



PT. DIRGANTARA INDONESIA
INDONESIAN AEROSPACE (IAe)
DIRECTORATE OF PRODUCTION

TECHNICAL SHEET

332A 24 0979 0201

FRAME ASSY AT X9900

EC COM 225 AE

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TECHNICAL FILE

Manufacturing Planning :

Originator	Prepared By	Approved By
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Date : 27-09-2017	Date : 18-09-2020	Date : 18-09-2020

TECHNICAL INSTRUCTION NUMBER : TI 332A240979(

MODIFICATION NUMBER (AMS/DML)

DML 103091

PTDI-2017-107

PTDI-2017-098

DRAWING NUMBER	INDEX	DRAWING NUMBER	INDEX
332A240979	L		
332A000069	C		
332A000010	C		
332A240006	F		





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DATE	UPDATE BY	ISSUE	REASON FOR MODIFICATION
27-09-2017	REIZANA ADYANA	-	CREATION OF TECHNICAL SHEET, REPLACEMENT TS 332A2409790201 REFF STL 332A24002407I2 ISSUE D
18-09-2020	ARIEF RAKHMAN	A	CHANGE VALUE GAP MIN 0.1 MM & MAX 0.3 MM TO MIN 0.5 MM AS PER HS 5043 CHANGE DRAWING 332A240979 TO 332A240006 FOR SEALANT ADD DRAWING 332A000010 INDEX C



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GENERAL NOTE

ACTIONS

REFERENCES

GENERAL MANUFACTURING TOLERANCES

HS 5043

TEMPORARY FASTENING BEFORE RIVETING

IFMA 297

SHEET FOR THE PREPARATION AND APPLICATION OF INTERIOR PAINTS

IFMA 447-30

FITTING OF BLIND BOLTS ASNA 0026-0027-0341-0342 AND 036

IFMA 566

APPLICATION OF MIXED/ FROZEN SEALANTS AND PR COMPOUNDS; AND NON-MIXED; NON FROZEN PR COMPOUNDS

IFMA 593

NOTE:
ALL STANDARD MUST BE
USE AT THE LATEST ISSUE



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GENERAL NOTE

POINT TO BE CHECKED AFTER DRILLING FOR THE RIVETING (.../V)

POINT TO BE CHECKED AFTER DRILLING (.../V)	REQUIREMENTS	FREQUENCY	MEANS
1. THE DIAMETERS OF HOLES OR BORES (RIVET)	SEE TABLE 1	5%	SLIDING CALIPER.
2. DEBURRING	NO BURR (FOR INFORMATION : 0.1 MM MAX. CHAMFER)	100%	VISUAL
3. COUNTERSUNK HOLES	SEE TABLE 2	5%	USE ACTUAL RIVET AS GAUGE
4. PITCH, LAND CLEARANCE, DISTANCE TO FLANGED OR FORMED EDGE RADIUS	SEE TABLE ON NEXT PAGE	5% 95%	SLIDING CALIPER. VISUAL

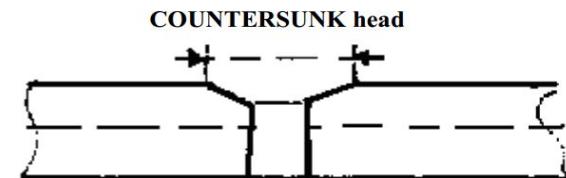
PRINCIPLE OF INSPECTION POINTS (1, 2, & 3) AS PER IFMA 566

Code	Shank Nominal Diameter	Drilling Diameter	
		Min.	Max.
04	3.25	3.28	3.35
05	4.14	4.16	4.24
06	5.03	5.05	5.13
08	6.58	6.60	6.68

TABLE 1

Code	Max. Countersink Diameter for C/Sunk Head
04	5.82
05	8.48
06	9.83
08	12.90

TABLE 2





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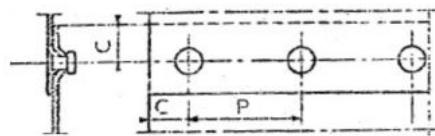
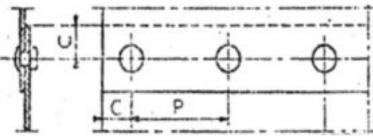
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GENERAL NOTE

