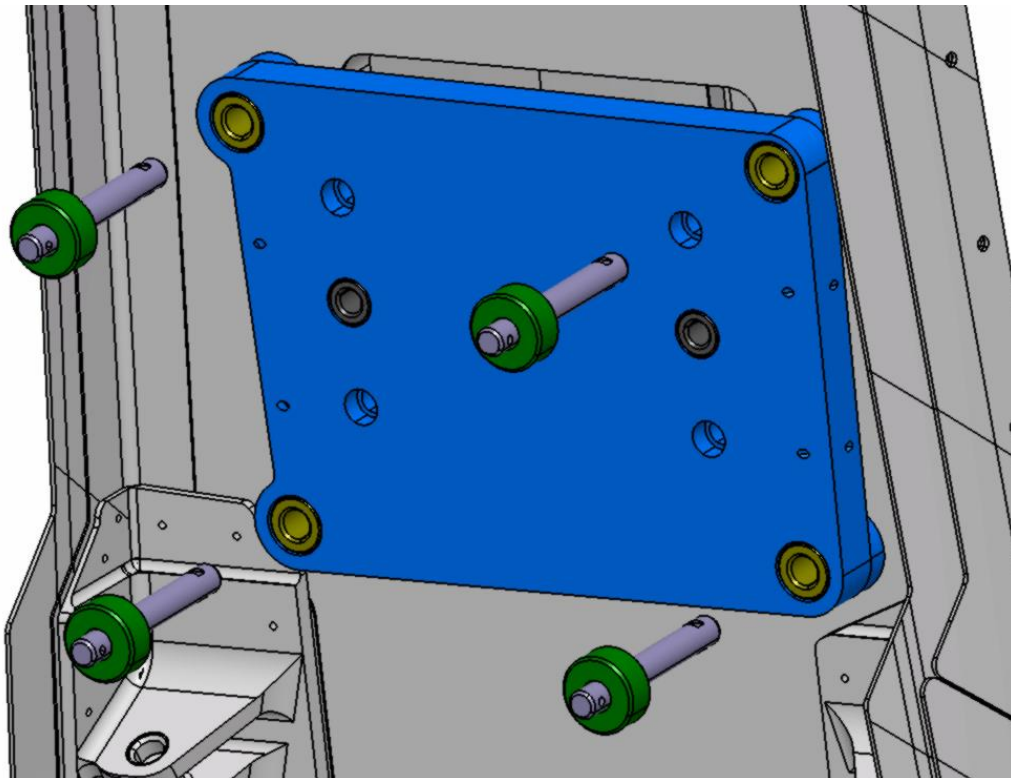


Figure 29: Phase 1 - T.G.B. FITTING INSTALLATION.

2. Insert the pin and lock ITEM 3 to the AW139 Fin Assy.

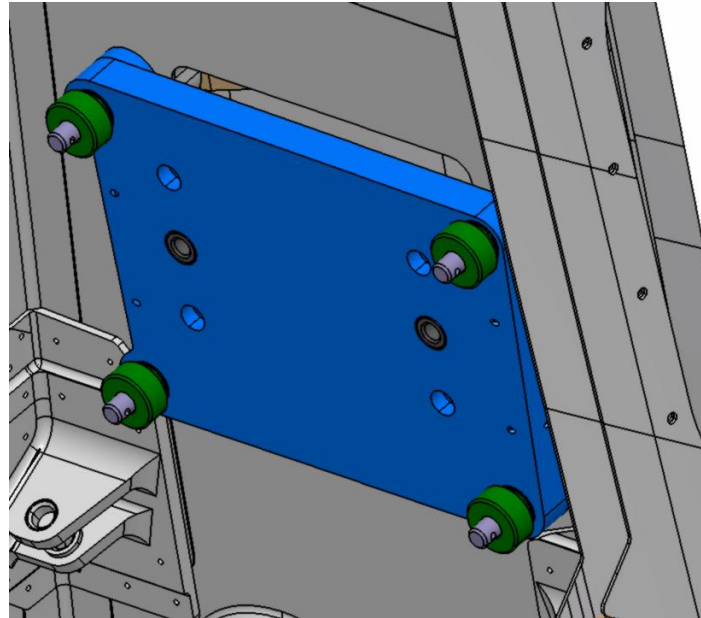


Figure 30: Phase 2 - T.G.B. FITTING INSTALLATION.

3. Bring near ITEM 2 to ITEM 3.

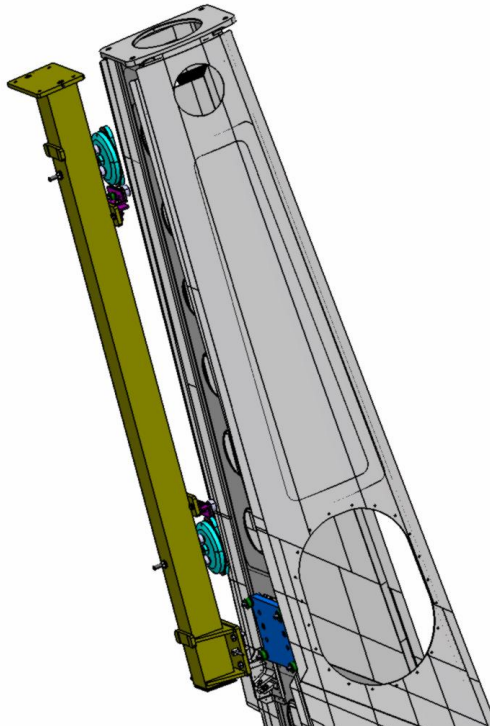


Figure 31: Phase 3 - T.G.B. FITTING INSTALLATION.

