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**SERVICE BULLETIN**

**N° 109EP-178**

**DATE:** June 16, 2022

**REV. :** /

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**TITLE**

**ATA 31 – SLIDING SCREEN INSTALLATION**

**REVISION LOG**

First Issue

## **1. PLANNING INFORMATION**

### **A. EFFECTIVITY**

A109E helicopters S/N 11088 and S/N 11103.

### **B. COMPLIANCE**

At Customer's option.

### **C. CONCURRENT REQUIREMENTS**

N.A.

### **D. REASON**

This Service Bulletin is issued in order to provide the necessary instructions on how to perform the installation of the sliding screen P/N 109-0732-03-105.

### **E. DESCRIPTION**

The purpose of this Service Bulletin is to install the sliding glare shield on the instrument panel shield hood Assy.

### **F. APPROVAL**

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LH certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

### **G. MANPOWER**

To comply with this Service Bulletin approximately 20 (twenty) MMH are deemed necessary.

MMH are based on hands-on time and can change with personnel and facilities available.

## H. WEIGHT AND BALANCE

WEIGHT (kg)	ARM (mm)	MOMENT (kg·mm)
		2.41
LONGITUDINAL BALANCE	952	2294

## I. REFERENCES

### 1) PUBLICATIONS

<u>SECTION/PARAGRAPH</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 00-20-1	Helicopter Safety	-
DM02 06-40-1	Access panels and doors	-
DM03 31-11-6	Upper cover	-

### 2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
IPC	Illustrated Parts Catalogue
LH	Leonardo Helicopters
MM	Maintenance Manual
MMH	Maintenance Man Hours
P/N	Part Number
PTUM	Pictorial Tools Usage Manual
S/N	Serial Number

### 3) ANNEX

N.A.

## J. PUBLICATIONS AFFECTED

A109E-MM – Maintenance Manual

## K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

## 2. MATERIAL INFORMATION

### A. REQUIRED MATERIALS

#### 1) PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	109-0732-03-105		SLIDING SCREEN	REF	.		-
2	109-0732-03-111		LIGHT SHIELD ASSY	REF	..		-
3	109-0732-03-123		Shield Assy	REF	...	(1)	-
4	109-0732-03-133		Doubler	4	...		709-067L1
5	109-0732-03-135		Doubler	4	...		709-067L1
6	109-0732-03-141		Doubler	4	...		709-067L1
7	109-0732-03-143		Stop	2	...		709-067L1
8	109-0732-03-147		Filler	1	...	(2)	-
9	MS20426AD3-7		Rivet	0.1 kg	...		709-067L1
10	MS21069L04		Nut Plate	8	...		709-067L1
11	MS21075L06	MS21075L06N	Nut Plate	4	...		709-067L1
12	MS20470AD3-7		Rivet	0.1 kg	...		709-067L1
13	109-0732-03-117		SLIDING SHIELD ASSY	REF	..		-
14	109-0732-03-129		Shield	1	...		709-067L1
15	109-0732-03-145		Sliding Guide	4	...		709-067L1
16	109-0732-03-149		Skirt	1	...		709-067L1
17	MS20426AD3-7		Rivet	0.1 kg	...		709-067L1
18	109-0732-03-131		Shim	4	..		709-067L1
19	109-0732-03-153		Support Assy	2	..		709-067L1
20	129-0320-65-105		Guide	2	..		709-067L1
21	B0375-020		Spring Washer	2	..		709-067L1
22	B193/15P-M4X6		Knob	2	..		709-067L1
23	LN65022-0410		Screw	4	..		709-067L1
24	LN9025-0410K		Washer	4	..		709-067L1
25	MS24693S28	MS24693-S28	Screw	4	..		709-067L1
26	MS35206-215		Screw	4	..		709-067L1
27	MS35206-216		Screw	4	..		709-067L1
28	NAS1149CN416R		Washer	8	..		709-067L1

Refer also to IPC for the spare parts required to comply with the MM Paragraphs referenced in the accomplishment instructions.

#### 2) CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	Spec./LHD code number	DESCRIPTION	Q.TY	NOTE	PART
29	199-05-002 TY I, CI 2	Adhesive EA9309.3NA (C100)	AR	(3)	-
30	199-05-002 TY II, CI 2	Adhesive EA934NA (C054)	AR	(3)	-
31	AWMS08-001 TY I, Form 146U	Adhesive AF163-2U.03 (C275)	AR	(3)	-
32	WHMS415, TYPE 2 (LH code number 230762130)	PLATE,ROACHELL,RIGID FOAM 51WF	AR	(3)	-

Refer also to AMDI for the consumable materials required to comply with the MM Paragraphs referenced in the accomplishment instructions.

### 3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
709-067L1	1		-

#### NOTE

- (1) This item can be obtained reworking the existing panel P/N 109-0731-82-103.
- (2) This item can be obtained from the raw material WHMS415 TYPE 2, sheet ROHACELL 51 WF, 0.5 sqm.
- (3) Item to be procured as local supply.

#### B. SPECIAL TOOLS

Refer to PTUM for the special tools required to comply with the MM Paragraphs referenced in the accomplishment instructions.

#### C. INDUSTRY SUPPORT INFORMATION

Customization.

