DaimlerChrysler Ford General Motors

Part Submission Warrant

YAZAKI

Part Name: GROM WIR | Cust. Part Number: MU5T-14603-TA

Shown on Drawing No.: MU5T-14603-TA | Org. Part Number: 7235-0861-30

Engineering Change Level: AELE E 13777777 335 | Dated: 20210609

Additional Engineering Changes: N/A | Dated: N/A

Safety and/or Government Regulation: ☐ Yes ☑ No | Purchase Order No.: N/A | Weight (kg): 0.092

Checking Aid No.: N/A | Checking Aid Engineering Change Level: N/A | Dated: N/A

ORGANIZATION MANUFACTURING INFORMATION

YAZAKI EUROPE LTD | 323047696
Organization Name & Supplier/Vendor Code

Richard-Byrd-Strasse 4-6a
Street Address

Cologne | NRW | D-50829 | Germany
City | Region | Postal Code | Country

CUSTOMER SUBMITTAL INFORMATION

Nursan
Customer Name/Division

Buyer/Buyer Code

FORD
Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? ☑ Yes ☐ No ☐ n/a

Submitted by IMDS or other customer format: IMDS
IMDS ID: 1128456963/1

Are polymeric parts identified with appropriate ISO marking codes? ☐ Yes ☐ No ☑ n/a

REASON FOR SUBMISSION (Check at least one)

- ☑ Initial submission
- ☐ Engineering Change(s)
- ☐ Tooling: Transfer, Replacement, Refurbishment, or additional
- ☐ Correction of Discrepancy
- ☐ Tooling Inactive > than 1 year
- ☐ Change to Optional Construction or Material
- ☐ Supplier or Material Source Change
- ☐ Change in Part Processing
- ☐ Parts produced at Additional Location
- ☐ Other - please specify below: customer request

REQUESTED SUBMISSION LEVEL (Check one)

- ☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- ☑ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
- ☐ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
- ☐ Level 4 - Warrant and other requirements as defined by customer.
- ☐ Level 5 - Warrant with product samples and complete supporting data reviewed at organization's manufacturing location.

SUBMISSION RESULTS

The results for ☑ dimensional measurements ☑ material and functional tests ☐ appearance criteria ☐ statistical process package

These results meet all drawing and specification requirements: ☑ Yes ☐ NO (If "NO" - Explanation Required)

Mold / Cavity / Production Process: serial mould low volume, 1 cavity

DECLARATION

I affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of 96 / 8 hours.

I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.

EXPLANATION/COMMENTS: THIS IS A PURCHASED PART, MANUFACTURED BY DF Elastomer Solutions, DISTRIBUTED BY YAZAKI EUROPE LIMITED

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☑ n/a

Organization Authorized Signature: Telmo Oliveira | Date: 10 February 2023

Print Name: Telmo Oliveira | Phone No. | FAX No.

Title: QT | E-mail: telmo.oliveira@yazaki-europe.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other

Customer Signature | Date

Print Name | Customer Tracking No. (optional)

Select One

(●) Phase 1 ( ) Phase 2 ( ) Phase 3 [ ] Interim (Non-PPAP)

PPAP Submission Warrant

PART INFORMATION

Customer Part Name	GROM WIR	Customer Part Number	7235086130
Shown on Drawing Number	MU5T-14603-TA	Organization Part Number	P002991A
Engineering Change Level	AELE E 13777777 335	Dated	20210609
Additional Engineering Changes	-	Dated	-
Safety and/or Government Regulation	( ) Yes (●) No	Purchase Order Number		Weight (kg) 0,083
Checking Aid Number		Checking Aid Engineering Change Level		Dated

ORGANIZATION MANUFACTURING INFORMATION

DF Elastomer Solutions, Lda 455197574
Organization Name and Supplier/Vendor Code

EN 13 KM 16 - Recta do mindelo
Street Address

Vila do Conde | | 4485-473 | Portugal
City | State/Region | Postal code | Country

CUSTOMER SUBMITTAL INFORMATION

Yazaki
Customer Name/Division

--
Buyer/Buyer Code

V710LV
Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? (●) Yes ( ) No

Submitted by IMDS or other customer format
(If submited by IMDS, enter Module ID no., version and date transmitted) IMDS 1128456963/1

Are polymeric parts identified with appropriate ISO marking codes? (●) Yes ( ) No ( ) n/a

REASON FOR SUBMISSION (Check at least one)

- [x] Initial submission
- [ ] Engineering Change(s)
- [ ] Correction of Discrepancy
- [ ] Other - please specify
- [ ] Tooling: Transfer, Replacement, Refurbishment, or additional
- [ ] Tooling Inactive > than 1 year
- [ ] Change to Optional Construction or Material
- [ ] Supplier or Material Source Change
- [ ] Change in Part Processing
- [ ] Parts produced at Additional Location

REQUESTED SUBMISSION LEVEL (Select one)

( ) Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
(●) Level 2 - Warrant with product samples and limited supporting data submitted to customer.
( ) Level 3 - Warrant with product samples and complete supporting data submitted to customer.
( ) Level 4 - Warrant and other requirements as defined by customer.
( ) Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.