4. Position ITEM 2 on ITEM 3 using the two pin shown in the following images.

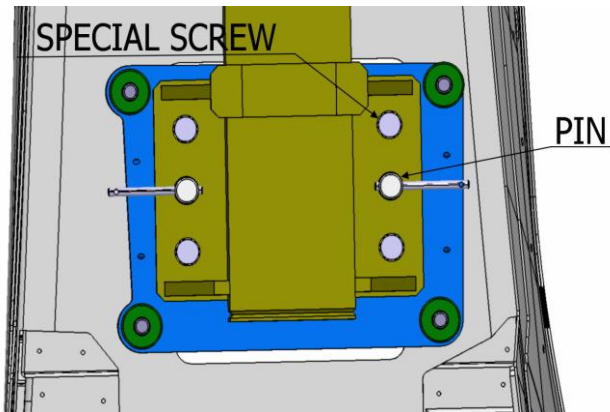


Figure 32: PEC 139-003-01-03 FIXING.

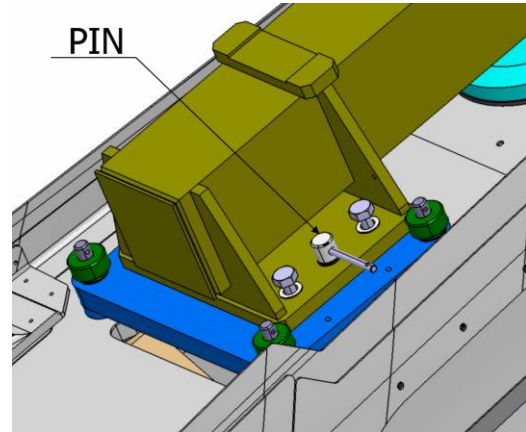


Figure 33: Phase 4 - T.G.B. FITTING INSTALLATION.

5. Lock ITEM 2 to ITEM 3 using the four special screw shown in the fig.32.

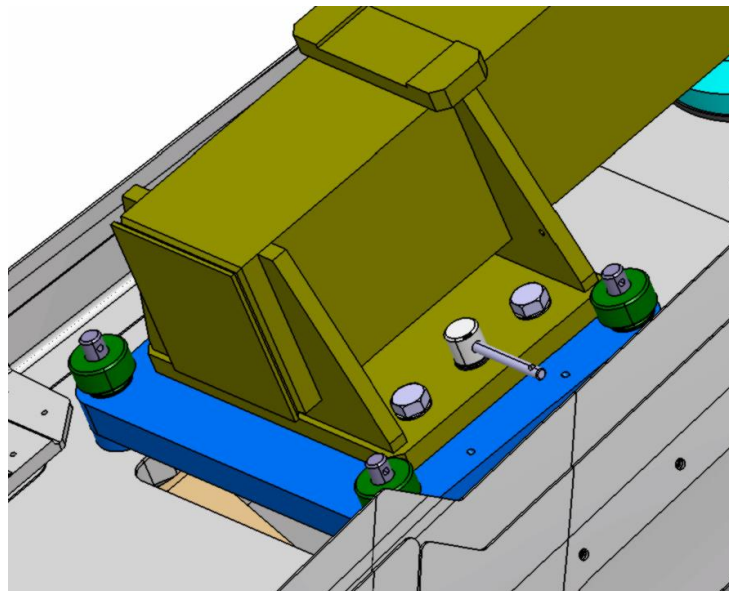


Figure 34: Phase 5 - T.G.B. FITTING INSTALLATION.

6. To have more stability regulate ITEM 6, ITEM 8 and ITEM 9 until have the contact with the AW139 FIN ASSY.

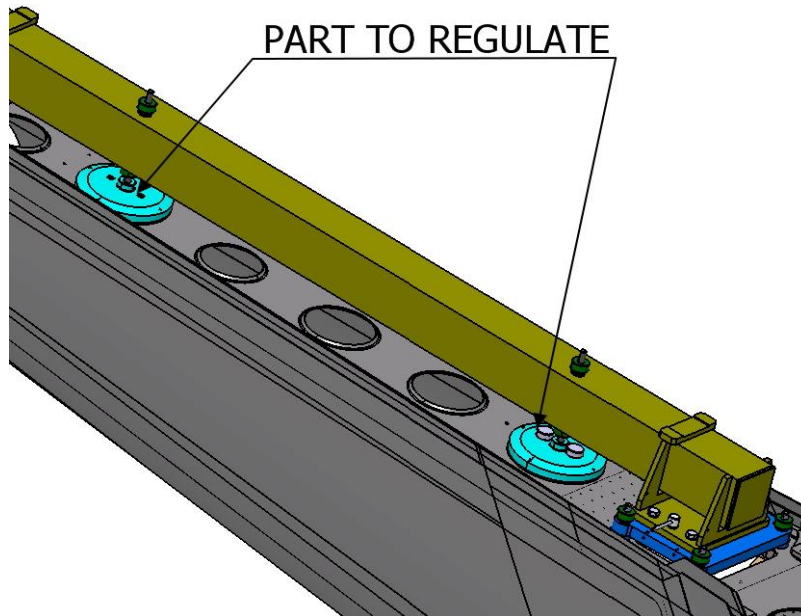


Figure 35: Phase 6 - T.G.B. FITTING INSTALLATION.