### **3. ACCOMPLISHMENT INSTRUCTIONS**

#### **GENERAL NOTES**

- a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
  - b) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
  - c) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.
  - d) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
  - e) Exposed thread surface and nut must be protect using a layer of tectyl according to MIL-C-16173 grade I.
  - f) Refer to CSRP-A-CSRP-00-X for the applicable structural standard practice procedures.
  - g) Refer to MM Chapter 20 for the applicable standard torque values for threaded fasteners.
  - h) All lengths are in mm.
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1. In accordance with MM Paragraph 00-20-1, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
  2. In accordance with MM Paragraph 06-40-1, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the retromod.
  3. In accordance with MM Paragraph 31-11-6 and with reference to Figure 1, remove the instrument panel shield hood assy and the related hardware. Retain for later re-use.
  4. With reference to Figure 7, assemble the sliding shield assy P/N 109-0732-03-117 as described in the following procedure:
    - 4.1 With reference to Figure 7, install n°4 sliding guides P/N 109-0732-03-145 on the shield P/N 109-0732-03-129 by means of n°16 rivets P/N MS20426AD3-7.
    - 4.2 With reference to Figure 7, install the skirt /N 109-0732-03-149 on the shield P/N 109-0732-03-129.

- 4.3 With reference Figure 7, mark the sliding shield assy with P/N 109-0732-03-117.
5. With reference to Figures 4 thru 6, assemble the light shield assy P/N 109-0732-03-111 as described in the following procedure:
- 5.1 With reference to Figure 6 Detail F, install the filler P/N 109-0732-03-147 by means of adhesive AF163-2U.03 (C275) on the shield assy P/N 109-0732-03-123.
- 5.2 With reference to Figure 6 Detail F, rework the shield assy P/N 109-0732-03-123 as indicated in n°4 places according to the position of the sliding guides P/N 109-0732-03-145 installed on the shield assy P/N 109-0732-03-117.
- 5.3 With reference to Figure 6 Detail F, apply adhesive EA934.NA (C054) on the edges of the filler P/N 109-0732-03-147. Smooth with abrasive paper and touch up with the same colour of the shield assy P/N 109-0732-03-123.

**NOTE**

If necessary locally adapt to install the doubler.

- 5.4 With reference to Figure 6 Detail F, install the doubler P/N 109-0732-03-135 by means of adhesive EA9309.3NA (C100) on the filler P/N 109-0732-03-147.

**NOTE**

Countermark the positions of holes according to the sliding guides P/N 109-0732-03-145 installed on sliding shield assy P/N 109-0732-03-117.

- 5.5 With reference to Figure 5, drill n°4 nut plate holes  $\varnothing$  3.68÷3.81 on the shield assy P/N 109-0732-03-123.
- 5.6 With reference to Figure 5, drill n°4 through holes  $\varnothing$  4.20÷4.50 on the shield assy P/N 109-0732-03-123.
- 5.7 With reference to Figure 5, install n°4 doublers P/N 109-0732-03-133 and n°4 nut plates P/N MS21075L06 by means of n°8 rivets P/N MS20426AD3-7.

**NOTE**

Countermark the positions of holes according to the sliding shield assy P/N 109-0732-03-117.

- 5.8 With reference to Figure 5, drill n°8 nut plate holes  $\varnothing$  3.25÷3.85 on the shield assy P/N 109-0732-03-123.
- 5.9 With reference to Figure 5, install n°4 doublers P/N 109-0732-03-141 and n°8 nut plates P/N MS21069L04 by means of n°16 rivets P/N MS20426AD3-7.
- 5.10 With reference to Figure 5, install n°2 stops P/N 109-0732-03-143 by means of n°4 rivets P/N MS20470AD3-7 according to the positions of the doubler P/N 109-0732-03-141 on the shield assy P/N 109-0732-03-123.

- 5.11 With reference Figure 4, mark the light shield assy with P/N 109-0732-03-111.
6. In accordance with MM Paragraph 31-11-6 and with reference to Figures 1 and 2, re-install the light shield assy with P/N 109-0732-03-111 by means of the previously removed hardware (Ref step 3).
  7. With reference to Figure 3, install n°2 support assemblies P/N 109-0732-03-153 by means of n°4 screws P/N MS35206-215, n°8 screws P/N MS35206-216 and n°12 washers P/N NAS1149CN416R on the light shield assy with P/N 109-0732-03-111.
  8. With reference to Figure 3, install n°2 guides P/N 109-0320-65-105 on the light shield assy with P/N 109-0732-03-111.
  9. With reference to Figure 2 and 3, install the sliding shield assy P/N 109-0732-03-117 and n°4 shims P/N 109-0732-03-131 by means of n°4 screws P/N MS24693-S28, n°4 screws P/N LN65022-0410 and n°4 washers P/N LN9025-0410K on the light shield assy with P/N 109-0732-03-111.