SUBMISSION RESULTS

The results for [x] dimensional measurements, [x] material and functional tests [ ] appearance criteria [ ] statistical process package

These results meet all design requirements (●) Yes ( ) No (If "No" - Explanation Required)

Mold / Cavity / Production Process serial mould low volume, 1 cavity

DECLARATION

I affirm that the samples represented by this warrant are representative of our parts which were made by a process which meets all Production Part Approval Process Manual 4th Edition requirements including all Ford-specific requirements. I further affirm that these samples were produced at the production rate of 96 / 8 hours using 1 production streams. I also certify that documented evidence of such compliance is on file and is available for review.
I have noted any exceptions from this declaration below.

EXPLANATION/COMMENTS Legal requirements covered by this PPAP can be found at www.elastomer-solutions.com

Organization Authorized Signature | Print Name Hernani | Date 1-Jun-22

Title Quality Engineer | Phone +351 252 669 010 | Fax +351 252 669 012 | Email hernani.matos@elastomer-solut

Is each Customer Tool properly tagged and numbered? (●) Yes ( ) No ( ) n/a

Capacity Requirements

Source of the Program Approval requirements | Detail / Date

Program Approval (<PA>) Requirements | APW | MPW

If Program Approval (<PA>) requirements are not met, indicate date when the requirements will be met | Date

Source of the revised requirements after <PA> | Detail / Date

Revised requirements after <PA> | APW | MPW

If the revised requirements after <PA> are not met, indicate date when the requirements will be met | Date

Demonstrated Capacity (record in Ford Capacity System [GCP or MCPV] as Purchased Part Capacity)

Enter capacity commitment (PPC) based on Capacity Analysis Report "Predicted Good Parts per Week" and date of analysis | APPC | MPPC | Date

PPAP **Non-PPAP** [a] FOR FORD USE ONLY

Phased PPAP Warrant Status (⊗) Approved ( ) Rejected ( ) Interim Accepted

~~SQA~~ Signature	Rui Daniel Ramos	Date	Name	
		25-01-2023	e-mail	
~~SQE~~ Signature [b]	Y-EMEA	Date	Name	
			e-mail	

Interim Status
(to be completed by the Organization)