7. Lock the T.G.B fitting to ITEM 1 using the four pins (ITEM 7) like shown in the following images.

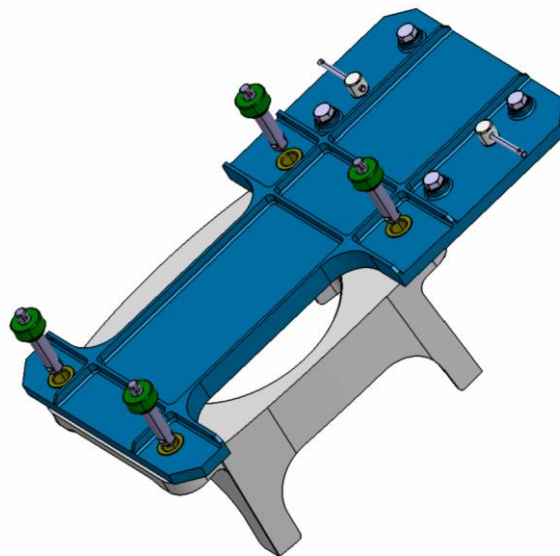


Figure 36: Phase 7 - T.G.B. FITTING INSTALLATION.

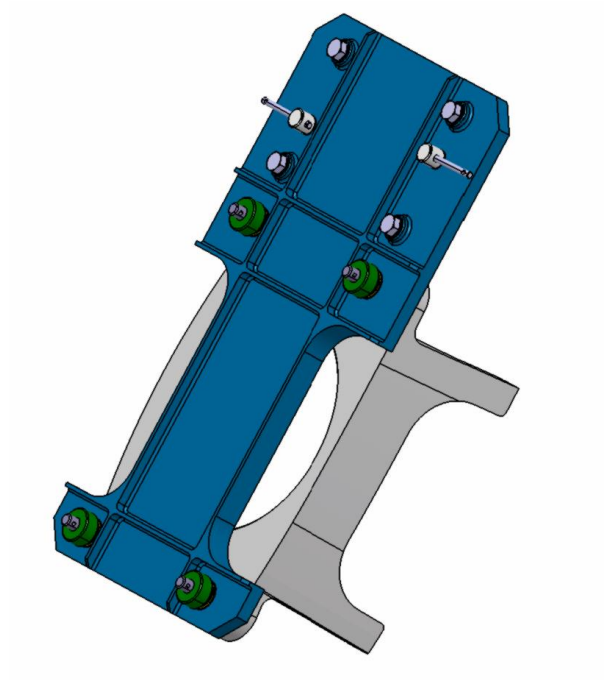


Figure 37: Phase 7 - T.G.B. FITTING INSTALLATION.

8. Lock the T.G.B. fitting / ITEM 1 assembly to the ITEM 2 (this one is just locked on the AW139 Fin Assy) .

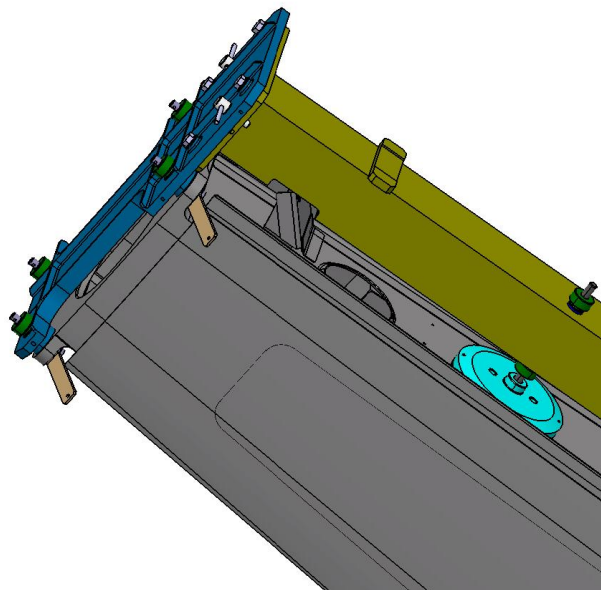


Figure 38: Phase 8 - T.G.B. FITTING INSTALLATION.

9. Lock the T.G.B. fitting and remove the tool from the AW139 Fin Assy .

6.3.2 I.G.B. FITTING INSTALLATION

To carry out the I.G.B. fitting installation you have to follow the next instructions:

1. Lock the ITEM 1 to the T.G.B fitting using the four pins (ITEM 7) like shown in the following images (in these pictures the AW139 Fin Assy is omitted for clarity).

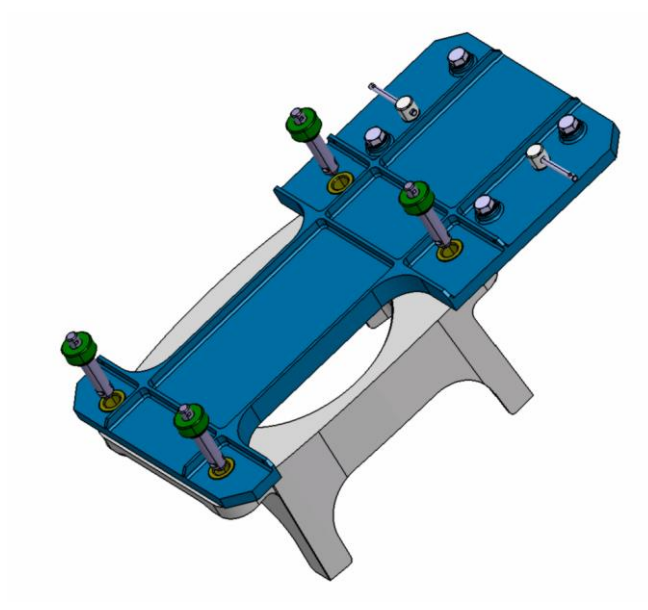


Figure 39: Phase 1 - I.G.B. FITTING INSTALLATION.