PRINCIPLE OF INSPECTION POINT (4)
AS PER ASN 541-17 AND DRAWING 332A000010

In one row



In several row
Watertight = P'

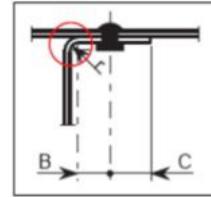
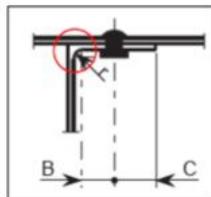
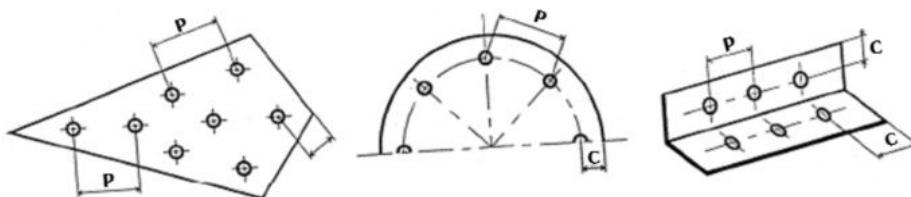
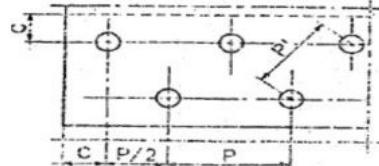
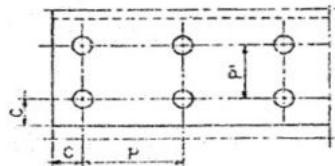


TABLE EDGE MARGIN, PITCH, AND DISTANCE WITH FLANGE & PROFIL

		Rivet Diameter (mm)				
		2,4	3,2	4	4,8	5,6
C - Edge Margin = Distance min. from end of part to center of hole						
Rivet Monel, Titanium, CSK 100° or Round Head		7	8	9	11	12
Rivet Aluminium alloy CSK 100° or Round Head for all material with thickness $\geq 0,8$		5	5,7	6,7	8,7	
Rivet Aluminium alloy CSK 100° or Round Head		5,5	7	8	9,5	11,5
Rivet SL	CSK 100°				10	
	Round Head				9	
P - Pitch = Distance min. from center to center of hole						
Standard	min	12	13	16	20	23
	standard	20	25	30	35	40
	max	25	35	40	50	55
Watertight	Riveting which total thickness $P \leq \varnothing$ rivet/2	8,4 to 10,8	11,2 to 14,4	14 to 18	16,8 to 21,6	19,6 to 25,2
	Riveting which total thickness $P > \varnothing$ rivet/2	9,6 to 12	12,8 to 32	16 to 20	19,2 to 24	22,4 to 28
B - Distance with flange & Profil						
Rivet Aluminium alloy		3	4	5	6	7
Rivet Monel & Titanium.		4	5	6	8	9

R : Radius



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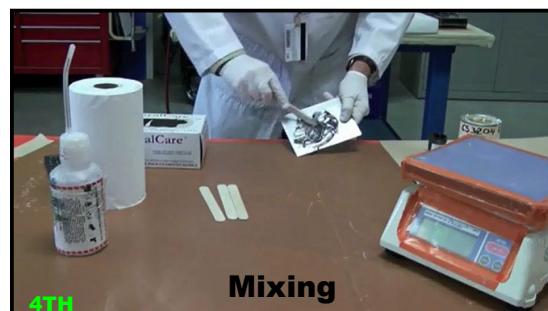
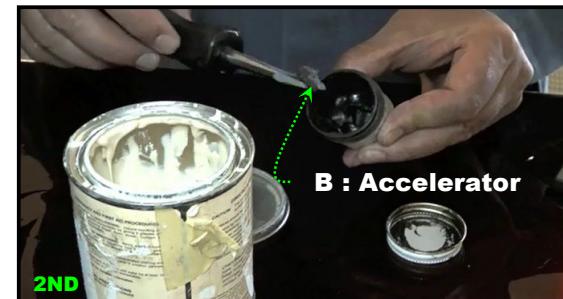
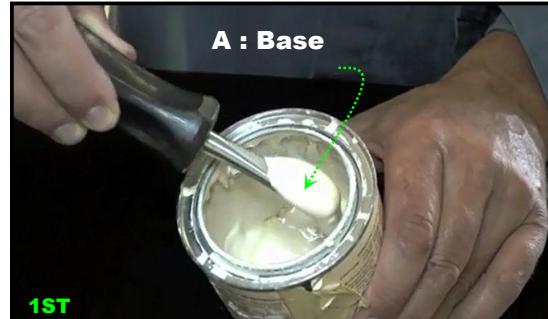
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GENERAL NOTE