Engineering Authorization

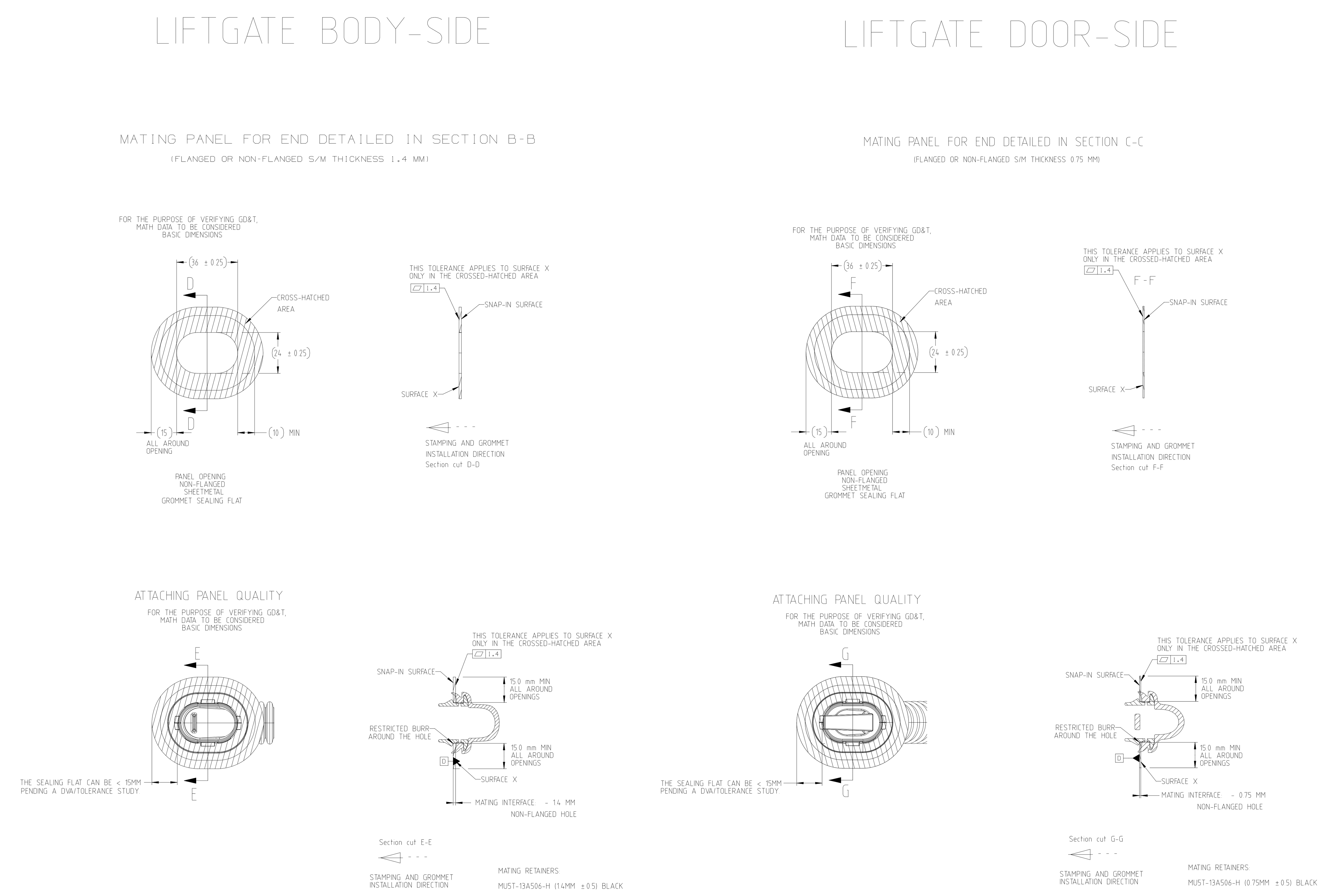
Alert or Alert Report

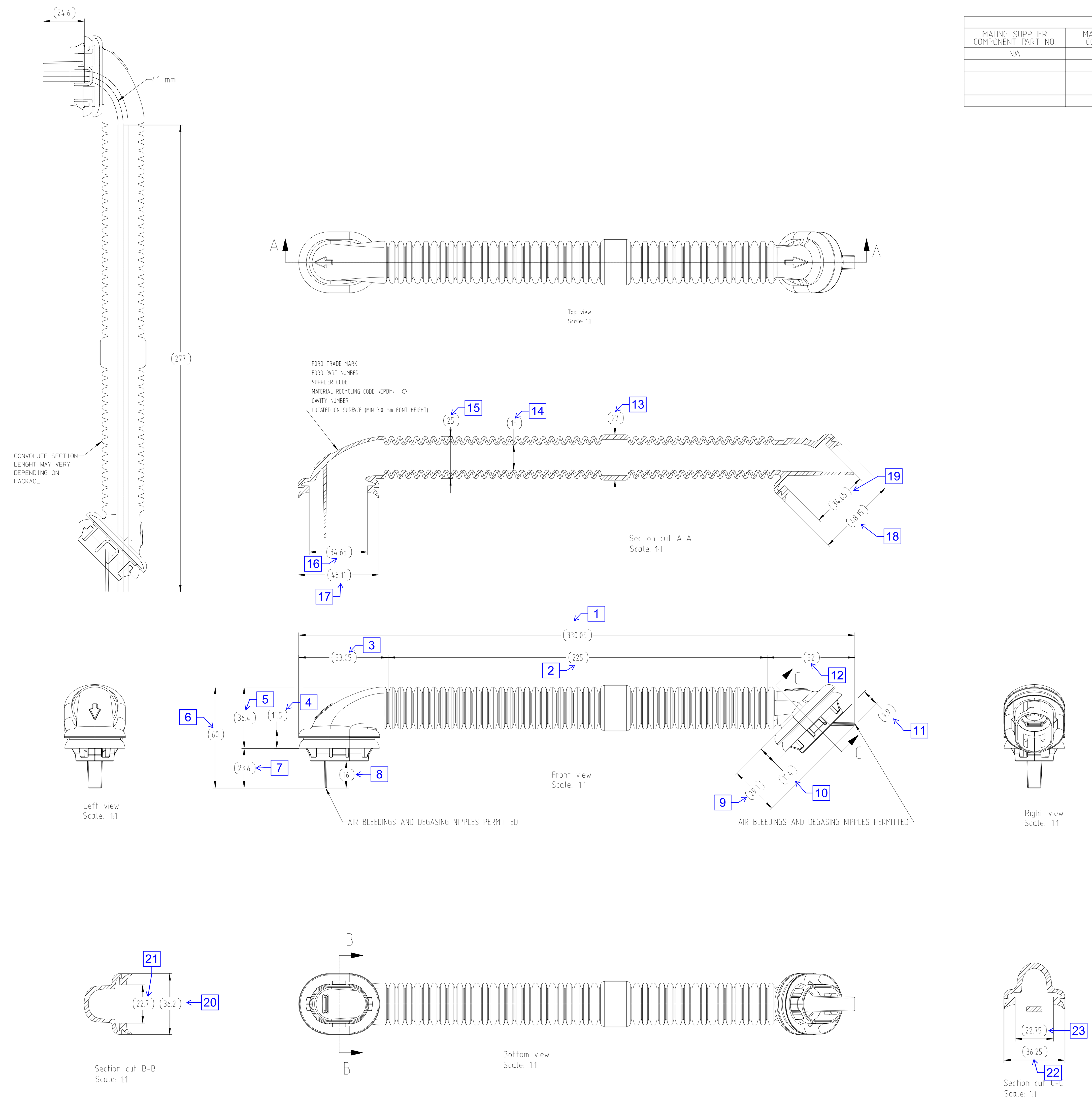
Description:
(Incomplete PPAP Requirements)

