



Part Submission Warrant

Part Name	Eyelet Terminal TYP - Loose Parts	Cust. Part Number	NU5T-14463-MA
Shown On Drawing No.	NU5T-14463-MA	Org. Part Number	R9467-L
Engineering Change Level	A1	Dated	10/5/21
Additional Engineering Changes	NA	Dated	
Safety and/or Government Regulation	☐ Yes ☒ No	Purchase Order No.	NA
Checking Aid No.	NA	Weight (kg)	.0059
Checking Aid Engineering Change Level	NA	Dated	

ORGANIZATION MANUFACTURING INFORMATION

RP TECH DE MEXICO S DE RL DE CV (812887504)
Supplier Name & Supplier/Vendor Code
Carretera estatal 431 km 2+200 Int 73 Parque Tecnologico Innovacion
(Queretaro) RFC: RME180417MD9

Street Address

El Marques QRO 76246 Mexico
City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

NURSAN OTOMOTIV EOOD

Customer Name/Division

Buyer/Buyer Code

AUTOMOTIVE

Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported? ☒ Yes ☐ No

Submitted by IMDS or other customer format: 1287002737 / 1

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

REASON FOR SUBMISSION (Check at least one)

- | | |
|---|--|
| ☐ Initial Submission | ☐ Change to Optional Construction or Material |
| ☐ Engineering Change(s) | ☐ Supplier or Material Source Change |
| ☐ Tooling: Transfer, Replacement, Refurbishment, or additional | ☐ Change in Part Processing |
| ☐ Correction of Discrepancy | ☐ Parts Produced at Additional Location |
| ☐ Tooling Inactive less than 1 year | ☒ Annual Submission |
| | ☐ Other - please specify below |

REQUESTED SUBMISSION LEVEL (Check One)

- ☐ Level 1 - Warrant only (and for designated appearance items, and 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 and product samples and complete supporting data reviewed at supplier's manufacturing location.

SUBMISSION RESULTS

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

These results meet all design record requirements: ☒ Yes ☐ NO (If "NO" - Explanation Required)

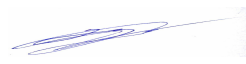
Mold / Cavity / Production Process STAMPING

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 24000 / 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: _____

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☒ N/A

Organization Authorized Signature  Date 12/22/23
Print Name Hernández, Juan Luis Phone No. 4493400393 Fax No. _____
Title Quality Analyst E-mail JuanLHernandez@Eaton.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☒ Approved ☐ Rejected ☐ Other _____

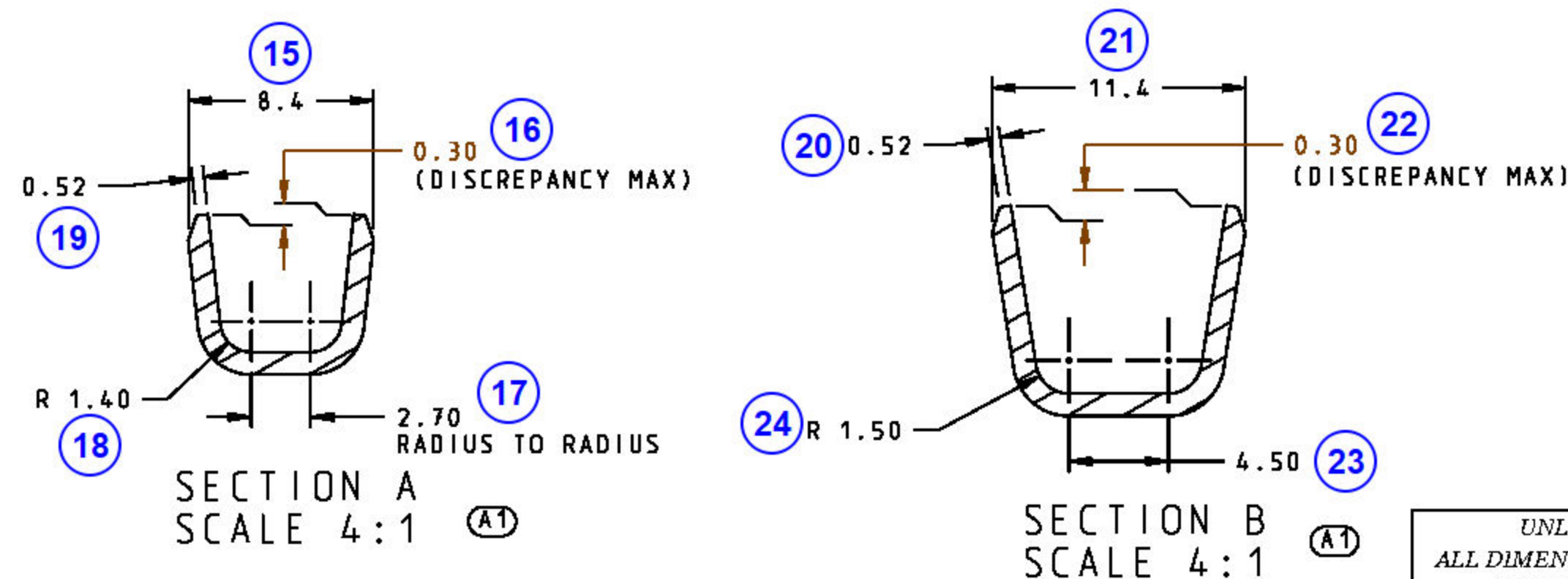
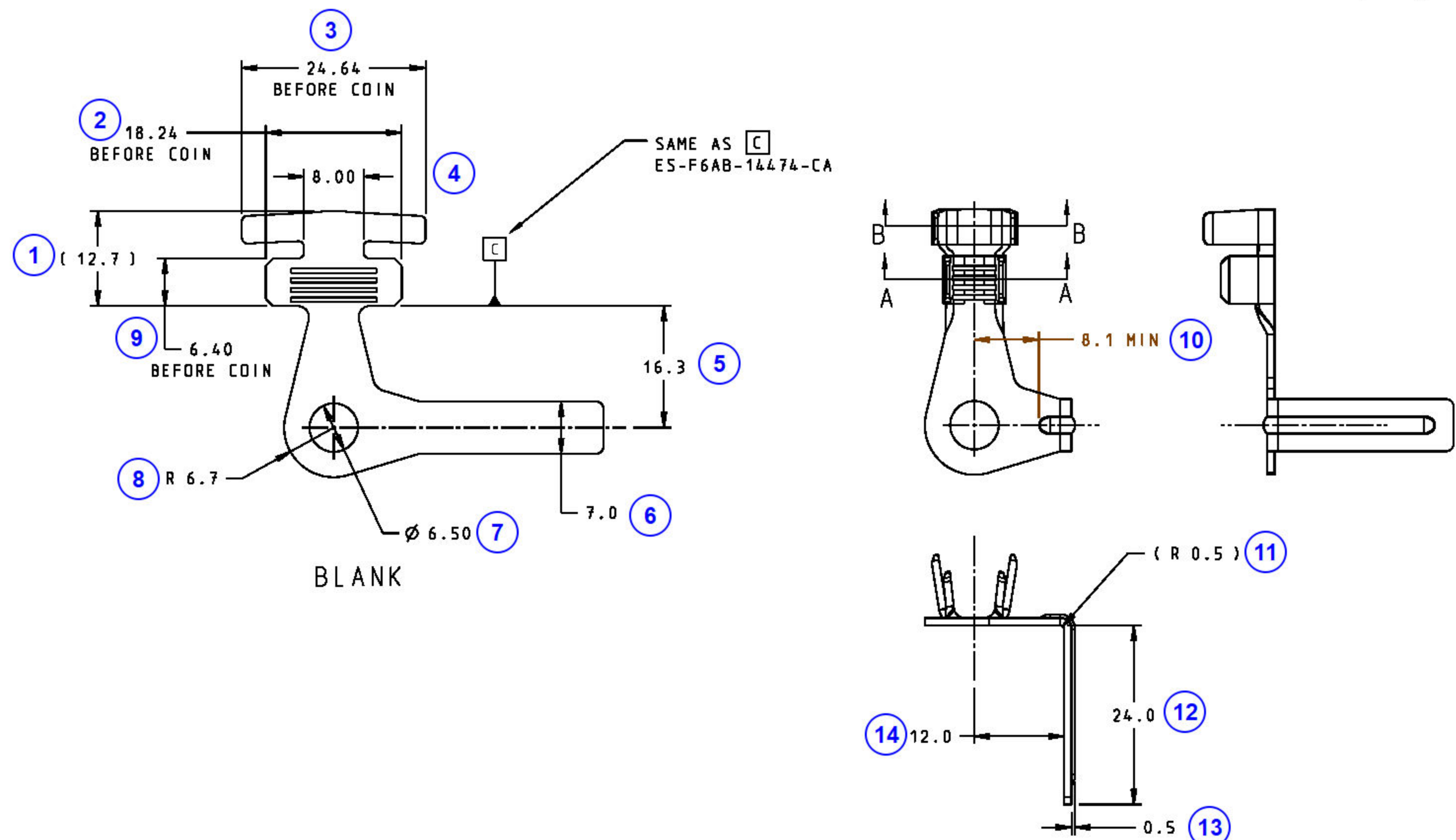
Customer Signature  Date 29.12.2023