POINT TO BE CHECKED ON PROCESS MIXING (.../V)

ILLUSTRATION MIXING SEALANT



PRINCIPLE OF SEALANT PREPARATION (MIXING) AS PER IFMA 593

CHECKS TO BE PERFORMED	REQUIREMENTS	MEANS	FREQUENCY
1. COLOR	GRAY	VISUAL	100%
2. MIXTURE / COMPOSITION	10 : 1 (BASE : ACCELERATOR)	WEIGHING	100%
3. UNIFORM / HOMOGENITY	UNIFORM IN COLOR	VISUAL	100%
4. TEMPERATURE & HUMIDITY	20 - 25 °C & 50 ± 5%	THERMOHYGROGRAPH	100%

RECORD MIXING SEALANT ON LOG BOOK F-AE704.02.02



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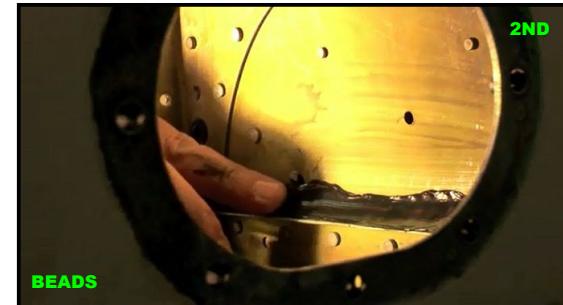
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GENERAL NOTE

**POINT TO BE CHECKED ON
APPLY OF SEALANT (.../V)**



SEALING PRINCIPLE AS PER DRAWING 332A240006 AND IFMA 593

CHECKS TO BE PERFORMED	REQUIREMENTS	MEANS	CONTROL	FREQUENCY
1. SURFACE PREPARATION	CLEAN FROM DEGREASED	VISUAL	BEFORE	100%
2. TEMPERATURE	20 - 30 °C	TEMPERATURE OF PTDI COVERED AREA	ON PROCESS	100%
3. APPLICATION TIME	2 HOURS (AFTER MIXING)	STOP WATCH	ON PROCESS	100%

RECORD SEALANT INTERPOSITION ON LOG BOOK F-AE704.02.01



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GENERAL NOTE

POINT TO BE CHECKED AFTER RIVETING	REQUIREMENTS	FREQUENCY	MEANS
1. CONDITION OF RIVETS	NO BURRS, CRACKS, TOOL MARKS, ETC.	100%	VISUAL
2. COUNTERSUNK HEAD RIVETS	NOT OUT-OF-FLUSH (± 0 IS IDEAL, $+ 0.05$ / $- 0.10$ IS ACCEPTABLE)	95% 5%	VISUAL SLIDING CALIPER
3. GENERAL INSPECTION RIVET	FOLDS, CRACKS, CLEARANCE UNDER HEAD AND DEFORMATION OF THE SHEET AS PER IFMA 566	100%	VISUAL

PRINCIPLE OF FITTING BLIND BOLT AS PER IFMA 566



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Part Number	Description	Qty.	Item	Tool Type	Drawing And Tools	ACTIONS	P	Cnt	I

OPERATION 0001

GENERAL REMARK

DASH 01 = 332A24097902. MINUS ITEMS 046, 047, 048, 049, AND 101 WILL BE INSTALL ON NEXT ASSEMBLY.