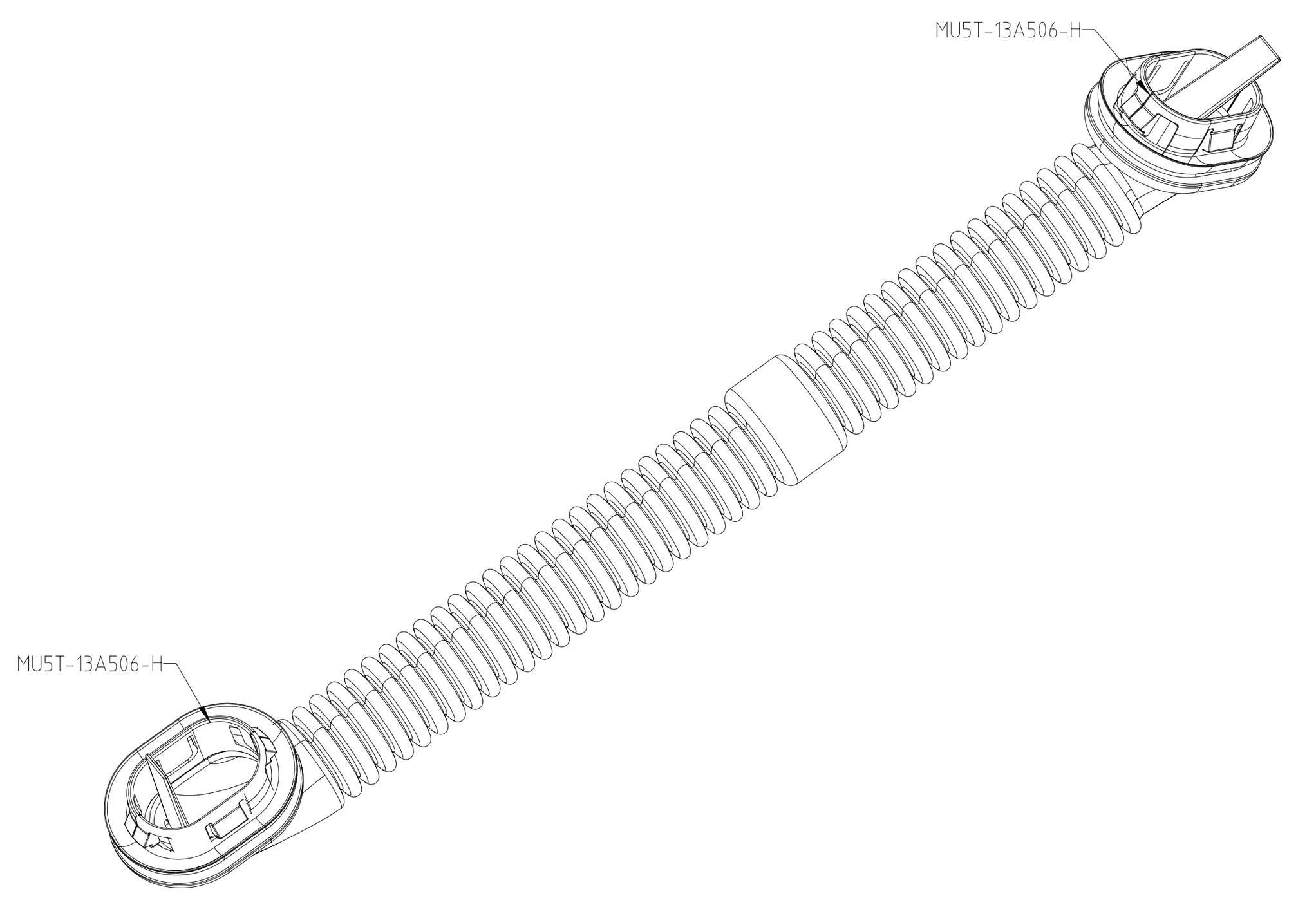
a/ Non-PPAP indicates the part does not satisfy one or more PPAP requirements and is incomplete

b/ P.D. signature for Priority suppliers on GPDS programs

Customer Tracking Number (optional)