**NOTE**

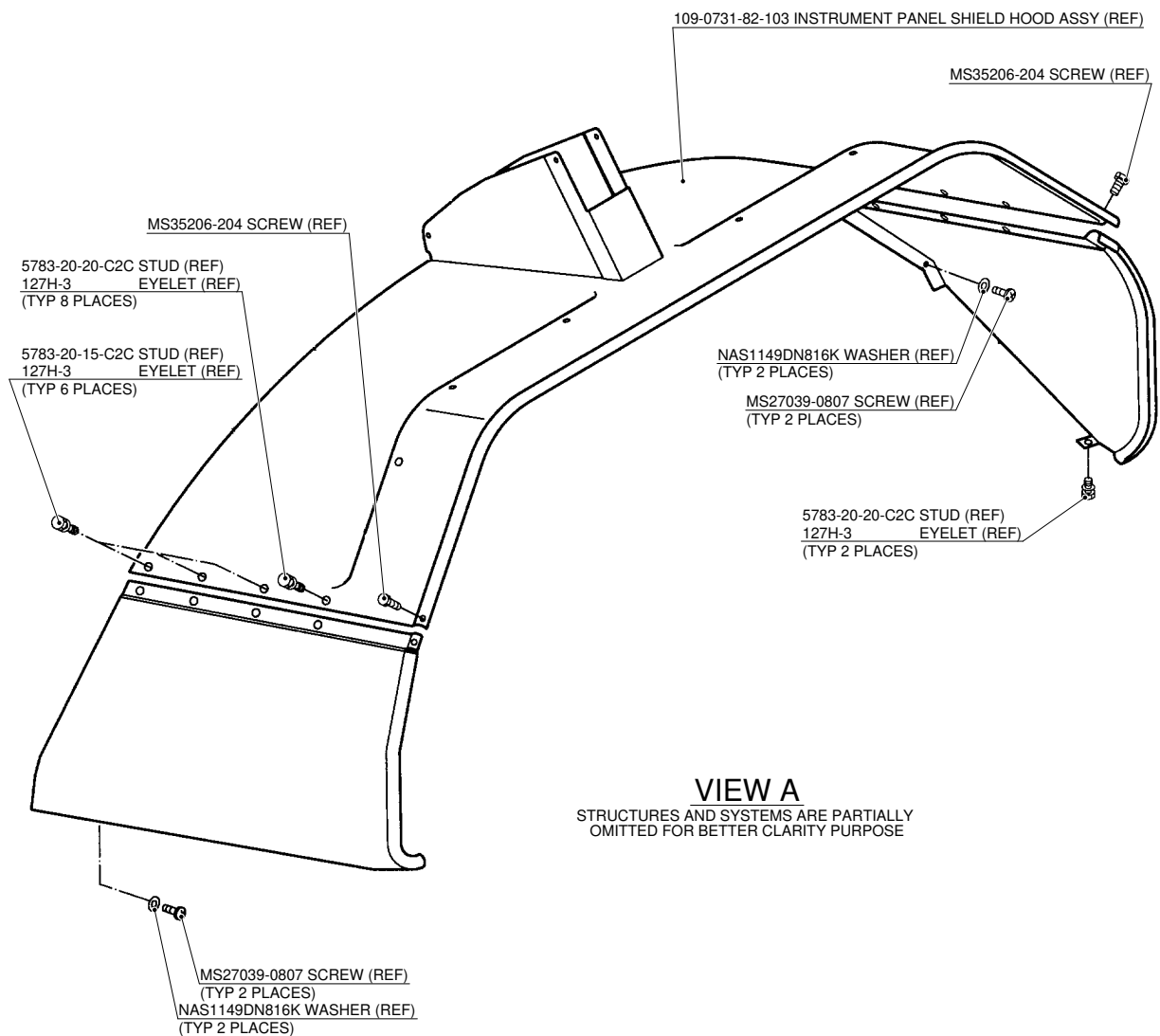
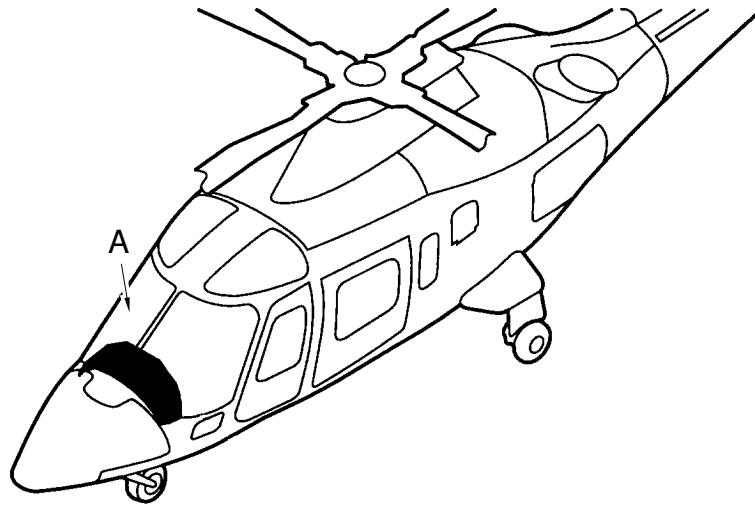
Install the spring washer P/N B0375-020 under the knob P/N B193/15P-M4X.