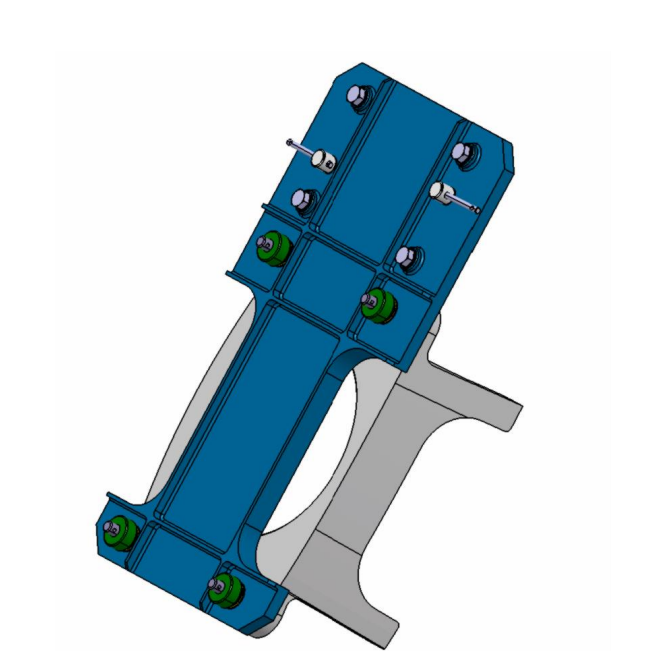


Figure 40: Phase 1 - I.G.B. FITTING INSTALLATION.

2. Lock the ITEM 3 to the ITEM 2 using the pins and screws in the figure 32 and in the figure 33.
3. Connect the assembly ITEM 2 / ITEM 3 to the ITEM 1 (this one is just locked on the AW139 Fin Assy).

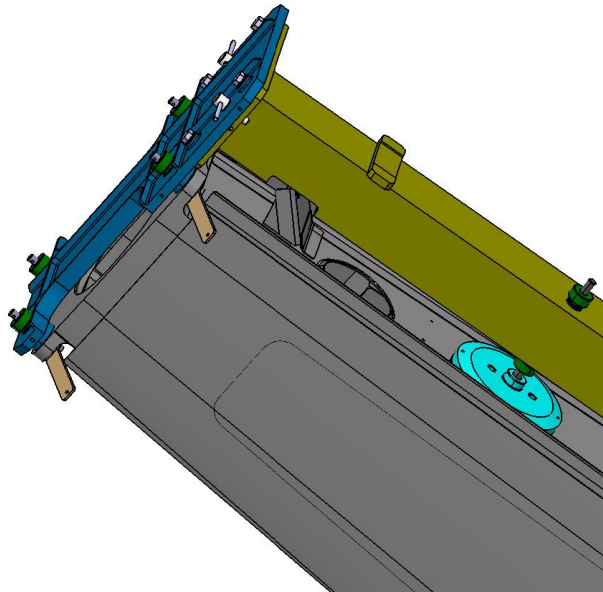


Figure 41: Phase 3 - I.G.B. FITTING INSTALLATION.

4. To have more stability regulate ITEM 6, ITEM 8 and ITEM 9 until have the contact with the AW139 FIN ASSY.

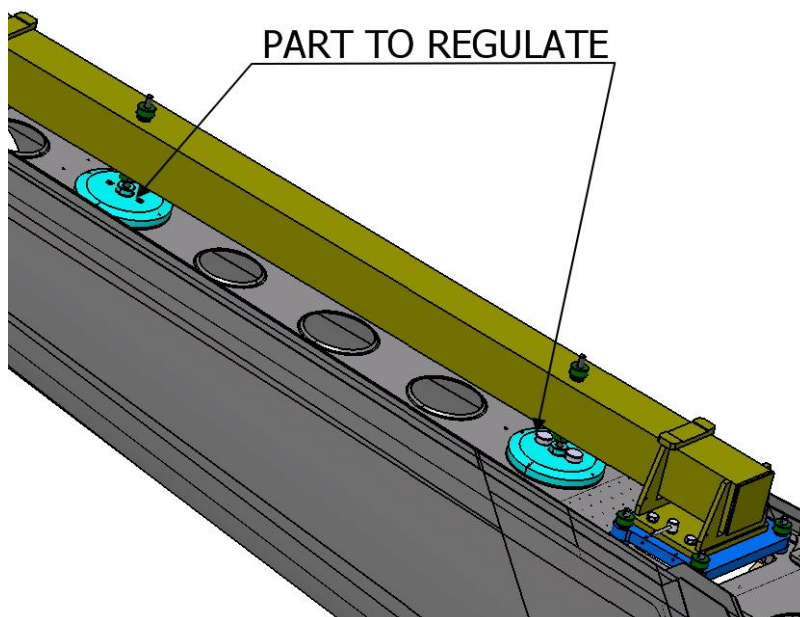


Figure 42: Phase 4 - I.G.B. FITTING INSTALLATION.