LTRS	REVISIONS		
ORIGINATOR	CHECKER	ENGR APP	MAIL APP
RELEASED MU5T-14603-TA AELE E 13777777 335			20210609
FRAUENKRON	MBAYDOUN	MBAYDOUN	XXX

COMPONENT NON-ASSEMBLY INFORMATION CHART

MATING SUPPLIER COMPONENT PART NO.	MATING FORD COMPONENT	MAX. TEMP	WEIGHT	RECYCLING CODE	MATERIAL / SPEC.NO.	COLOR	DESCRIPTION	SUPPLIER COMPONENT PART NO.	FORD COMPONENT PART NO.
N/A	N/A	N/A	83.6g	EPDM	SEE NOTE 11	BLACK	N/A	N/A	MU5T-14603-TA

GENERAL NOTES:

1. FOR ENGINEERING APPROVED SOURCE, SEE THE WERS ENGINEERING NOTICE.
2. FOR CURRENT RELEASE STATUS, SEE THE WERS RELEASE NOTICE.
3. CHANGES AFFECTING DESIGN, COMPOSITION OR PROCESSING OF THE PART PREVIOUSLY APPROVED FOR PRODUCTION REQUIRE PRIOR APPROVAL FROM FORD PRODUCT ENGINEERING. REFER TO QS-9000.
4. MATERIAL RECYCLING CODE >EPDM< PER SAE J1344 TO APPEAR ON PART IN THE CALLED OUT LOCATION.
5. PART BRANDING (TRADEMARK) AND CODING MUST BE IN ACCORDANCE WITH FORD ENGINEERING CAD AND DRAFTING STANDARDS, SECTION E-3. THIS PART/ASSEMBLY MUST COMPLY WITH BRANDING DIRECTIVE E-108 OR THE EXEMPTION NUMBER SHOWN IS THE AUTHORITY FOR NON COMPLIANCE. EXEMPT NO. ________________ (FOR PROTOTYPE TOOLED PART; ONLY PART NUMBER IS REQUIRED)
6. WRITTEN ENGINEERING APPROVAL OF SAMPLE PARTS MAY BE REQUIRED PRIOR TO AUTHORIZATION OF PART PRODUCTION.
7. PART MUST BE FREE OF BURRS AND FLASH WHICH MAY BE DETRIMENTAL TO ASSEMBLY SAFE HANDLING, APPEARANCE OR FUNCTION.
8. THE LOCATION AND EXTENT OF ALL FABRICATION AND/OR MANUFACTURING CHARACTERISTICS SUCH AS FLASH, MOLD, SPLIT LINES, EJECTOR PIN MARKS, OR OTHER IRREGULARITIES MUST HAVE PRODUCT DESIGN ENGINEERING APPROVAL PRIOR TO START OF TOOLING.
9. PARTING LINE ALLOWED IN SEAL AREA. MEMBRANE CAN REMAIN INTACT OR BROKEN. PARTING LINE FLASH ON SEALING SURFACES NOT TO EXCEED 1.5 X 0.1 mm
10. PART MUST HAVE CAVITY IDENTIFICATION IF PRODUCED FROM MULTI-CAVITY TOOLING.
11. MATERIAL GROMMET:
    EPDM ACC. TO SAE J200 TYPE M3 BA 510, B13, F17, Z1, Z2, Z3
    Z1: OZONE RESISTANCE ACC. TO FLTM BP 101-01 PROCEDURE A RATING MAX '0'
    Z2: NO MIGRATION STAINING ACC. TO FLTM BP 153-01 METH.A SLIGHT CONTACT STAINING PERMITTED
    Z3: NO STAINING BY WATER-EXTRACTABLE INGREDIENT ACC. TO FLTM BP 153-01 METH. B
    TOLERANCES: ISO 3302-1 M3
    COLOR: BLACK
12. UNLESS OTERWISE SPECIFIED AND/OR INDICATED (ON DRAWING OR CAD DATA)
    - DIMENSIONS ARE FACE OF VIEW SHOWN AUTOMATICALLY ROUNDED BY COMPUTER FOR INSPECTION (SEE MATH MODEL FOR PRECISE DIMENSIONS). FOR ALL OTHER DIMENSIONS NOT SHOWN BUT REQUIRED FOR TOOL BUILD SEE MATH MODEL FOR PRECISE TOOL PATH DATA.
    - TOLERANCES: GENERAL DIMESIONAL TOLERANCE TABLE
    - ALL CORNERS AND EDGES SHOWN SHARP: MAX R0.4 ±0.25
    - 3D DRAFT IS MASTER, UN-DRAFTED SURFACES IS 2.0° MAX DRAFT
13. UNLESS OTHERWISE SPECIFIED GENERAL TOLERANCES WILL BE RUBBER MANUFACTURERS ASSOCIATED DRAWING DESIGNANTION "A3"