10. With reference to Figure 3, install n°2 knobs P/N B193/15P-M4X6 and n°2 spring washers P/N B0375-020 in the indicated positions.
11. In accordance with MM Paragraph 06-40-1, re-install all external panels, internal panels and internal liners previously removed.
12. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
13. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
14. Send the attached compliance form to the following mail box:

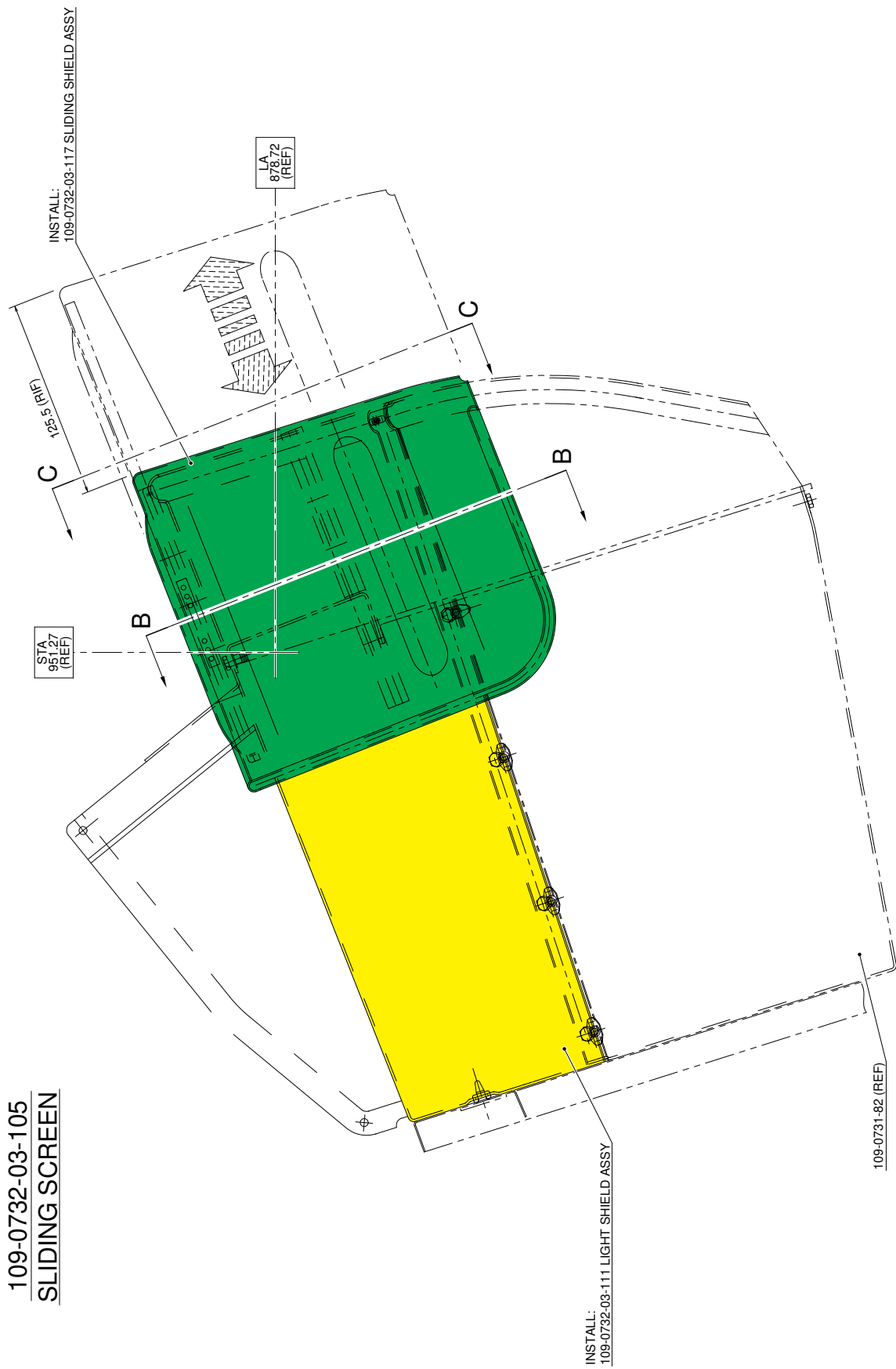
[engineering.support.lhd@leonardo.com](mailto:engineering.support.lhd@leonardo.com)

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".