Print Name Nadiye BARUTÇU Customer Tracking Number (optional) _____

TERMINAL INFORMATION													
FORD PART NO.	SUPPLIER PART NO.	DESCRIPTION	GREASED Y/N	BASE MATERIAL	PLATING MATERIAL	PLATING THICKNESS	COPPER WEIGHT	TOTAL WEIGHT	MATERIAL THICKNESS	MATERIAL HARDNESS	MAX AMBIENT TEMPERATURE	CONDUCTOR MIN/MAX CSA	INSULATION MIN/MAX OD
NUST-14463-MA	R9467	TRMNL-EYLT TYP	N	C422	TIN	0.001 MIN	TBD	TBD	1.02	H04	125°C	TBD/TBD	TBD/TBD

TERMINAL CRIMP & GRIP REFERENCE TABLE									
FORD PART NO.	WIRE TYPE / SPECIFICATION (DESIGN INTENT)	WIRE SIZE	STRIP LENGTH (mm)	CONDUCTOR CRIMP INFO		INSULATION CRIMP INFO		NOTES	
				C.C.W. (mm)	C.C.H. (mm)	I.C.W. (mm)	I.C.H. (mm)		
NUST-14463-MA	ESF-M2L3-A	BRAID WIRE	N/A	7.25	4.20	9.60	4.95	SEE NOTE 6	

REV	DESCRIPTION	DATE	APP.
0	RELEASED FOR PRODUCTION	3-30-2021	TONY
A1	REVISED SECTION VIEWS	10-5-2021	TONY



UNLESS SPECIFIED ALL DIMENSIONS ARE IN METRIC 3RD ANGLE PROJECTION			
TOLERANCES:			
DECIMAL:	XXX	XX	X
INCHES:	---	---	---
METRIC:	---	±3	±5
EXCEPT AS NOTED			

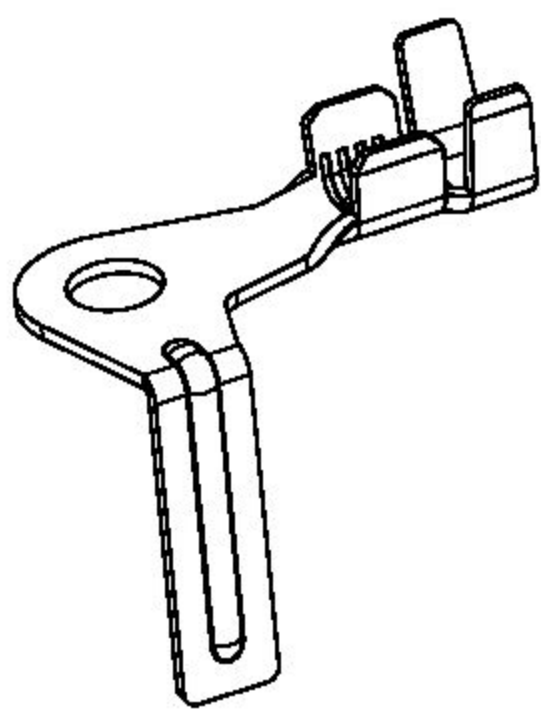
Royal POWER SOLUTIONS POWERING GREAT CONNECTIONS			
125 Mercedes Dr., Carol Stream, IL 60188 USA	(630) 766-2685 FAX 0401	DESIGNED: JSZALAY	DATE 3-30-2021
SCALE: 2:1	MATERIAL: SEE CHART	CHECKED: TONY	REV: A1
CUSTOMER: ROYAL	DWG NO. TBD	PART NUMBER: R9467-L	
TITLE: TRMNL-EYLT TYP			