nominal dimension (mm)		EPDM tolerance class M3	ISO 3302-1: 2018-06
over	up to	F (tool-related dimension)	C (not tool-related dimension)
0	4,0	± 0.25	± 0.40
4,0	6,3	± 0.25	± 0.40
6,3	10	± 0.30	± 0.50
10	16	± 0.40	± 0.60
16	25	± 0.50	± 0.80
25	40	± 0.60	± 1.00
40	63	± 0.80	± 1.30
63	100	± 1.00	± 1.60
100	160	± 1.30	± 2.00
160	-	± 0.8 %	± 1.3 %

REFERENCE N/A

MUST CONFORM TO: RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M99P9999-A1 TO SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT

DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 30 — 3RD ANGLE PROJ DIMENSIONS ARE IN MILLIMETERS

CAD TYPE	CAD LOC	CAD FILE			DTMC
K-CATIA5	TC	F_2991_190_C			IS MASTER
PLANT CODE	LINE CODE	OPER NO.	BT NO.	STATION	SIZE
N/A	N/A	N/A	N/A	N/A	N/A
PLANT NAME		DEPT NO.	DESIGN	SCALE	SHT 1
N/A		N/A	FRAUENKRON	1:1	OF 1

TITLE/PART NAME: GROM-WIR

DRAWING/PART NO.: MU5T-14603-TA — N/A

FORD MOTOR COMPANY

ES-PN F_2991_190_C

uncontrolled copy after printing!

Production Part Approval
Dimensional Test Results

DAIMLERCHRYSLER Ford GM

ORGANIZATION:	DF - Elastomer Solutions, Lda	PART NUMBER:	MU5T-14603-TA
SUPPLIER/VENDOR CODE:	455197574	PART NAME:	GROM WIR
INSPECTION FACILITY:		DESIGN RECORD CHANGE LEVEL:	AELE E 13777777 335 20210609
		ENGINEERING CHANGE DOCUMENTS:	

ITEM	DIMENSION/SPECIFICATION	SPECIFICATION / LIMITS		TESTE DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS RESULTS (DATA)	OK	NOT OK
1	330,05	4,29	-4,29	30-05-2022	1	334,00	X	
2	225,00	1,80	-1,80	30-05-2022	1	226,80	X	
3	53,05	0,80	-0,80	30-05-2022	1	52,76	X	
4	11,50	0,60	-0,60	30-05-2022	1	11,49	X	
5	36,40	1,00	-1,00	30-05-2022	1	36,65	X	
6	60,00	1,30	-1,30	30-05-2022	1	59,99	X	
7	23,60	0,50	-0,50	30-05-2022	1	23,34	X	
8	16,00	0,25	-0,25	30-05-2022	1	16,18	X	
9	29,10	1,00	-1,00	30-05-2022	1	29,21	X	
10	11,40	0,60	-0,60	30-05-2022	1	11,42	X	
11	9,9	0,25	-0,25	30-05-2022	1	10,08	X	
12	52	1,30	-1,30	30-05-2022	1	51,41	X	
13	27,00	0,60	-0,60	30-05-2022	1	27,07	X	
14	15,00	0,40	-0,40	30-05-2022	1	15,24	X	
15	25,00	0,80	-0,80	30-05-2022	1	25,10	X	
16	34,65	0,60	-0,60	30-05-2022	1	34,44	X	
17	48,11	0,80	-0,80	30-05-2022	1	47,89	X	
18	48,15	0,80	-0,80	30-05-2022	1	48,30	X	
19	34,65	0,60	-0,60	30-05-2022	1	34,74	X	
20	36,20	0,60	-0,60	30-05-2022	1	36,32	X	
21	22,70	0,50	-0,50	30-05-2022	1	22,95	X	
22	36,25	0,60	-0,60	30-05-2022	1	36,51	X	
23	22,75	0,50	-0,50	30-05-2022	1	23,06	X	

Blanket statements of conformance are unacceptable for any test results.