5. Lock the I.G.B. fitting using the four pin shown in figure 29 and remove the tool from the AW139 Fin Assy.

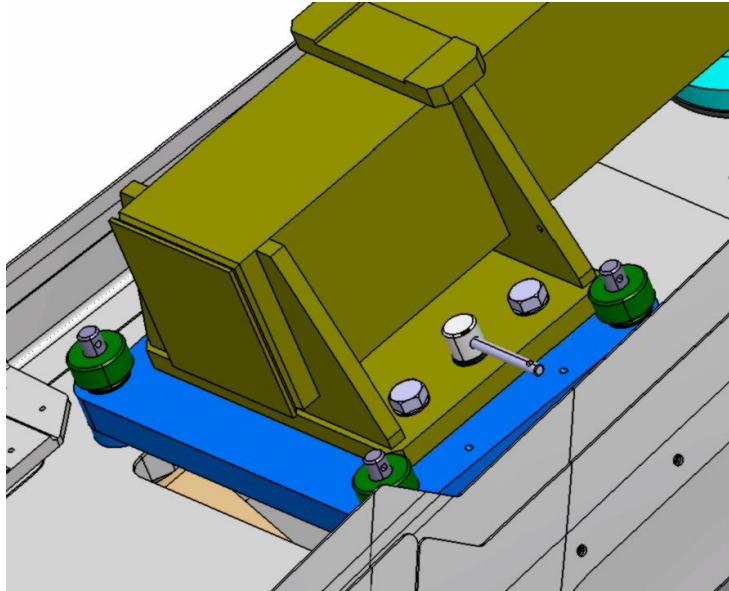
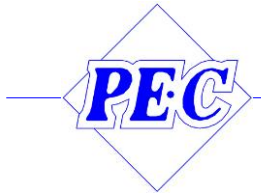


Figure 43: Phase 5 - I.G.B. FITTING INSTALLATION.



7 3G5350G00931 TOOL, TAILPLANE FITTING INSTL

7.1 SCOPE

7.1.1 APPLICABILITY

The contents of this document are meant to provide information on the **3G5350G00931 TOOL, TAILPLANE FITTING INSTL.**

7.1.2 OBJECT

The object of this document is to explain how to operate and maintain in service the **3G5350G00931 TOOL, TAILPLANE FITTING INSTL.**



7.2 3G5350G00931 TOOL, TAILPLANE FITTING INSTL

7.2.1 TOP ASSEMBLY DRAWINGS

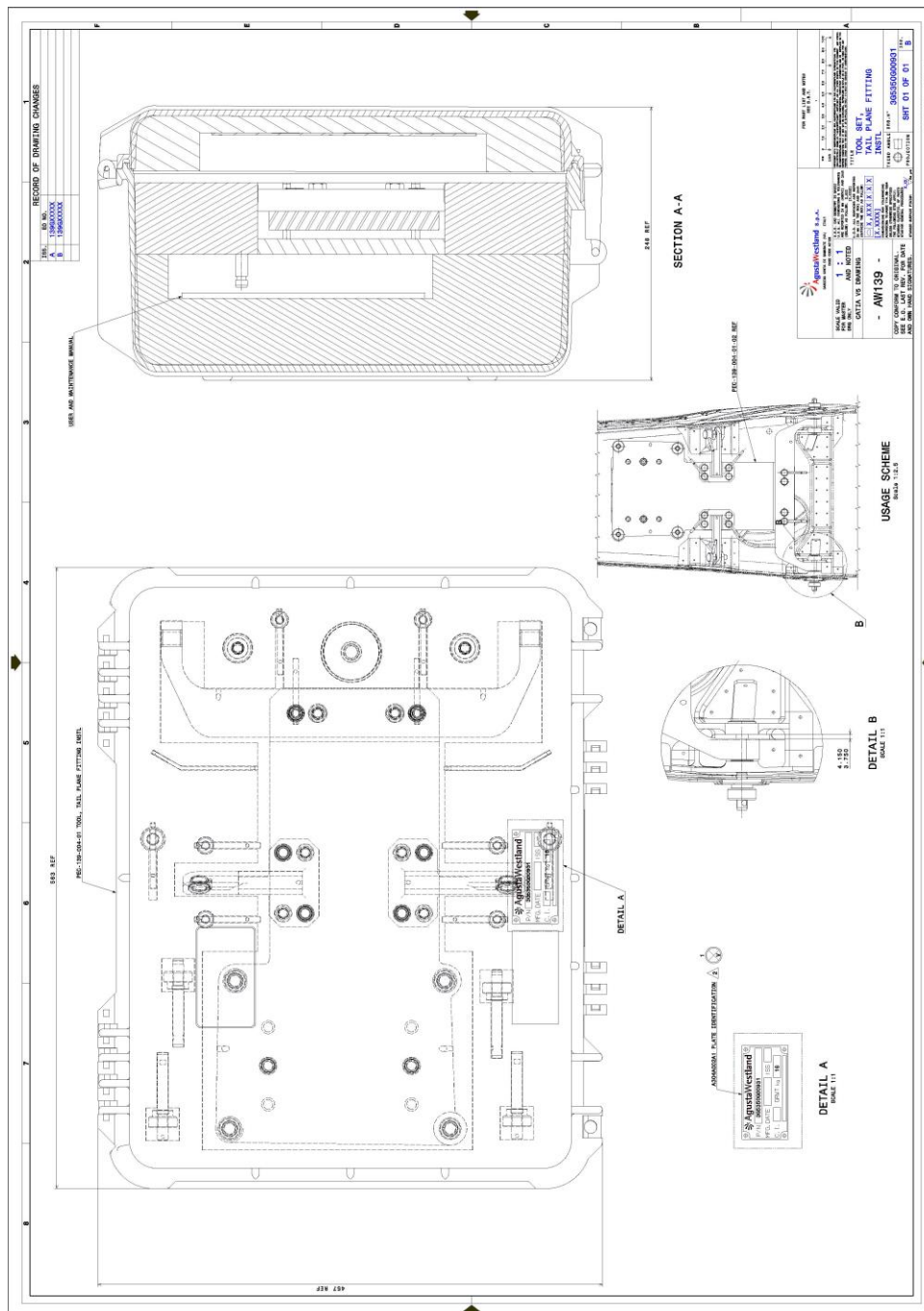


Figure 44: 3G5350G00931 TOOL, TAILPLANE FITTING INSTL



7.2.2 IDENTIFICATION TAG

P/N	<input type="text" value="3G5350G00931"/>
MFG. DATE	<input type="text"/>
ISS.	<input type="text"/>
C. I.	<input type="text"/>
GRWT kg	<input type="text" value="16 kg"/>
<input type="text"/>	

Figure 45: tag with P/N

7.3 INTERFACE 3G5350G00931 WITH AW139 FIN ASSY

7.3.1 TAILPLANE FITTING INSTALLATION USING I.G.B. REFERENCE

To carry out the tailplane fitting installation you have to follow the next instructions:

1. Remove the four pins ITEM 11 and ITEM 12 from their specific sites, and position the tailplane fitting near the 3G5350G00931 link holes.