GENERAL NOTES:

- 1) PARTS CONFORM TO THE ELECTRICAL CONNECTION SYSTEM DESIGN SPECIFICATION (SDS) VER. 20 EL0176
- 2) -GRIP PER FORD TERMINAL WIRE GRIP SPEC: ES-F6AB-14474-CA (DD); EXCEPT AS SHOWN, EXCEPT FOR CARRIER STRIPS.
-PARTS COMPLY WITH ES-D8AB-1293-A
-FOR USE WITH BRAID WIRE PER ESF-M2L3-A 30GA. (5 GROUPS OF 24 STRANDS EACH. 12,000 CIRCULAR MILLS TOTAL)
- 3) N/A
- 4) N/A
- 5) 0.2mm MAX RADIUS PERMISSIBLE ON EDGES AND FILLETS SHOWN AS SHARP FOR STAMPING PART
- 6) CRIMP VALUES ARE RECOMMENDATIONS. HARNESS SUPPLIER HAS CRIMP DEVELOPMENT RESPONSIBILITY
- 7) PARTS SUPPLIED LOOSE PIECE. REELED VERSION NOT AVAILABLE

 <i>Royal Die & Stamping Co., Inc.</i>	P08BA	Royal POWER SOLUTIONS
125 Mercedes Dr., Carol Stream, IL 60188 USA (630) 766-2685 FAX 0401		
ROYAL PART NO : R9467		

REFERENCE EYELET TERMINAL					
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 <u>30</u>				 3RD ANGLE PROJ DIMENSIONS ARE IN MILLIMETERS	
CAD TYPE	CAD LOC.	CAD FILE		DTMC	
K-CATIAS	TC	NUST-14463-M-DWG-01		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	JSZALAY	2:1	OF 1
TITLE/PART NAME					
TRMNL-EYLT TYP					
DRAWING/PART NO.				N/A	
NUST-14463-MA					
 FORD MOTOR COMPANY					



APPROVED
By ALD at 11:44 am, Nov 02, 2021

Production Part Approval Dimensional Test Results



ORGANIZATION: Royal Die & Stamping Co., Inc. SUPPLIER/VENDOR CODE:					PART NUMBER: R9467-L PART NAME: Eyelet Terminal TYP - Loose Parts						
INSPECTION FACILITY: Royal Die & Stamping Co., Inc. ADDITIONAL REMARKS: Annual PPAP Layout					DESIGN RECORD CHANGE LEVEL: A1 ENGINEERING CHANGE DOCUMENTS:						
ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)			REMARKS	OK	NOT OK	
Note 1	Parts conform to the electrical connection systema design specification (SDS) ver. 20 ELO176	Attribute	11/1/23	1	Pass				X		
Note 2	- Grip per FORD terminal wire grip spec: ES-F6DB-14474-CA (DD) except as shown, except for carrier strips.	Attribute	11/1/23	1	Pass				X		
Note 3	N/A	Attribute	11/1/23	1	Pass				X		
Note 4	N/A	Attribute	11/1/23	1	Pass				X		
Note 5	0.2mm max Radius permissible on edges and fillets shown as sharp for stamping part.	Attribute	11/1/23	1	Pass				X		
Note 6	Crimp values are recommendations hasness supplier has crimp development responsibility	Attribute	11/1/23	1	Pass				X		
Note 7	Parts supplied loose piece. Reeled version not available	Attribute	11/1/23	1	Pass				X		
1	Crimp height (12.70)	Attribute	11/1/23	1	Pass				X		
2	Lenght before coin 18.24	18.54 mm 17.94 mm	11/1/23	3	18.24	18.24	18.24		X		
3	Lenght before coin 24.64	24.94 mm 24.34 mm	11/1/23	3	24.64	24.64	24.64		X		
4	Length Neck 8.00	8.30 mm 7.70 mm	11/1/23	3	8.00	8.00	8.00		X		
5	Center hole to crimp 16.3	16.80 mm 15.80 mm	11/1/23	3	16.30	16.30	16.30		X		
6	Lenght tab 7.0	7.50 mm 6.50 mm	11/1/23	3	7.02	7.02	7.00		X		
7	Diameter 6.50	6.80 mm 6.20 mm	11/1/23	3	6.53	6.53	6.52		X		
8	Radii 6.7	7.20 mm 6.20 mm	11/1/23	3	6.72	6.68	6.72		X		
9	Lenght crimp 6.40	6.70 mm 6.10 mm	11/1/23	3	6.40	6.40	6.40		X		
10	Center hole to tab 8.1	8.10 mm Min	11/1/23	3	8.90	8.92	9.90		X		
11	Radius (0.5)	Attribute	11/1/23	1	Pass				X		
12	Tab length 24.0	24.5 mm 23.5 mm	11/1/23	3	23.9	23.9	23.9		X		
13	Gusset 0.5	1.0 mm 0.0 mm	11/1/23	3	0.5	0.4	0.4		X		
14	Center hole to tab 12.0	12.5 mm 11.5 mm	11/1/23	3	12.3	12.2	12.3		X		
15	Crimp length 8.4	8.9 mm 7.9 mm	11/1/23	3	8.1	8.2	8.2		X		
16	Eveness 0.30	0.30 mm Max	11/1/23	6	0.16 0.04	0.02	0.02	0.02	0.02	X	
17	Inside crimp 2.70	3.00 mm 2.40 mm	11/1/23	3	2.70	2.70	2.70		X		
18	Radius 1.40	1.70 mm 1.10 mm	11/1/23	3	1.40	1.36	1.38		X		
19	Coin 0.52	0.82 0.22	11/1/23	3	0.48	0.50	0.46		X		
20	Coin 0.52	0.82 mm 0.22 mm	11/1/23	3	0.62	0.58	0.61		X		