March 2006

CFG-1003

SIGNATURE	TITLE	DATE
Hernani Matos	Quality Engineering	26-05-2022

(277_21/143_22/_S002991A_RCAB1SN4505202)

Production Part Approval
Material Test Results

DAIMLERCHRYSLER Ford GM

ORGANIZATION:	DF - Elastomer Solutions, Lda	PART NUMBER:	MU5T-14603-TA
SUPPLIER/VENDOR CODE:	455197574	PART NAME:	GROM WIR
INSPECTION FACILITY:		DESIGN RECORD CHANGE LEVE	EE00 E 10915170 000 20210609
* CUSTOMER SPECIFIED SUPPLIER/VENDOR CODE:		ENGINEERING CHANGE DOCUMENTS:	
* If source approval is req'd, include the supplier (Source) & Customer assigned code.		NAME of LABORATORY:	

ITEM	MATERIAL SPEC. NO. / VER / DATE	SPECIFICATION / LIMITS	TESTE DATE	QTY. TESTED	SUPPLIER TEST RESULTS RESULTS (DATA)	OK	NOT OK
	M3 BA 510 B13 F17 Z1 Z2 Z3 (SAE J200)					x	
510	**Basic requirements:**						
	Hardness acc.ASTM D2240	50+/-5 Sh A	21-01-2022	1	53	x	
	Tensile strength acc. D412 die C	≥ 10 MPa	21-01-2022	1	12,43	x	
	Elongation at breakacc. D412 die C	≥ 400 %	21-01-2022	1	718	x	
	Heat resistance acc to ASTM D 573 (70h at 100ºC)						
	-Change in hardness	Max. ±15 Sh. A	28-01-2022	1	+ 2	x	
	-Change in tensile strength	Max. ±30 %	28-01-2022	1	+8,44	x	
	-Change in elongation at break	Max. -50 %	28-01-2022	1	-11,42	x	
	Suffix requirements:						
B13	Compression Set acc ASTM D395, method B (22h/70℃)	Max. 25 %	25-01-2022	1	12,93	x	
F17	Low temperature britleness acc to ASTM D 2137, method A (3min/-40ºC)	No cracks	08-03-2022	1	OK	x	
Z1	Ozone resistance acc. To FLTM BP 101-01, proc. A	Max. Rating 0	21-01-2022	1	OK for characteristics of EPDM	x	
Z2	Migration staining acc. To FLTM BP 153-01, method A	Slight staining perm	…	1	OK	x	
Z3	Staining by water extractable ingredients acc to FLTM BP 153-01, method B	No staining by water extractable ingredients	…	1	OK	x	

Blanket statements of conformance are unacceptable for any test results.

SIGNATURE	TITLE	DATE
Hernani Matos	Quality Engineering	26-05-2022

(277_21/143_22/_S002991A_RCAB1SN4505202)

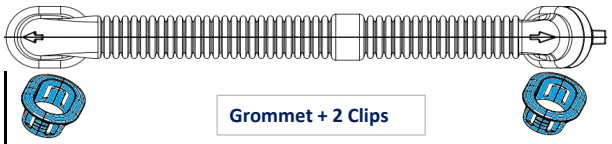
ElastomerSolutions

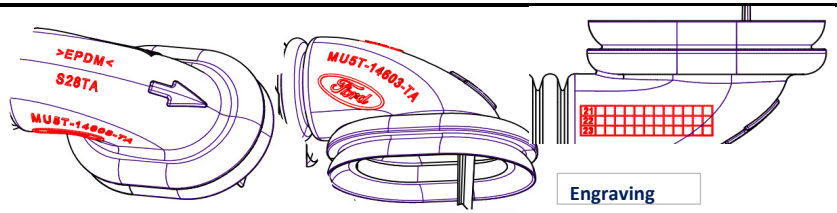
Control Plan

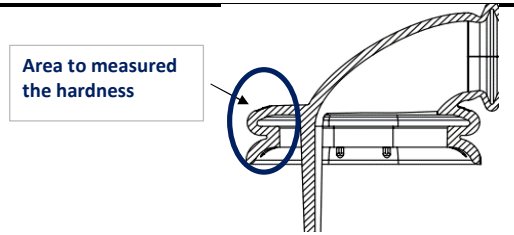
Prototype	
Pre-Serie	X
Serie	

Control Plan Nb:	CP_P002991A_AI_01	Prepared by:	Hernani	Date (Orig.): 01-10-2021	Date (Rev.): 23-05-2022
Part Nb:	P002991A	Team	CF; SC; EO; MC; PF; CT	CP Approval in workstation (by customer if req.):	
Part designation:	Grow-Wir	Supplier (if req.):			
Drawing: Engineering level:	MU5T-14603-TA 09-06-2021	ES Plant:	Portugal		