OPERATION 0100

						CHECK BY QUALITY INSPECTOR (QI) : - PART NUMBER - VISUAL ASPECT (PART PROTECTION/SURFACE CONTACT & DENTS AS PER PART SPECIFICATION & TRACEABILITY IN PROCESS SHEET			
--	--	--	--	--	--	---	--	--	--

OPERATION 0200

332A2409982601	JIG FRAME 9900	1	043	6210	332A24090200	AS PER SKETCH 1 ASSEMBLY PROCEDURE FOLLOWING JIG FRAME 9900	14	1/D	A
	HALF FRAME UPR X9900					SETTING & LOCATE ON THE JIG WITH CLAMPS (4 EA FOR ITEM 043 & 5 EA FOR ITEM 051), ADJUST IF NECESSARY TO HAVE GAP (MIN. 0.5 MM) USE VERNIER CALIPER WITH FREQUENCY 100%, AND VALIDATED + RECORD ON FORM TI 332A24097902 BY QUALITY INSPECTOR			
332A2409982901	HALF FRAME LWR X9000	1	051		332A240979	AS PER SKETCH 2 - SECTION AA SETTING & LOCATE TO THE BOTH FRAMES ON THE JIG WITH CLAMPS (2 EA FOR ITEM 22 & 2 EA FOR ITEM 23) - SEE SKETCH 1, ADJUST GAP BETWEEN SPLICES & BOTH FRAMES (MIN. 0.1 MM) USE FEELER GAUGE WITH FREQUENCY 100% VALIDATED + RECORD ON FORM TI 332A24097902 BY QUALITY INSPECTOR	15	2/D	A
	SPLICE SIDE LH								
332A2409722103	SPLICE SIDE RH	1	022		332A240979		14	2/D	A
	SPLICE SIDE RH								
332A2409742102		1	023		332A240979				



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Part Number	Description	Qty.	Item	Tool Type	Drawing And Tools	ACTIONS	P	Cnt	I
						ATTENTION : FOR ALL THE DRILLING, USE SPOON BUSH OF THE JIG AS PER SKETCH 1 REDRILL TO Ø 4.2 MM (6+6 EA) LH & RH FOR RIVET Ø 4.14 MM FROM SPLICES TO FRAMES WITH CSK AS PER GENERAL NOTE ON PAGES 4 & 5	14	3/V	
OPERATION 0300									
ECS2339-50	SEALANT	AR	020		332A240006	MIXING AND VERIFY OF PREPARE SEALANT AS PER GENERAL NOTE	6	4/V	A
OPERATION 0400									
						AS PER SKETCH 2 (SECTION AA) APPLY & INSPECT OF SEALANT INTERPOSITION ON SPLICES + WET SEALANT ON RIVETS AS PER GENERAL NOTE	15	7	5/V
OPERATION 0500									
ASNA0026SB0505 ASNA0026SB0506 ASNA0026SB0506 ASNA0026SB0507	BLIND BOLT BLIND BOLT BLIND BOLT BLIND BOLT	4 2 4 2	100 104 104 105		332A240979 332A240979 332A240979 332A240979	AS PER SKETCH 2 RIVETING SPLICE (ITEM 022) TO HALF FRAMES AS PER IFMA 566 QTY OF RIVET AS PER DRILLING OPERATION RIVETING SPLICE (ITEM 023) TO HALF FRAMES AS PER IFMA 566 QTY OF RIVET AS PER DRILLING OPERATION	15		
OPERATION 0600									
						CHECK BY QUALITY INSPECTOR : - VERIFY OF RIVETING AS PER GENERAL NOTE QTY OF RIVET AS PER OPERATION 020 - FLATNESS OF FRAMES UPPER & LOWER (SEE SKETCH 2) ON THE MARBLE TABLE USE FILLER GAUGE (MAX. 0.4 MM & MAX. 0.2 MM ON FITTING AREA) WITH FREQUENCY 100%, AND VALIDATED + RECORD ON FORM TI 332A24097902 BY QUALITY INSPECTOR	8 15		