Production Part Approval Dimensional Test Results



ORGANIZATION: Royal Die & Stamping Co., Inc. SUPPLIER/VENDOR CODE:					PART NUMBER: R9467-L PART NAME: Eyelet Terminal TYP - Loose Parts						
INSPECTION FACILITY: Royal Die & Stamping Co., Inc. ADDITIONAL REMARKS: Annual PPAP Layout					DESIGN RECORD CHANGE LEVEL: A1 ENGINEERING CHANGE DOCUMENTS:						
ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)			REMARKS	OK	NOT OK	
21	Crimp length 11.4	11.9 mm 10.9 mm	11/1/23	3	11.5	11.5	11.5		X		
22	Eveness 0.30	0.30 mm Max	11/1/23	6	0.16 0.03	0.01	0.02	0.04	0.04		X
23	Inside crimp 4.50	4.80 mm 4.20 mm	11/1/23	3	4.50	4.50	4.50		X		
24	Radius 1.50	1.80 mm 1.20 mm	11/1/23	3	1.48	1.49	1.52		X		

Blanket statements of conformance are unacceptable for any test results.

MARCH **CFG-1003**

2006

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
 Julio Rivera	Quality Technician	11/1/23



Royal Power Solutions
125 Mercedes Drive
Carol Stream, IL 60188
Tel (630) 766-2685
Fax (630) 766-0401

Process Flow Chart

Part No R9467-L	Rev A1	Name Eyelet Terminal TYP - Loose Parts		
Customer	Customer Part No 000000007009740402	Rev	Rev Date	Customer Part Rev
FMEA R9467-L-A1 - Approved		Control Plan 9567 - Pre-Launch - Active - Primary		
Core Team				

Operation	Inspection Step	All Specifications
 20: Stamp - Finish Approved Workcenters:M-018	Receiving	A - Material Procurement
	Transport Tooling to Work Center	B - Transport Tooling to Work Center
	Transport Material to Work Center	C - Transport Material to Work Center
	Setup	D - Set-up Work Center
		D-A - Verify Correct Raw Material at Machine
		D-B - Verify Correct Tooling 01685
		D-C - Verify Correct Machine Operating Parameters
		D-C1 - Feed Advance Angle ON
		D-C2 - Feed Advance Angle OFF
		D-C3 - Pilot Release Angle ON
		D-C4 - Pilot Release Angle OFF
		D-C5 - Short Feed Sensor ON
		D-C6 - Short Feed Sensor OFF
		D-C7 - Strokes Per Minute (SPM) (Target: 90)
		D-D - Verify All Safety Guards are Enabled
		D-E - Confirm All Setup Parts Have been Scrapped
	Quality First Piece	Visual 1 - 4 Serrations must be present at correct location - See Print
		Visual 2 - Coin on wire and insulation crimps must be visually present
		Visual 3 - Part loose
		Visual Defect 1 - No Fractures on part
		Visual Defect 2 - No Slug Marks
		Visual Defect 3 - No Burrs
		Visual Defect 4 - No Slivers
		Visual Defect 5 - No expose Raw material
		Visual Defect 6 - No excessive Tool Marks
		6 - Lenght tab 7.0 (Target: 7mm)
		7 - Diameter 6.50 (Target: 6.5mm)

	8 - Radii 6.7 (Target: 6.7mm)
	10 - Center hole to tab 8.1 (One-Sided Minimum: 8.1mm)
	12 - Tab length 24.0 (Target: 24mm)
	13 - Gusset 0.5 (Target: 0.5mm)
	14 - Center hole to tab 12.0 (Target: 12mm)
	15 - Crimp length 8.4 (Target: 8.4mm)
	16 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
	19 - Coin 0.52 (Target: 0.52)
	20 - Coin 0.52 (Target: 0.52mm)
	21 - Crimp length 11.4 (Target: 11.4mm)
	22 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
Operator - In-process Inspection	Visual 1 - 4 Serrations must be present at correct location - See Print
	Visual 2 - Coin on wire and insulation crimps must be visually present
	Visual 3 - Part loose
	Visual Defect 1 - No Fractures on part
	Visual Defect 2 - No Slug Marks
	Visual Defect 3 - No Burrs
	Visual Defect 4 - No Slivers
	Visual Defect 5 - No expose Raw material
	Visual Defect 6 - No excessive Tool Marks
	7 Op - Diameter 6.50
	15 - Crimp length 8.4 (Target: 8.4mm)
	21 - Crimp length 11.4 (Target: 11.4mm)
Process Verification	D-C7 - Strokes Per Minute (SPM) (Target: 90)
	D-C8 - Blower Angle ON
	D-C9 - Tipo de Lubricante
	D-C10 - Tonelaje de Cierre (Target: 80)
Quality - In-process Inspection	Visual 1 - 4 Serrations must be present at correct location - See Print
	Visual 2 - Coin on wire and insulation crimps must be visually present
	Visual 3 - Part loose
	Visual Defect 1 - No Fractures on part
	Visual Defect 2 - No Slug Marks
	Visual Defect 3 - No Burrs
	Visual Defect 4 - No Slivers
	Visual Defect 5 - No expose Raw material
	Visual Defect 6 - No excessive Tool Marks
	6 - Lenght tab 7.0 (Target: 7mm)
	7 - Diameter 6.50 (Target: 6.5mm)