Pictures/Scheme







N. Op	Operation/ Process Designation	Characteristic	PRD	PRC	SC	Product / Process / Specification / Tolerance	Control Method	Sample		Control Instruction	Responsible	Records	Reaction Mode
								Size	Frequence				
5/10	Incoming Material/ Qualitative incoming	05_PC_Geral_Receção_Compostos_PS											
5/10	Incoming Material/ Qualitative incoming	05_PC_Geral_Receção_Componentes_PS											
25	Vulcanization	25_PC_Geral_Vulcanização_PS											
25	Vulcanization	Hardness	x	--	--	Material (50 ± 5 Sh. A);	Durometer	3 Parts	Once per shift (after cooling parts)	Work instrution T.QES.009_using the analogue durometer "	Process controler	Computer system (in case of failure ESP-QES-051 Record of expansion and hardness)	Retain produced parts; Analyze deviation and disposition according to the analysis made by the quality (According to P_ESP_09 Nonconformities)
25	Vulcanization	Engraving	x	--	--	Acc to picture	Visual	1 complete cycle of each plate	Setup /end of prodution	Work instrution IT.PRD.005_ Setup and end of production	Chef Leader/ Process controler	Approved cycle label and ESP_PRD_10 (Checking the start of molds in production)	Retain produced parts; Analyze deviation and give according to the analysis made by the quality and process engineering

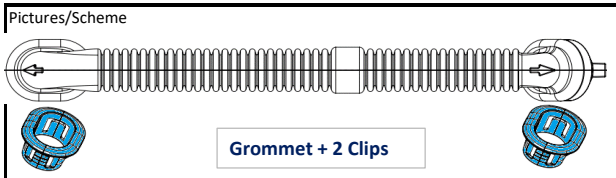
ElastomerSolutions

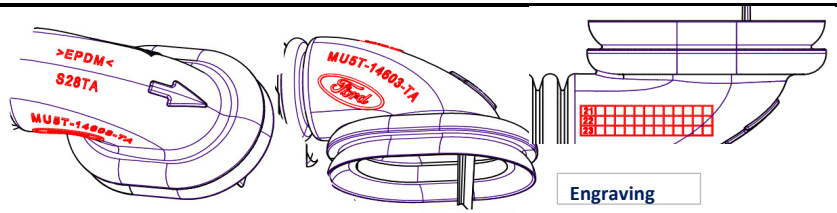
Control Plan

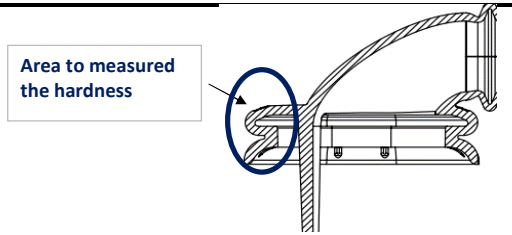
Prototype	
Pre-Serie	X
Serie	

Control Plan Nb:	CP_P002991A_AI_01	Prepared by:	Hernani	Date (Orig.): 01-10-2021	Date (Rev.): 23-05-2022
Part Nb:	P002991A	Team	CF; SC; EO; MC; PF; CT	CP Approval in workstation (by customer if req.):	
Part designation:	Grow-Wir	Supplier (if req.):			
Drawing: Engineering level:	MU5T-14603-TA 09-06-2021	ES Plant:	Portugal		

Pictures/Scheme







N. Op	Operation/ Process Designation	Characteristic	PRD	PRC	SC	Product / Process / Specification / Tolerance	Control Method	Sample		Control Instruction	Responsible	Records	Reaction Mode
								Size	Frequence				
25	Vulcanization	Flash	--	x	--	Acc drawing (Max. Heigth 1,5 mm Max. Tikness 0,5 mm)	Visual	All parts	All cycles	-------	Operator	----------	Retain produced parts; Analyze deviation and give disposition according to the analysis done by quality and process engineering
							Profiler Projector	Doubtful parts	-------	Work Instrution IT_LAB_014 (RMM equipment WI)	Laboratory Technician	ES_SQM_024 Dimensional Report	
25	Vulcanização	Dimensions	X	--	--	Acc to drawing	Profiler Projector	1 part	Start of project / in case of changes	IT_LAB_014	Laboratory Technician	ES_SQM_024	Retain produced parts; Analyze deviation and disposition according to the analysis made by the quality (According to P_ESP_09 Nonconformities)
35	Assembly	35_PC_Geral_Montagem_PS_09											
50	Packaging	50_PC_Geral_Embalagem_PS											
60	Expedition	60_PC_Geral_Expedição_PS											

LEGEND:	Notes:
CC = Critical Characteristic; SC = Special Characteristic ; ES = Elastomer Solutions; CP = Control Plan	Control Plan Revision is mandatory after PFMEA revision
Nb Op = Number of Operation identified in Process Flow Diagram;	Validation at Workstation to be done for each revision

REVISION HISTORY

REVISION N.	DATE	REASON FOR REVISION
0	01-10-2021	Emission
1	23-05-2022	Emission for low volume serial tool