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Part Number	Description	Qty.	Item	Tool Type	Drawing And Tools	ACTIONS	P	Cnt	I
OPERATION 0700									
332A2409982901	HALF FRAME LWR X9000	PM	051		332A240979	AS PER SKETCH 1 DRILL 1+1 HOLES Ø 4 MM TO Ø 6.9 MM AND REDRILL TO Ø 7 MM WITH COLOR CODE BLUE TO POSITION PIN LOCATING (ITEM 050).	14		
332A24096223	PIN LOCATING	2	050		332A240979	AS PER SKETCH 3 SETTING & LOCATE TO HALF FRAME LOWER X9900, DRILL 2+2 HOLES Ø 4.2 MM FOR RIVET Ø 4.14 MM WITH COLOR CODE PINK AND DRILL 1+1 HOLES Ø 7.2 MM WITH COLOR CODE BLACK.	16		
332A2409982601	HALF FRAME UPR X9900	PM	043		332A240979	DRILL 18 HOLES Ø 4 MM TO Ø 5.9 MM AND DRILL TO Ø 6.2 MM WITH COLOR CODE RED TO HALF FRAME UPPER X9900 (3 EA) AND HALF FRAME LOWER X9000 (15 EA).			
332A2409982901	HALF FRAME LWR X9000	PM	051		332A240979	DRILL 22 HOLES Ø 4 MM TO Ø 7.9 MM AND DRILL TO Ø 8.2 MM WITH COLOR CODE ORANGE TO HALF FRAME UPPER X9900 (13 EA) AND HALF FRAME LOWER X9000 (9 EA).			
332A2409982601	HALF FRAME UPR X9900	PM	043		332A240979	DRILL 4 HOLES TO Ø 4 MM WITH COLOR CODE WHITE.			
332A2409982901	HALF FRAME LWR X9000	PM	051		332A240979	REMOVE PARTS FROM JIG AND DEBURR.			
332A2409982601	HALF FRAME UPR X9900	PM	043		332A240979	NOTE : APPLY REAMER Ø 6.2H7 AND Ø 8.2H7 ONLY FOR SMOOTHING WITH COLOR CODE RED AND ORANGE. - CHECK RIVET HOLES AS PER GENERAL NOTE ON PAGES 4 & 5. - CHECK DIAMETER OF FRAMES BY QUALITY INSPECTOR USE VERNIER CALIPER WITH FREQUENCY 100% AS FOLLOWING : Ø 7.2 ± 0.2 MM (1+1 EA) Ø 6.2 ± 0.1 MM (18 EA) Ø 8.2 ± 0.2 MM (22 EA) RECORD ACTUAL DIAMETER HOLES ON FORM TI 332A24097902			



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Part Number	Description	Qty.	Item	Tool Type	Drawing And Tools	ACTIONS	P	Cnt	I
OPERATION 0800									
ECS2339-50	SEALANT	AR	020		332A240006	MIXING AND VERIFY OF PREPARE SEALANT AS PER GENERAL NOTE	6	7/V	A
OPERATION 0900									
						AS PER SKETCH 3 - VIEW ON F1 (OPP. TO F2) APPLY & INSPECT OF SEALANT INTERPOSITION + WET SEALANT ON RIVETS AS PER GENERAL NOTE	16 7	8/V	
OPERATION 1000									
ASNA0026SB0504	BLIND BOLT	4	103		332A240979	AS PER SKETCH 3 - VIEW ON F1 (OPP. TO F2) RIVETING THE PIN LOCATING TO HALF FRAME LOWER X990C AS PER IFMA 566 - QTY OF RIVET AS PER DRILLING OPERATION NOTE : AFTER RIVETING THE PIN LOCATING, CLEANING ASSY AREA & ALL EQUIP. (JIG, FIXTURE, COMMON TOOLS, ETC) FROM PARTICLE OR OTHER DIRT. USE GREASE FOR PROTECT EQUIP. (IF NECESSARY).	16		
OPERATION 1100									
						VERIFY OF THE RIVETING PIN LOCATING AS PER GENERAL NOTE QTY OF RIVET AS PER OPERATION 0700	8		
OPERATION 1200									
ECS2066-3603	PAINT BLACK MATT	AR	026		332A000069	AS PER SKETCH 2 AS PER SKETCH 3 PAINT BY BLACK MATT ON INSIDE SURFACE ONLY AS PER IFMA 447.30 USE ADHESIVE LABEL FOR PROTECTION FROM TOP COAT	15 16		
DHS186-111.30	EPOXY PRIMER					TOUCH UP BY EPOXY PRIMER AT INSIDE HOLE AS PER IFMA 195			