**Figure 1**



**Figure 2**

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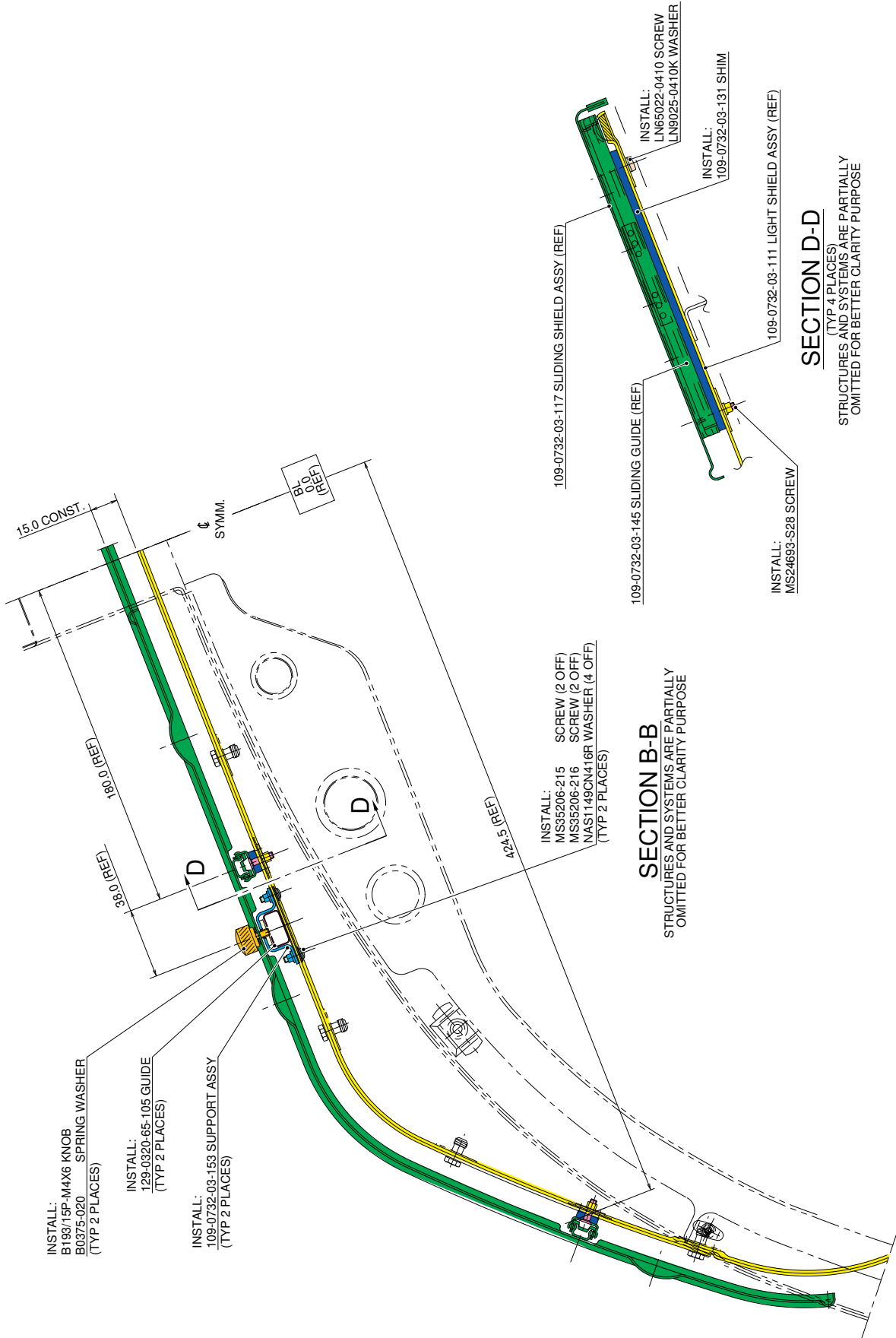