	10 - Center hole to tab 8.1 (One-Sided Minimum: 8.1mm)
	12 - Tab length 24.0 (Target: 24mm)
	13 - Gusset 0.5 (Target: 0.5mm)
	14 - Center hole to tab 12.0 (Target: 12mm)
	15 - Crimp length 8.4 (Target: 8.4mm)
	16 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
	21 - Crimp length 11.4 (Target: 11.4mm)
	22 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
Quality Last Piece	Visual 1 - 4 Serrations must be present at correct location - See Print
	Visual 2 - Coin on wire and insulation crimps must be visually present
	Visual 3 - Part loose
	Visual Defect 1 - No Fractures on part
	Visual Defect 2 - No Slug Marks
	Visual Defect 3 - No Burrs
	Visual Defect 4 - No Slivers
	Visual Defect 5 - No expose Raw material
	Visual Defect 6 - No excessive Tool Marks
	6 - Lenght tab 7.0 (Target: 7mm)
	7 - Diameter 6.50 (Target: 6.5mm)
	10 - Center hole to tab 8.1 (One-Sided Minimum: 8.1mm)
	12 - Tab length 24.0 (Target: 24mm)
	13 - Gusset 0.5 (Target: 0.5mm)
	14 - Center hole to tab 12.0 (Target: 12mm)
	15 - Crimp length 8.4 (Target: 8.4mm)
	16 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
	19 - Coin 0.52 (Target: 0.52)
	20 - Coin 0.52 (Target: 0.52mm)
	21 - Crimp length 11.4 (Target: 11.4mm)
	22 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
Final Audit	H - Labels correct & cartons sealed properly
Transport to Final Location	I - Transport to Final Location
PPAP Layout	1 - Crimp height (12.70)
	2 - Lenght before coin 18.24 (Target: 18.24mm)
	3 - Lenght before coin 24.64 (Target: 24.64mm)
	4 - Length Neck 8.00 (Target: 8mm)
	5 - Center hole to crimp 16.3 (Target: 16.3mm)
	6 - Lenght tab 7.0 (Target: 7mm)
	7 - Diameter 6.50 (Target: 6.5mm)

	8 - Radii 6.7 (Target: 6.7mm)
	9 - Lenght crimp 6.40 (Target: 6.4mm)
	10 - Center hole to tab 8.1 (One-Sided Minimum: 8.1mm)
	11 - Radius (0.5)
	12 - Tab length 24.0 (Target: 24mm)
	13 - Gusset 0.5 (Target: 0.5mm)
	14 - Center hole to tab 12.0 (Target: 12mm)
	15 - Crimp length 8.4 (Target: 8.4mm)
	16 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
	17 - Inside crimp 2.70 (Target: 2.7mm)
	18 - Radius 1.40 (Target: 1.4mm)
	19 - Coin 0.52 (Target: 0.52)
	20 - Coin 0.52 (Target: 0.52mm)
	21 - Crimp length 11.4 (Target: 11.4mm)
	22 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
	23 - Inside crimp 4.50 (Target: 4.5mm)
	24 - Radius 1.50 (Target: 1.5mm)
	Note 1 - Parts conform to the electrical connection systema design specification (SDS) ver. 20 ELO176
	Note 2 - - Grip per FORD terminal wire grip spec: ES-F6DB-14474-CA (DD) except as shown, except for carrier strips.
	Note 3 - N/A
	Note 4 - N/A
	Note 5 - 0.2mm max Radius permissible on edges and fillets shown as sharp for stamping part.
	Note 6 - Crimp values are recommendations hasrness supplier has crimp development responsability
	Note 7 - Parts supplied loose piece. Reeled version not available
Annual PPAP Layout	1 - Crimp height (12.70)
	2 - Lenght before coin 18.24 (Target: 18.24mm)
	3 - Lenght before coin 24.64 (Target: 24.64mm)
	4 - Length Neck 8.00 (Target: 8mm)
	5 - Center hole to crimp 16.3 (Target: 16.3mm)
	6 - Lenght tab 7.0 (Target: 7mm)
	7 - Diameter 6.50 (Target: 6.5mm)
	8 - Radii 6.7 (Target: 6.7mm)
	9 - Lenght crimp 6.40 (Target: 6.4mm)
	10 - Center hole to tab 8.1 (One-Sided Minimum: 8.1mm)
	11 - Radius (0.5)
	12 - Tab length 24.0 (Target: 24mm)
	13 - Gusset 0.5 (Target: 0.5mm)

30: GP-12 New Part - Safe Launch Approved Workcenters:STAMP RP SORT 1, STAMP RP SORT 2		14 - Center hole to tab 12.0 (Target: 12mm)
		15 - Crimp length 8.4 (Target: 8.4mm)
		16 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
		17 - Inside crimp 2.70 (Target: 2.7mm)
		18 - Radius 1.40 (Target: 1.4mm)
		19 - Coin 0.52 (Target: 0.52)
		20 - Coin 0.52 (Target: 0.52mm)
		21 - Crimp length 11.4 (Target: 11.4mm)
		22 - Eveness 0.30 (One-Sided Maximum: 0.3mm)
		23 - Inside crimp 4.50 (Target: 4.5mm)
		24 - Radius 1.50 (Target: 1.5mm)
		Note 1 - Parts conform to the electrical connection systema design specification (SDS) ver. 20 ELO176
		Note 2 - - Grip per FORD terminal wire grip spec: ES-F6DB-14474-CA (DD) except as shown, except for carrier strips.
		Note 3 - N/A
		Note 4 - N/A
		Note 5 - 0.2mm max Radius permissible on edges and fillets shown as sharp for stamping part.
		Note 6 - Crimp values are recommendations hasness supplier has crimp development responsibility
		Note 7 - Parts supplied loose piece. Reeled version not available
	Production Workcenter Audit	Audit #1 - Verify Red Bin is at workcenter and used accordingly
		Audit #2 - Raw Material and/or Component Serial Numbers used correct in Control Panel
		Audit #3 - Product Packaging
		Audit #4 - Parts at workcenter are Labeled as made
		Audit #5 - Lubrication specified on shop order
		Audit #6 - Part Picture in Plex
		Audit #7 - Scrap Label
		Audit #8 - Inspection Frequency