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Part Number	Description	Qty.	Item	Tool Type	Drawing And Tools	ACTIONS	P	Cnt	I
OPERATION 1300									
						INSPECTION OF PAINT AS PER PIC NO. ST/EC/SPT-07			
OPERATION 1400									
						AS PER SKETCH 2 IDENTIFICATION OF ASSEMBLY BY P/N 332A2409790201 USE PEN MARKING AND PROTECTED WITH VARNISH OR EQUIVALENT	15		
OPERATION 1500									
						INSPECTION OF MARKING WITH FREQUENCY 100% BY QUALITY INSPECTOR (VISUAL) AS FOLLOWING : - MARKING AREA AS PER SKETCH 2 - THE PART NUMBER AS PER PROCESS SHEET OR TECHNICAL SHEET - RELEASED DATE - THE JIDNO – WO NUMBER AS PER PROCESS SHEET - THE TAG « EC COM 225 DP » - COVERED OR SEALED WITH THE PYROFLEX 0651 VARNISH	15		
OPERATION 1600									
						FINAL INSPECT. WITH FREQ. 100% BY QUALITY INSPECTOR (VISUAL) : - CHECK THE CONFIGURATION OF THE ASSEMBLY TO INSURE THAT PN IS CONFORM TO ITS DEFINITION AS PER INSTALLATION, ACTUAL PARTS, P/L ON PS, AND DRAWING. - APPLY A QUALITY STAMP ON THE ASSEMBLY TO ASSESS ITS CONFORMITY.		CF	



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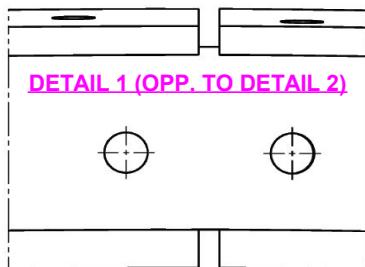
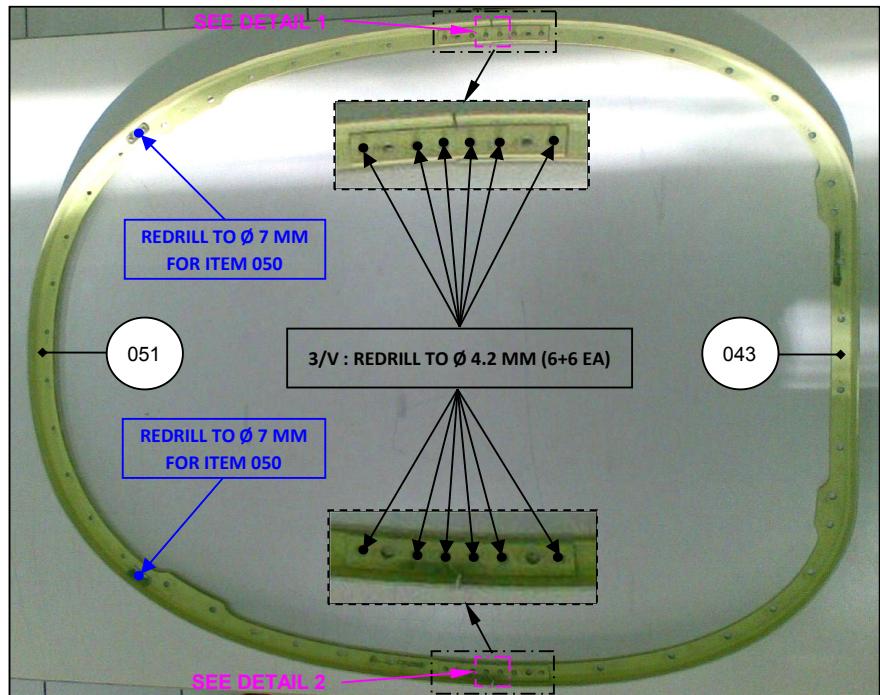
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SKETCH 1



1/D : RECORD ACTUAL GAP
ON FORM TI 332A24097902

F-DP701.15-01

LEGENDS :