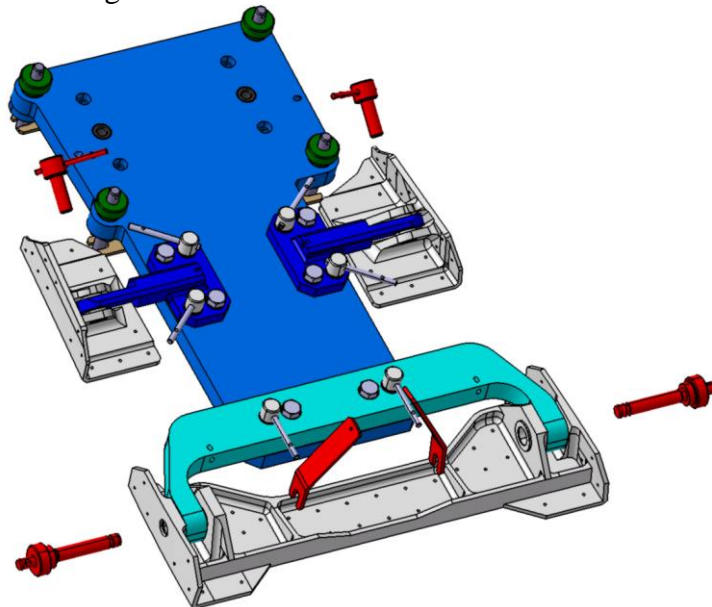


Figure 46: Phase 1 - TAILPLANE FITTING INSTALLATION.

2. Lock the tailplane fitting to the 3G5350G00931 using the pins removed in the previous point. When insert the pins in the lower tailplane fitting holes, pay attention to the presence of the HC flanged bushing, if they are not installed use the dummy bushing placed in 3G5350G00931 Tool Kit.

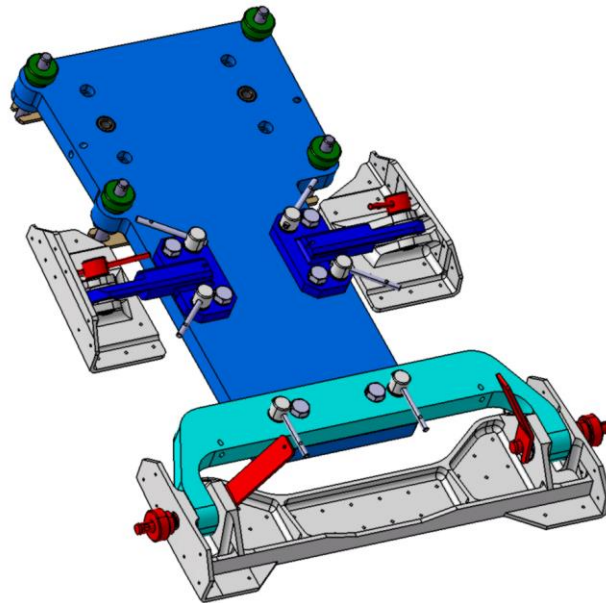


Figure 47: Phase 2 - TAILPLANE FITTING INSTALLATION.

3. Remove the four pins ITEM 10 from 3G5350G00931 and put in position the tailplane fitting/3G5350G00931 assembly in relation with the I.G.B. fitting link holes.

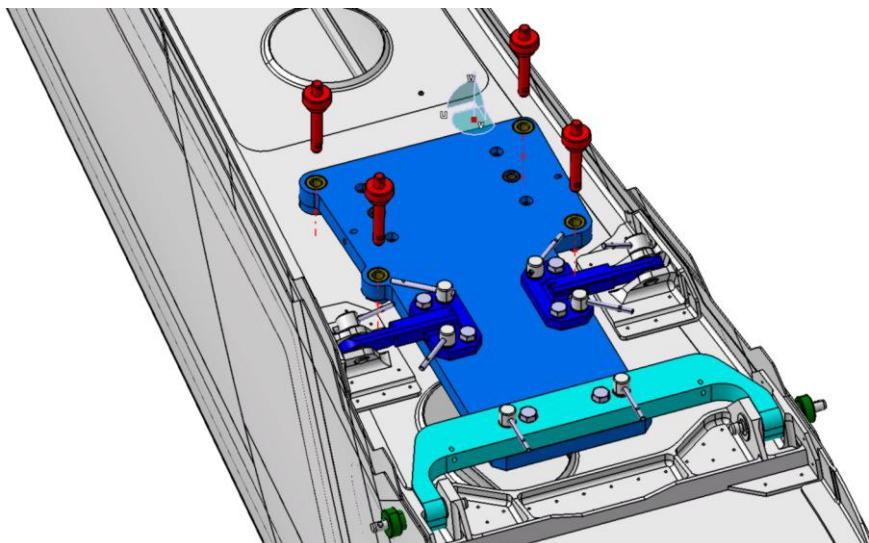
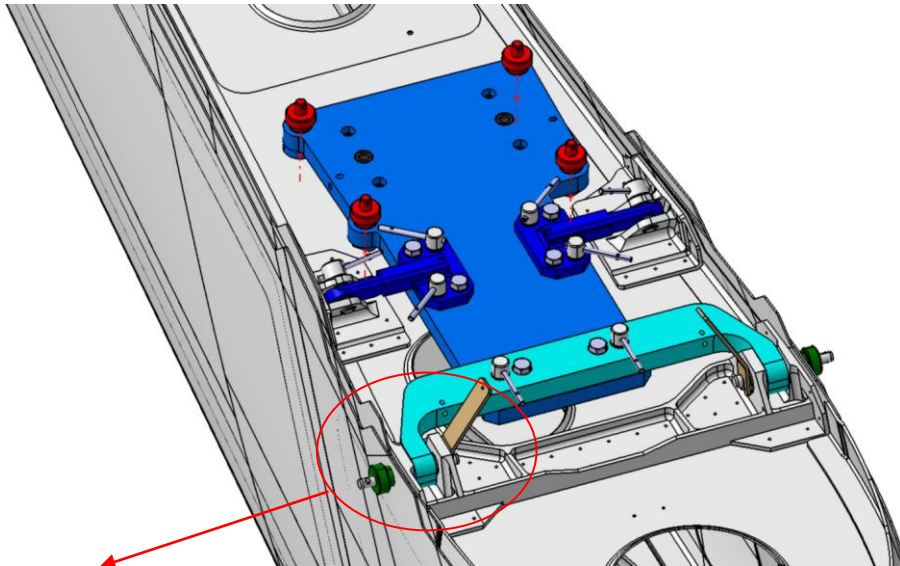