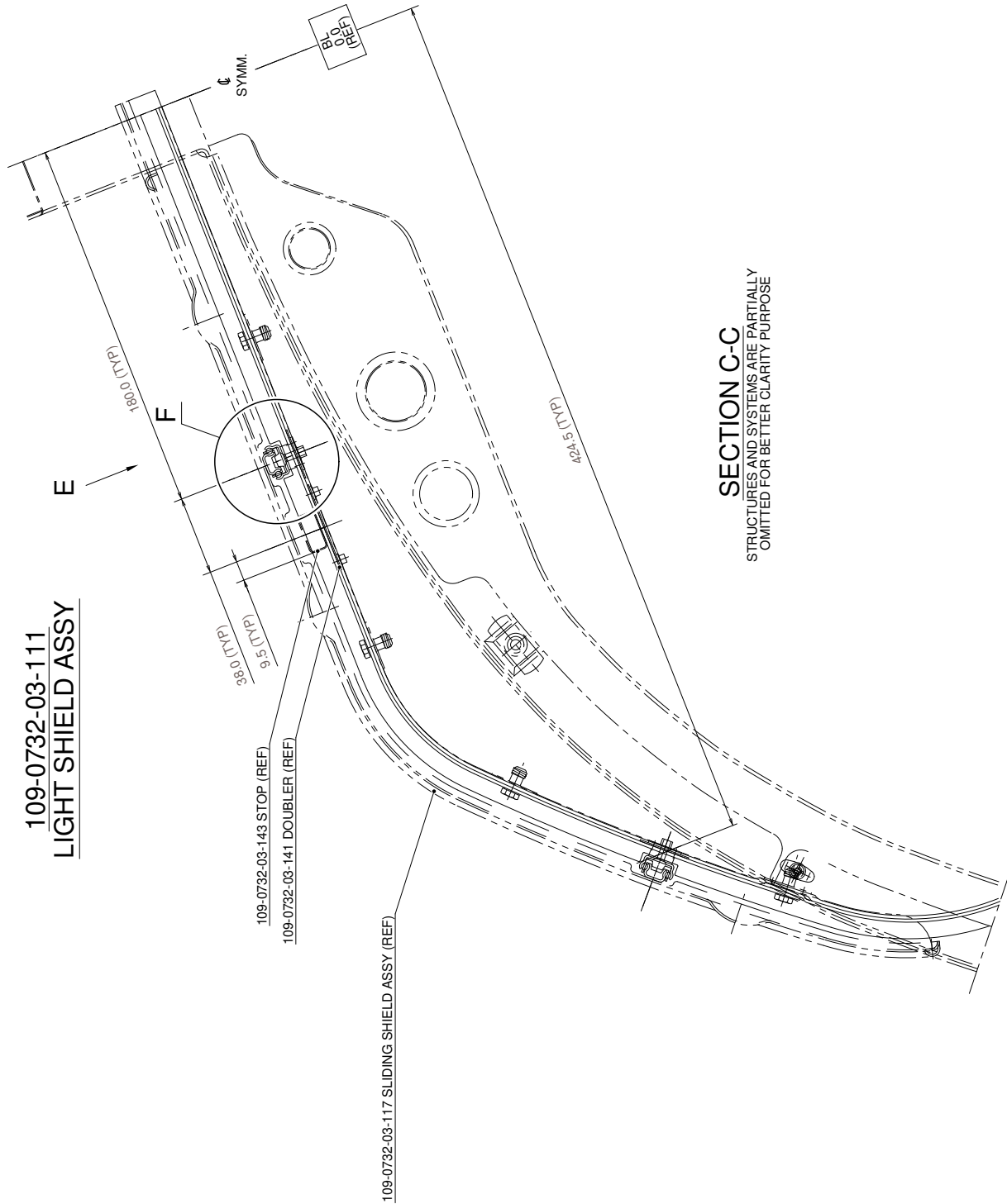
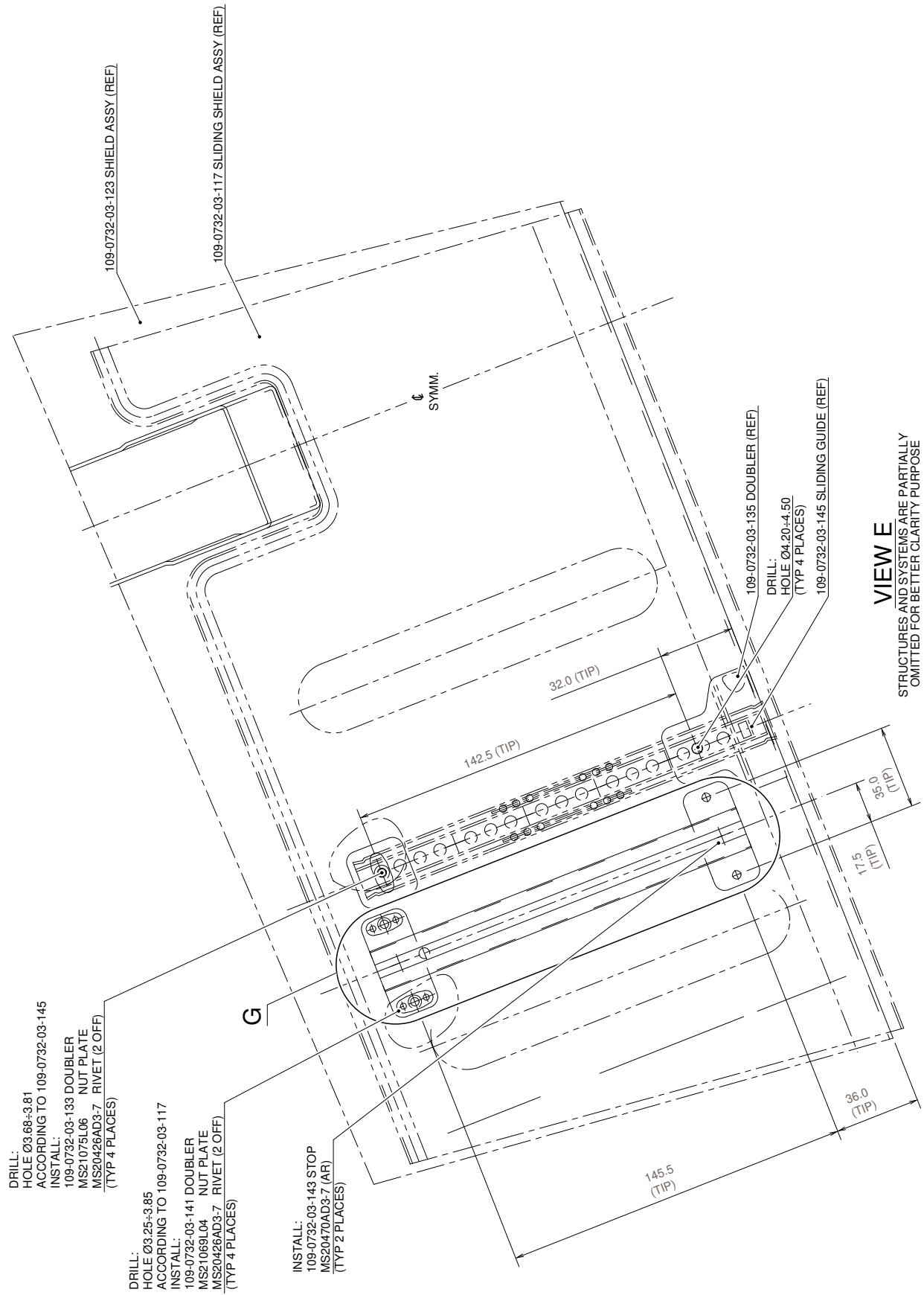