● : CLAMPS (4 EA) FOR INSTALLATION ITEM 043

● : CLAMPS (2+2 EA) FOR INSTALLATION ITEM 022 & 023

● : CLAMPS (5 EA) FOR INSTALLATION ITEM 051



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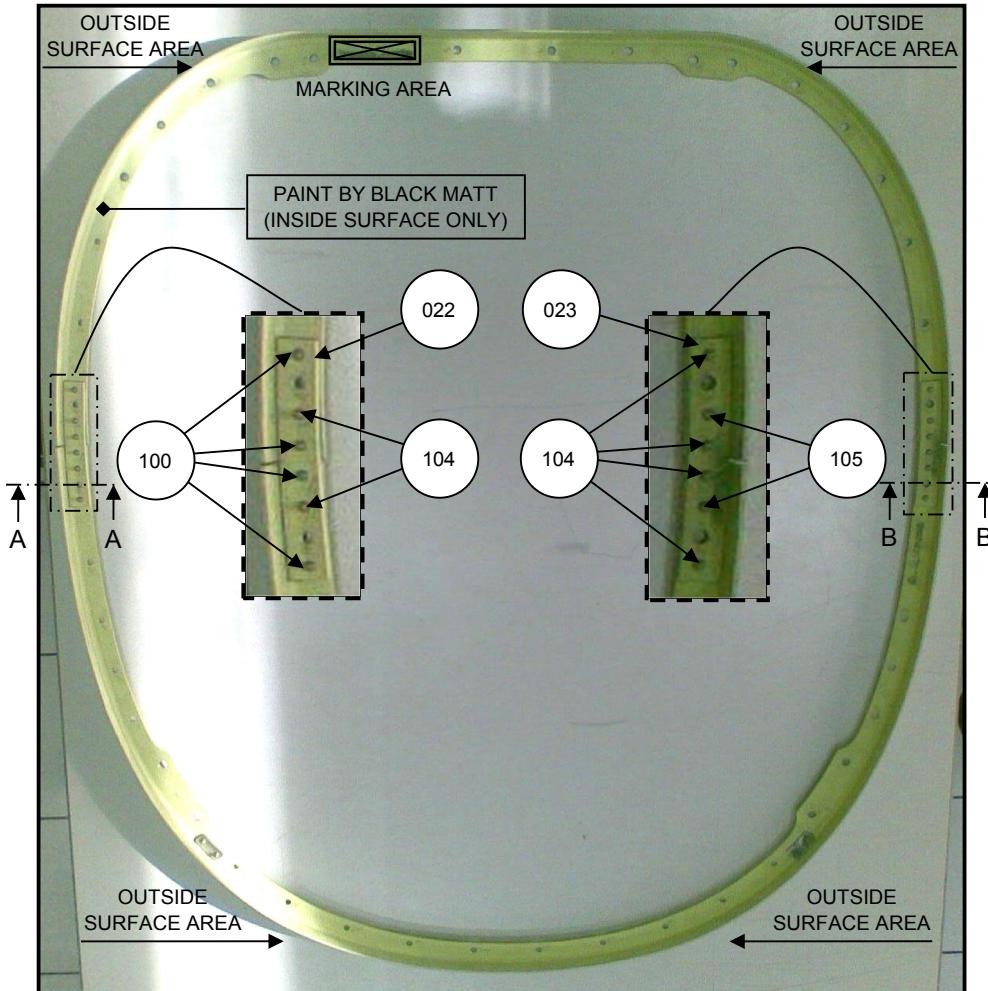
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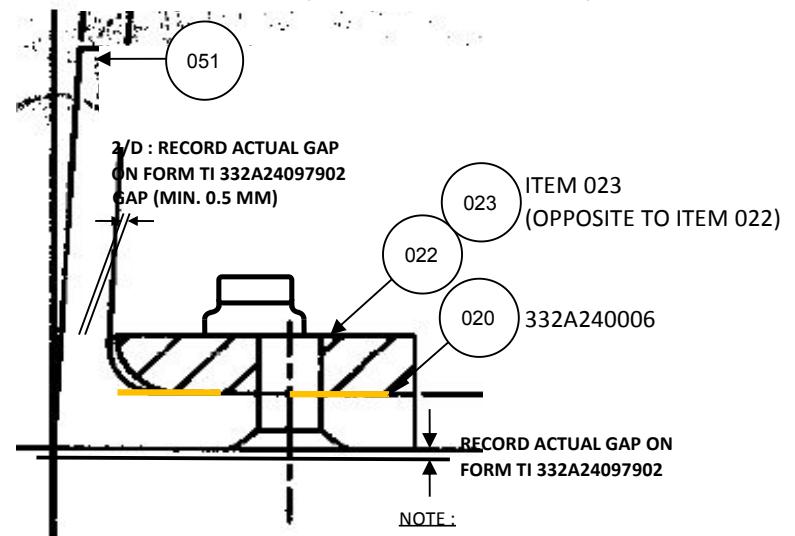
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SKETCH 2