Royal Power Solutions Powering Great Connections	Failure Mode And Effects Analysis										Process FMEA							
Part Name:	Estampado General		Internal Part Number:		Estampado / Stamping			External Part Number:										
FMEA Date:	30/06/2020		Rev Date:		20/02/2023			Prepared By:			Jesus Guillen							
Note:			Process Responsibility:		Jesus Guillen			FMEA Number:										
Core Team:	Jesus Guillen, Carlos Caballero, Luis Pozos, Fernando Velez, Ramon Aguilera, Joaquin Cerda.							Model Year(S) Vehicle(S):			Automotriz				RESULTADO			
Process Function/ Requirements	Potential Failure Mode	Potential Effects of Failure	SEV	CLS	Potential Causes/ Mechanisms of Failure	Current Process Controls Prevention	OCC	Current Process Controls Detection	DET	RPN	Acciones recomendadas	Responsabilidad y Fecha de Terminación	Acciones Tomadas y Fecha Efectiva	SEV	OCC	DET	RPN	
Recibo <i>Receiving</i>	Material fuera de especificación <i>Material out of Specification</i>	Pieza fuera de especificación <i>Piece out of specification</i>	5		Error de proveedor <i>Supplier Issue</i>	Orden de compra especifica los requerimientos. <i>PO requirements</i>	2	Certificado (Plex) <i>Certificate</i>	7	70								
Preparación de material <i>Material Procurement</i>	Material incorrecto <i>Wrong Material</i>	Falta de material <i>Missing Material</i>	3		Etiqueta incorrecta <i>Wrong Label</i>	Orden de compra especifica los requerimientos. <i>PO requirements</i>	2	Certificado (Plex) <i>Certificate</i>	7	42								
			5		Error de proveedor <i>Supplier Issue</i>		2		7	70								
	Material mezclado <i>Mixed Material</i>	Pieza fuera de especificación <i>Piece out of specification</i>	5		Mezcla de componentes durante separación en cajas mas pequeñas <i>Components mixed at spliting inventory</i>	Instrucción de fraccionar inventario <i>Split Inventory Instruction</i>	2	Checksheets: Setup, Liberación 1ra Pieza, Insp. En Proceso (Plex). <i>Checksheets: Setup, First piece release, Process, Last piece (Plex)</i>	7	70								
	Material no identificado <i>Material no labeled</i>	Falta de material <i>Missing Material</i>	3		Colocación de etiqueta. <i>Label placement.</i>	Orden de compra especifica los requerimientos. <i>PO requirements</i>	2	Certificado (Plex) <i>Certificate</i>	7	42								
Transportar herramental al centro de trabajo <i>Transport Tooling to Work Center</i>			3		Herramental no identificado <i>Unidentified tooling.</i>		1		7	21								
	Herramental equivocado <i>Wrong tooling</i>	Atraso en la producción. <i>Delayed production</i>	3		Herramental con identificación borrosa <i>Fuzzy tooling ID.</i>	Correlación de pieza y ID de herramental en Plex (Series) <i>ID tooling and piece match. (Series)</i>	1	Checksheets: Setup, Liberación 1ra Pieza, Insp. En Proceso (Plex). <i>Checksheets: Setup, First piece release, Process, Last piece (Plex)</i>	7	21								
	Herramental Dañado <i>Tooling Damaged</i>	Defecto visual no aceptable <i>Visual Defects.</i>	5		Daño en traslado / Manejo de material <i>Transport damaged / Material handling</i>	Matenimiento planeado de herramental <i>Tooling Planned Maintenance</i>	1		7	35								
Transportar material a centro de trabajo <i>Transport Material to Work Center</i>	Material equivocado <i>Wrong material</i>	Atraso en la producción / Falta de material <i>Delayed production / Missing material.</i>	3		Etiqueta incorrecta <i>Wrong Label</i>	Correlación de pieza y ID de herramental en Plex (Series) <i>ID tooling and piece match. (Series)</i>	2	Checksheets: Setup, Liberación 1ra Pieza, Insp. En Proceso (Plex). <i>Checksheets: Setup, First piece release, Process, Last piece (Plex)</i>	3	18								
Setup <i>Setup</i>	Centro de trabajo no está disponible <i>Workcenter unavailable</i>	Atraso en la producción <i>Delayed production</i>	3		Programación de producción <i>Production planning</i>	Control en Plex - Job Schedule <i>Control en Plex - Job Schedule</i>	3	Setup Checklist (Plex) <i>Setup Checklist (Plex)</i>	7	63								
Estampado - (1ra pieza, inspección de proceso e inspección de pieza final) Stamping)	Ancho de Abrazaderas fuera de especificación <i>Wire/Insulation Crimp out of specification.</i>	Pieza fuera de especificación <i>Part oout of spec</i>	5		Montaje de troquel en prensa, con parámetros fuera de especificación. <i>Die in press out of proces parameters.</i>		2		7	70	Homologacion de cambios de troquel (Metodo).	Luis Pozos / Fernando Velez. 02 Sep 2022	Se crean estandares de trabajo para cambios de molde en area productiva. 08 Sep 2022	5	1	7	35	
	Wire crimp out of spec																	
	Cota 41 - Orificios de eyelet fuera de especificación <i>Holes out of specification (Only Eyelets).</i>	Pieza fuera de especificación - La tuerca se desprende <i>Part out of spec - Nut is not retained.</i>	5	⚠	Diámetro de punzón fuera de especificación <i>Punch out of dimension.</i>		3		7	105								
	Pestaña de orificio fuera de especificación (eyelet) <i>Hole filet out of spec.</i>	Pieza fuera de especificación - La tuerca se desprende <i>Part out of spec - Nut is not retained.</i>	5		Ajuste de tonelaje fuera de especificación <i>Tonnage in press out of spec.</i>		2		7	70								
	Serraciones no visibles <i>Serrations non visibles.</i>	No se genera superficie rugosa suficiente. <i>Part out of spec, no cable retained.</i>	5		Ajuste de prensa fuera de especificación <i>Set-up out of spec.</i>		2		7	70								