Figure 48: Phase 3 - TAILPLANE FITTING INSTALLATION.

4. Lock 3G5350G00931 using the four pins removed in the previous point.



See Detail "A"

Figure 49: Phase 4 - TAILPLANE FITTING INSTALLATION.

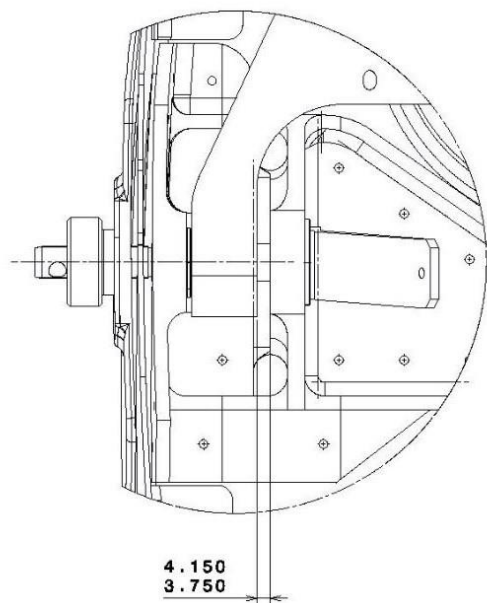
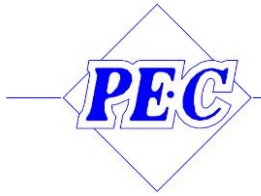


Figure 50: DETAIL "A".

5. Lock the tailplane fitting and remove the tool.



6.

8 MAINTENANCE

8.1 **STANDARD MAINTENANCE**

This equipment does not need of particular maintenance operations.

Before every using you have to do a visual check of all welding to find eventually cracks or other superficially anomaly.

Every year change all tightening elements.

Check the general appearance of the tool valuing also the oxidation state of the tool, if necessary send the tool back to the manufacturer.

8.2 **PLANNED MAINTENANCE**

Every year check all welding with a visual check to find eventually cracks or other superficially anomaly, if necessary send the tool back to the manufacturer.

Every year check all welding, if necessary send the tool back to the manufacturer.

Every year check all tightening elements.

Every year check all tolerance dimensions on the pins and the associated holes.

Check the general appearance of the tool valuing also the oxidation state of the tool, if necessary send the tool back to the manufacturer.

Every five years or one thousand operative cycles send the tool to the manufacturer.

It is best in user interest to send the tool back to manufacturer to do what requested and to check.

8.3 SPARE PARTS LIST

Referring to the previous maintenance operation you have a spare parts list:

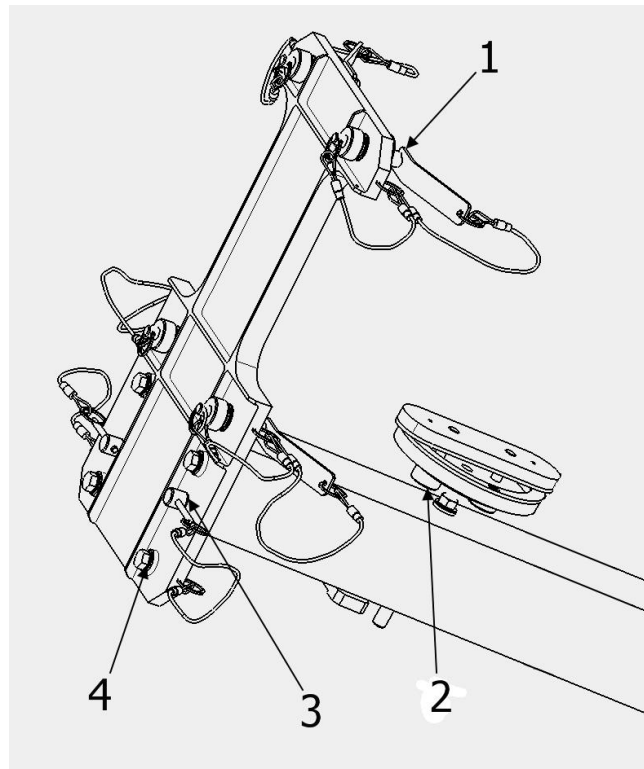


Figure 51: 3G5305G12331 T.G.B. - I.G.B. FITTING INSTL. .