SECTION A-A (OPP. TO SECTION B-B)





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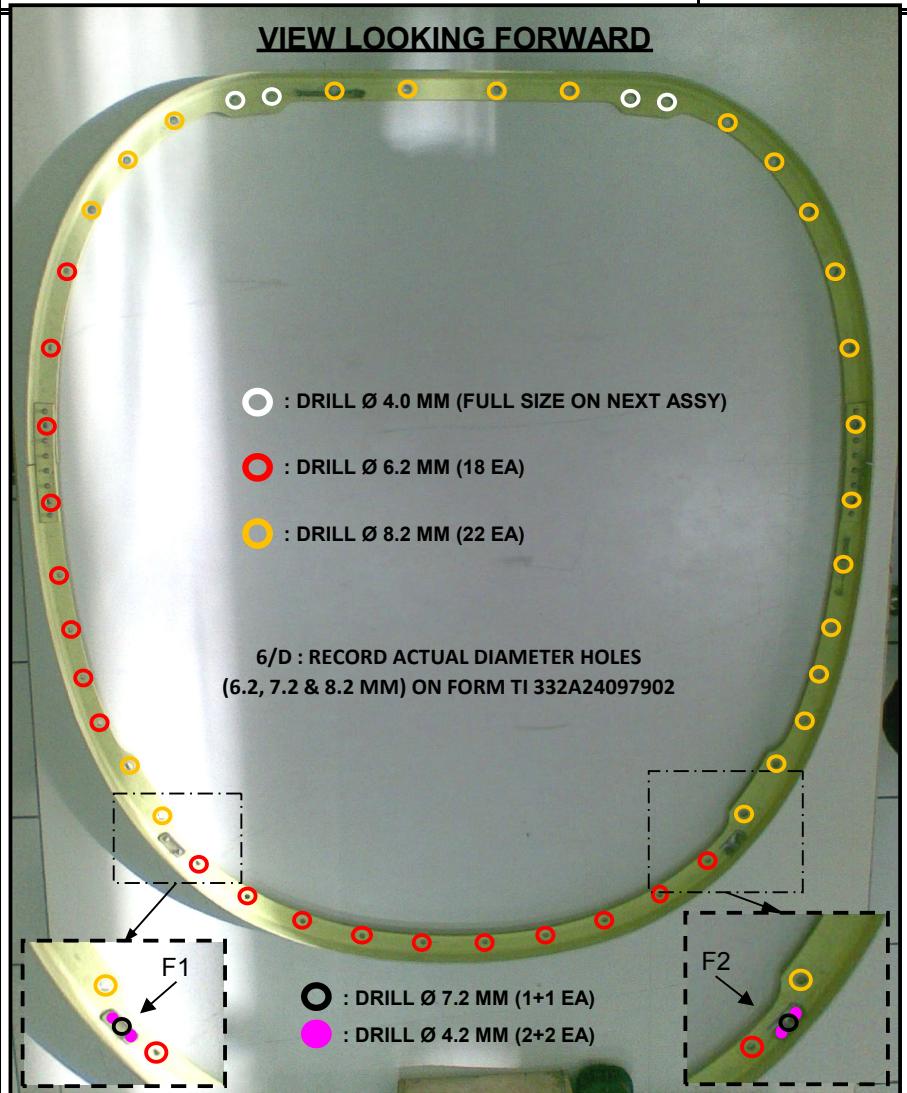
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VIEW LOOKING FORWARD



SKETCH 3