	Sin fechador o con fechador incorrecto <i>Date code wrong/missing.</i>	Pérdida de trazabilidad <i>Loss of traceability.</i>	3		El Change Over no se realizó correctamente. <i>Wrong Change over.</i>	Seteo de centro de trabajo. Instrucción de montaje de rollo <i>Instrucción de centro de trabajo</i>	3		7	63	Homologacion de cambios de troquel (Metodo).	Luis Pozos / Fernando Velez. 02 Sep 2022	Se crean estandares de trabajo para cambios de molde en area productiva. 08 Sep 2022	3	1	7	21	
			3		Segregación incorrecta de piezas en arranque. <i>Incorrect segregation of parts at startup.</i>		2		7	42								
			3		El Change Over no se realizó correctamente. <i>Wrong Change over.</i>		3	Checksheets: Setup, Liberación 1ra Pieza, Insp. En Proceso (Plex).	7	63	Homologacion de cambios de troquel (Metodo).	Luis Pozos / Fernando Velez. 02 Sep 2022	Se crean estandares de trabajo para cambios de molde en area productiva. 08 Sep 2022	3	1	7	21	
	Cota 83 - Angulos fuera de especificación <i>Angles out of spec.</i>	Pieza no funcional. <i>Part out of spec - non functional</i>	5	⚠	Mal ajuste de prensa y Die. <i>Wrong press/die set up.</i>	- Work center set-up. - Roll mounting instruction - Work center job instruction.	3		7	105								
	Grietas <i>Cracks.</i>	Defecto visual no aceptable. <i>Visual defecto no acceptable.</i>	5		Falta de lubricación <i>Lack of lubration.</i>		3		7	105								
	Rebabas <i>Burs.</i>				Desgaste de filos en los componentes. <i>Components worn out.</i>		2		7	70								
	Superficie manchada <i>Stains.</i>				Defecto de material <i>Material stained.</i>		3		7	105								
	Zona de crimpado con escamas. <i>Flakes.</i>				Falta de lubricación <i>Lack of lubration.</i>		3		7	105								
	Pieza con golpes excesivos <i>Marks</i>				Scrap se queda dentro del Dado <i>Scrap inside die.</i>		2		7	70								
	Rasguños que presentan cobre expuesto <i>Scratches - Copper Exposed.</i>				Limpieza de equipo o material dañado desde recepción. <i>Dirt equipment or material damaged during transport.</i>		2		7	70								
	Fracturas <i>Fractures.</i>			5		El material se encuentra en el rango máximo de dureza. <i>Material hardness in maximum tolerance.</i>		2	Certificado de Material (Plex) <i>Material Cert.</i>	7	70							
Enviar piezas al proveedor de recubrimiento <i>Send part to plating</i>	Envío de piezas equivocadas al proveedor <i>Ship wrong parts to plater</i>	Piezas sin recubrimiento/ Omisión del proceso <i>Missing plating</i>	4		Mal identificación del material <i>Wrong material identification</i>	Lay-out definido para envío de piezas a proveedor <i>Lay out defined by supplier</i>	3	Verificación Visual de identificación <i>ID visual identification</i>	7	84								
			3		Mal identificación del material	Lay-out definido para envío de piezas a proveedor	3	Verificación Visual de identificación	7	63								
	Envío de piezas a proveedor incorrecto <i>Ship parts to wrong supplier</i>	Atraso en la producción. <i>Production delay</i>	3		Información incorrecta del embarque. <i>Wrong shipping information</i>	Generación de información del envío de manera automatica por sistema Plex <i>Shipping information via PLEX</i>	3	Modulo de embarques compara la información del embarque con la OC del proveedor. <i>Shipments module compares the information of the shipment with the supplier PO</i>	3	27								
Recubrimiento de piezas <i>Plate parts</i>	Piezas sin o mal Recubrimiento <i>Wrong plating / Missing plating</i>	Pieza fuera de especificación <i>Parts out of specification</i>	5		Mal procesado por proveedor <i>Wrong process from supplier</i>	Certificados de recubrimiento por lotes enviados <i>Material certificate for each bach</i>	2	Inspección recibo, Revisión del Certificado de calidad <i>Incoming inspection/ Quality certificate</i>	7	70								
Recibo de Material <i>Incoming</i>	Piezas Defectuosas <i>Defective parts</i>	Pieza fuera de especificación <i>Parts out of specification</i>	5		Mal procesado por proveedor <i>Wrong process from supplier</i>	Manual de Calidad proveedores y envío de certificados de recubrimiento <i>Supplier quality manual/ plating certificate</i>	2	Inspección recibo <i>Incoming inspection</i>	7	70								
Auditoría final <i>Final Audit</i>	Empaque roto <i>Damaged packaging</i>	Empaque fuera de especificación <i>Packaging out of spec.</i>	3		Manejo de material <i>Material handling</i>	Instrucción de Empaque <i>Packaging instruction</i>	2	Checksheet: Auditoria final <i>Checksheet: Final Audit</i>	7	42								
	Etiqueta incorrecta <i>Wrong label</i>				Selección de material <i>Material Selection</i>													
		Empaque incorrecto <i>Wring Packaging</i>			Bascula no calibrada / Uso incorrecto de bascula <i>Scale not calibrated / Incorrect use of scale</i>	Instrucción de Empaque Programa de calibración de equipos <i>Packaging instruction / Calibration planning.</i>	2	Checksheet: Auditoria final Monitoreo de calibración de equipos. <i>Checksheet: Final Audit / Calibration monitoring.</i>	7	98	Desarrollar un sistema de aviso automatico de vencimiento de calibración a través del sistema Plex. <i>Emailing alert calibration out of date.</i>	Jesus Guillen 05 / Sep / 2022	Se cuenta con un sistema automatico de aviso en PLEX para equipos que estan por salir de periodo de calibracion. 06/Sep/2022	7	2	6	84	
Transportar a la ubicación final <i>Transport to Final Location</i>	Daño en empaque <i>Damaged packaging</i>	Empaque fuera de especificación <i>Packaging out of spec.</i>	3		Manejo de material <i>Material handling</i>	Entrenamiento a montacarguistas. <i>Forklift operator training.</i>	2	Checklist de almacenes (conservación de material) <i>Warehouse checklists.</i>	7	42								