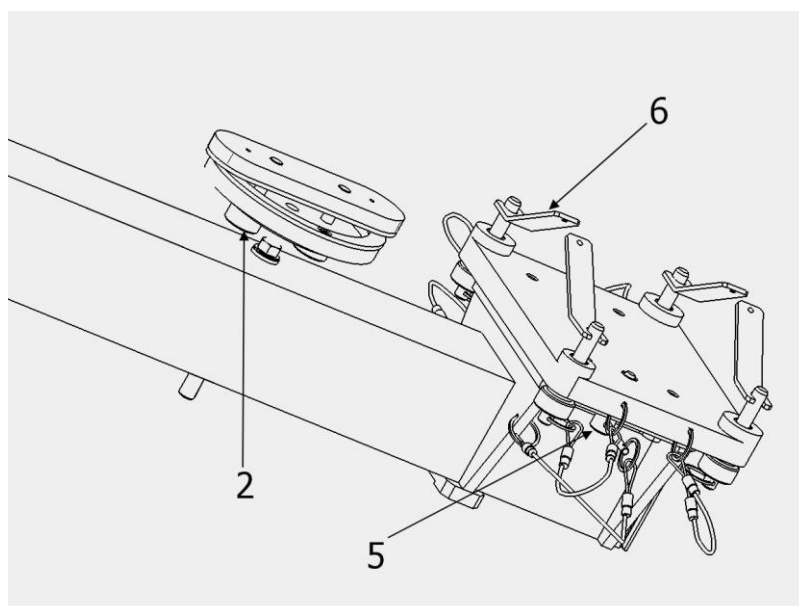


Figure 52: 3G5305G12331 T.G.B. - I.G.B. FITTING INSTL. .

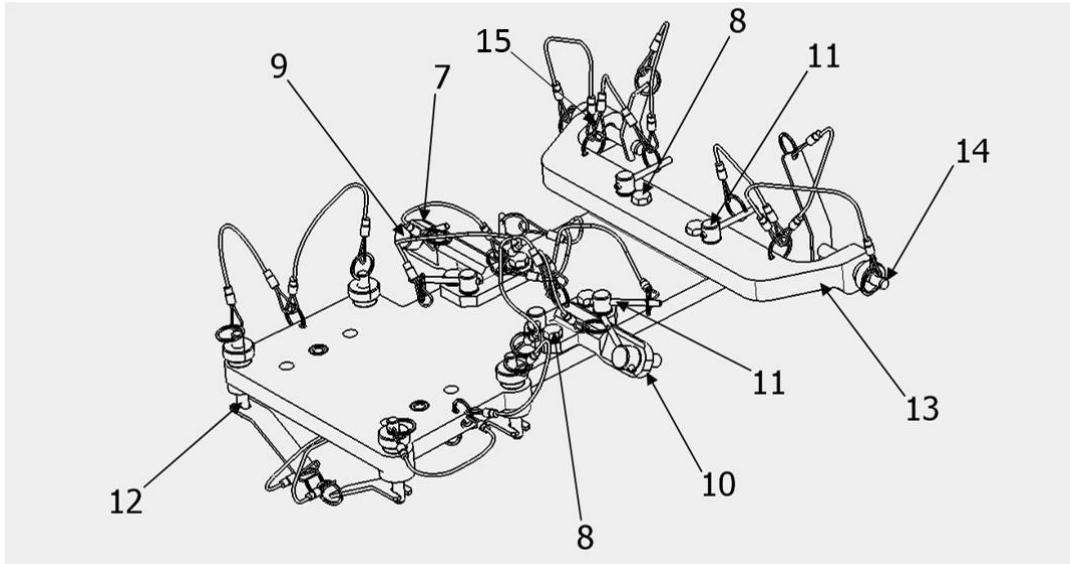


Figure 53: 3G5350G00931 TAILPLANE FITTING INSTL.

ITEM	P/N	DESCRIPTION
1	PEC 139-003-01-07	ASSIEME SPINA (<i>PIN ASSY</i>)
2	PEC 139-003-02-07	VITE (<i>SCREW</i>)
3	PEC 139-003-01-06	ASSIEME SPINA (<i>PIN ASSY</i>)
4	PEC 139-003-02-11	VITE (<i>SCREW</i>)
5	PEC 139-003-01-10	ASSIEME SPINA (<i>PIN ASSY</i>)
6	PEC 139-003-01-08	ASSIEME SPINA (<i>PIN ASSY</i>)
7	PEC 139-004-01-05	BRACCETTO DX (<i>RIGHT ARM</i>)
8	PEC 139-004-02-16	VITE SPECIALE (<i>SPECIAL SCREW</i>)
9	PEC 139-004-01-07	ASSIEME SPINA (<i>PIN ASSY, UPPER ATTACHMENTS</i>)
10	PEC 139-004-01-04	BRACCETO SX (<i>LEFT ARM</i>)
11	PEC 139-004-01-08	ASSIEME SPINA (<i>PIN ASSY</i>)
12	PEC 139-004-01-06	ASSIEME SPINA (<i>PIN ASSY, IGB FITTING</i>)
13	PEC 139-004-02-04	ATTACCO PIANETTO (<i>FIXING TAILPLANE LOWER</i>)
14	PEC 139-004-02-10	ASSIEME SPINA (<i>PIN ASSY, LOWER FITTING</i>)
15	PEC 139-004-02-17	BUSSOLA DUMMY (<i>DUMMY BUSHING</i>)