Figure 3



**Figure 4**

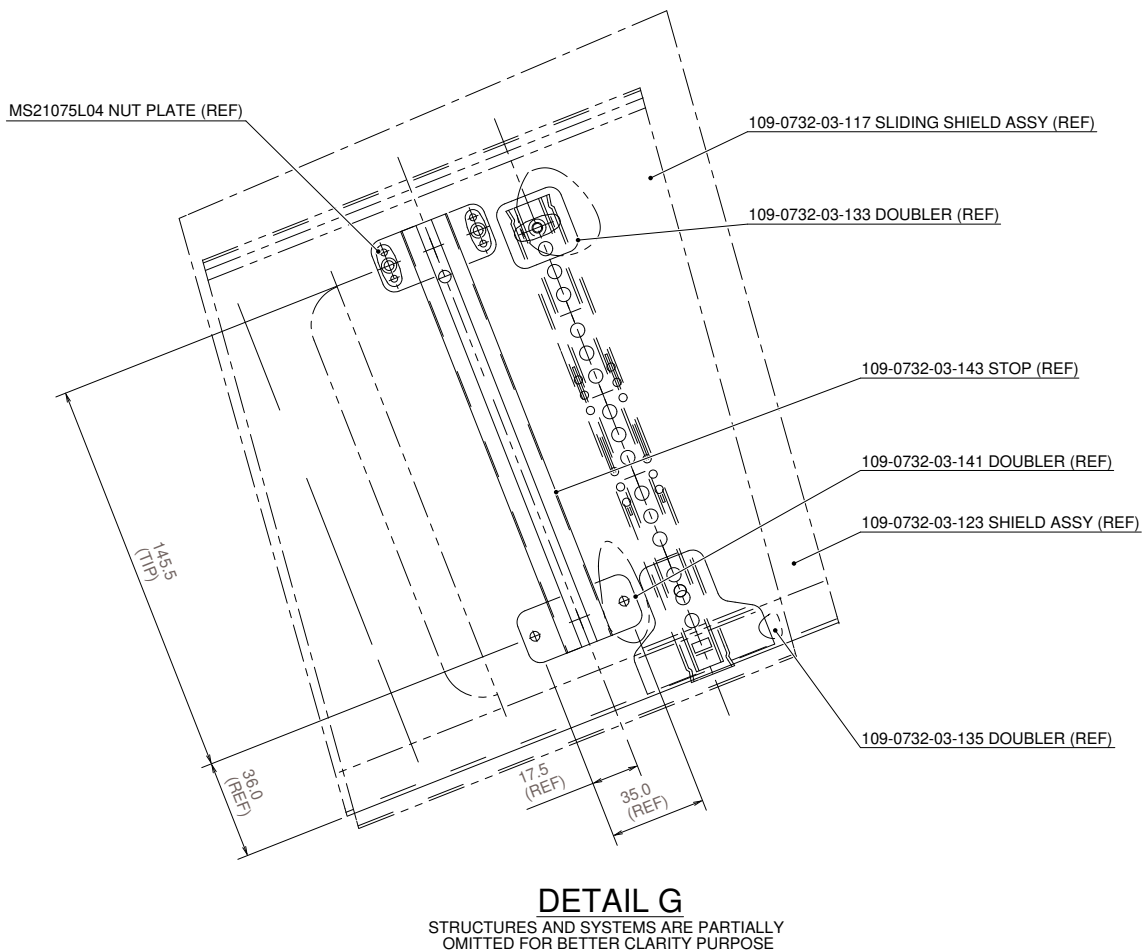
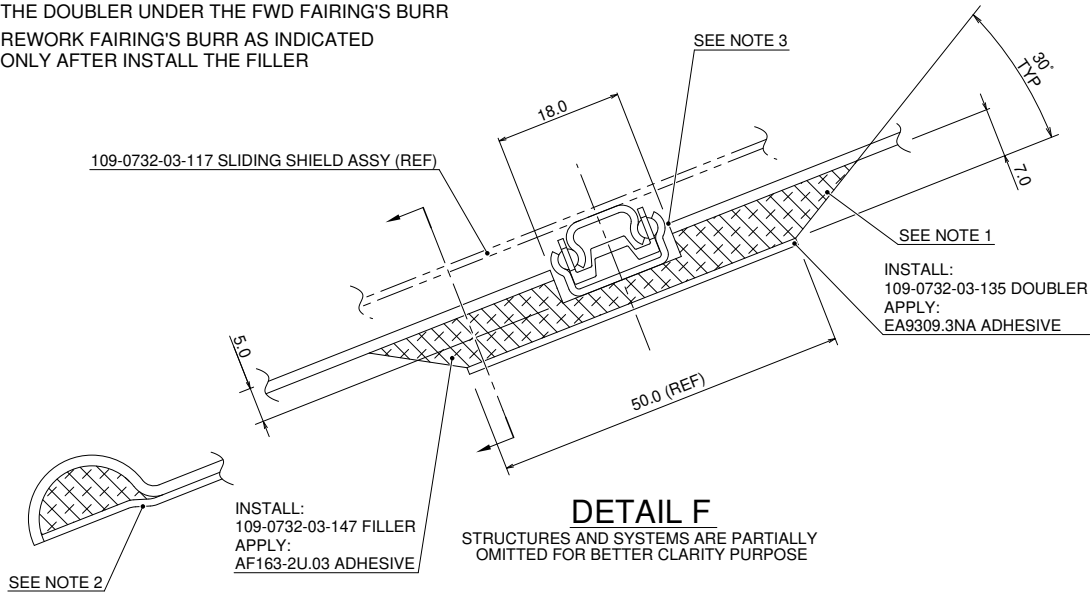
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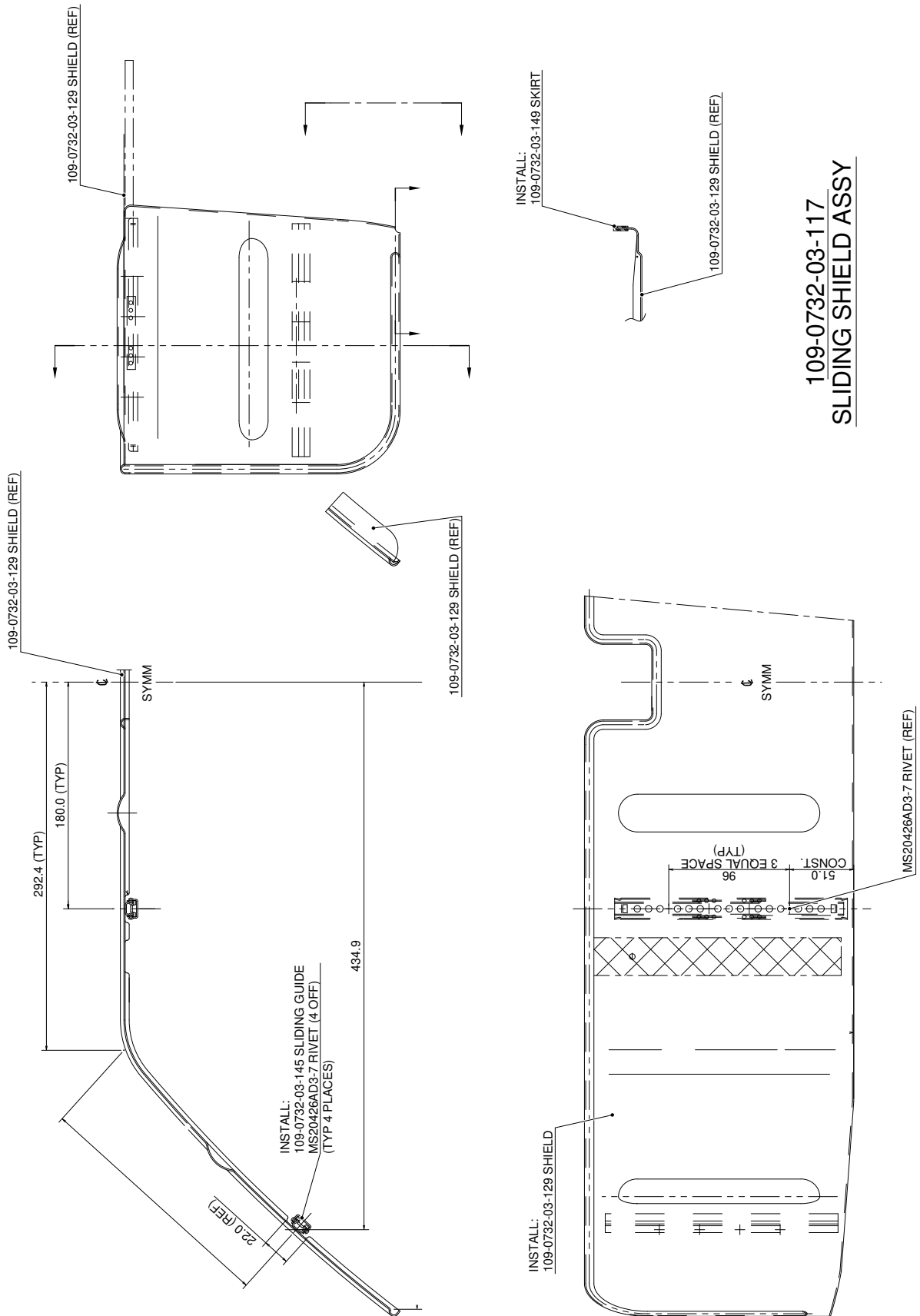
**Figure 5**

**NOTE:**

- ① APPLY ADHESIVE EA934.NA  
SMOOTH WITH ABRASIVE PAPER  
TOUCH UP WITH SAME COLOUR OF FAIRING HOOD ASSY
- ② IF NECESSARY LOCALLY ADAPT TO INSTALL  
THE DOUBLER UNDER THE FWD FAIRING'S BURR
- ③ REWORK FAIRING'S BURR AS INDICATED  
ONLY AFTER INSTALL THE FILLER



**Figure 6**



**Figure 7**

Please send to the following address:  <b>LEONARDO S.p.A.</b> <b>CUSTOMER SUPPORT &amp; SERVICES - ITALY</b>  <b>PRODUCT SUPPORT ENGINEERING &amp; LICENSES DEPT.</b> Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988		<b>SERVICE BULLETIN COMPLIANCE FORM</b>			Date:	
		Number:				
		Revision:				
Customer Name and Address:				Telephone:		
				Fax:		
				B.T. Compliance Date:		
Helicopter Model	S/N	Total Number	Total Hours	T.S.O.		
Remarks:						
<b>Information:</b>  We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.						