Control Plan

Control Plan Number 9567	Control Plan Type Pre-Launch	Part Number/Latest Change Level R9467-L-A1	Date (Orig.)	Date (Rev.)
Key Contact/Phone		Core Team	Customer Engineering Approval Date (If Req'd)	
Part Name/Description R9467-L-A1 (Eyelet Terminal TYP - Loose Parts)		Organization/Plant Approval Date (If Req'd)	Customer Quality Approval Date (If Req'd)	
Organization/Plant RP TECH DE MEXICO S DE RL DE CV (812887504)		Organization Code	Other Approval date (If Req'd)	

Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method		
20	Stamp - Finish Receiving	-	A	C197			Attribute	Visual	1 each Set Up/ 1 cada Set Up	Material Certification	Notify Materials & Quality, follow procedure COP8 Notificar a Calidad y Materiales, seguir procedimiento COP8.	
				Preparación de material								
20	Stamp - Finish Transport Tooling to Work Center	-	B		Transport Tooling to Work Center		Attribute	Visual	1 each Set Up/ 1 cada Set Up	Tool ID	Perform adjustments and/or corrections/Ajustar y corregir.	
				Traslade herramental al centro de trabajo								
20	Stamp - Finish Transport Material to Work Center	-	C		Transport Material to Work Center		Attribute	Visual	1 each Set Up/ 1 cada Set Up	MSO Requirements	Perform adjustments and/or corrections/Ajustar y corregir.	
				Traslade material al centro de trabajo								
20	Stamp - Finish Setup	-	D		Set-up Work Center		Attribute	Visual	1 each Set Up/ 1 cada Set Up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
				Configure el centro de trabajo								
		-	D-A		Verify Correct Raw Material at Machine		Attribute	Visual	1 each Set Up/ 1 cada Set Up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
				Verifique que la materia prima sea la correcta en la maquina								
		-	D-B		Verify Correct Tooling 01685		Attribute	Visual	1 each Set Up/ 1 cada Set Up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
				Verifique el correcto herramental 01685								
		-	D-C		Verify Correct Machine Operating Parameters		Attribute	Visual	1 each Set Up/ 1 cada Set Up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
Verifique que la máquina tenga los parametros correctos												
		-	D-C1		Feed Advance		290° ± 10°	SET UP 01685	Each Setup / Cada Set-up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	

Control Plan Number 9567		Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1		Date (Orig.)		Date (Rev.)			
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods			Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.		Control Method
				piezas a granel							
		-	Visual Defect 1	No Fractures on part			Pay close attention at transition from terminal body to crimps & between crimps.	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Sin fracturas. Preste mucha atención en la transición del cuerpo del terminal a los crimps y entre los crimps.							
		-	Visual Defect 2	No Slug Marks			Must be free of Slug marks	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Sin marcas.							
		-	Visual Defect 3	No Burrs			Part Must be free of Burrs	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Sin rebabas.							
		-	Visual Defect 4	No Slivers			Parts Must be free of slivers	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Si astillas.							
		-	Visual Defect 5	No expose Raw material			Attribute	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Sin material expuesto.							
		-	Visual Defect 6	No excessive Tool Marks			Attribute	Visual	5 each Setup/5 cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Sin marcas excesivas de herramental.							
		-	6	Lenght tab 7.0			6.50 / 7.50 mm	Calipers	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	7	Diameter 6.50			6.20 / 6.80 mm	Pin Gage 0.267 in / 0.244 in	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
-	8	Radii 6.7			6.20 / 7.20 mm	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.		
-	10	Center hole to tab 8.1			8.10 mm Min	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.		
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Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods			Reaction Plan		
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.		Control Method	
		-	12	Tab length 24.0			23.5 / 24.5 mm	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
				Medir con intersección								
		-	13	Gusset 0,5			0,0 / 1.0 mm	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	14	Center hole to tab 12.0			11,5 / 12.5 mm	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	15	Crimp length 8.4			7,9 / 8,9 mm	Calipers	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
				Apertura de crimps 8,4								
		-	16	Eveness 0,30			0,30 mm Max	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	19	Coin 0,52			0,22 / 0,82	Optical Projector	3 each set up [6x]/3 cada Setup [6x].	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	20	Coin 0,52			0,22 / 0,82 mm	Optical Projector	3 each set up [6x]/3 cada Setup [6x].	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	21	Crimp length 11,4			10,9 / 11,9 mm	Calipers	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		Apertura de crimps 11,4										
-	22	Eveness 0,30			0,30 mm Max	Optical Projector	3 each Set Up / 3 piezas cada Setup.	Checksheet	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.			
20	Stamp - Finish Operator - In-process Inspection	-	Visual 1	4 Serrations must be present at correct location - See Print			Attribute	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Las 4 Serraciones deben estar presentes en la ubicación correcta - Ver impresión								
		-	Visual 2	Coin on wire and insulation crimps must be visually present			Attribute	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
Plex 12/18/23 11:18 AM												

Control Plan Number 9567		Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1		Date (Orig.)		Date (Rev.)			
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods			Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.		Control Method
				chaflan sobre crimps y pliegues de aislamiento deben estar presentes visualmente							
		-	Visual 3	Part loose			Attribute	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				piezas a granel							
		-	Visual Defect 1	No Fractures on part			Pay close attention at transition from terminal body to crimps & between crimps.	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin fracturas. Preste mucha atención en la transición del cuerpo del terminal a los crimps y entre los crimps.							
		-	Visual Defect 2	No Slug Marks			Must be free of Slug marks	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin marcas.							
		-	Visual Defect 3	No Burrs			Part Must be free of Burrs	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin rebabas.							
		-	Visual Defect 4	No Slivers			Parts Must be free of slivers	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Si astillas.							
		-	Visual Defect 5	No expose Raw material			Attribute	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin material expuesto.							
		-	Visual Defect 6	No excessive Tool Marks			Attribute	Visual	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin marcas excesivas de herramienta.							
		-	7 Op	Diameter 6,50			Pin Gage 0,244 in // 0,267 in	Go/No-Go Gage 0,244 in / 0,267 in	5 Pcs once per shift /5 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Diametro 6,50							
		-	15	Crimp length 8,4			7,9 / 8,9 mm	Calipers	3 pcs once per shift/3 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Apertura de crimps 8,4							
		Plex 12/18/23 11:18 AM									

Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1		Date (Orig.)		Date (Rev.)			
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method		
		-	21	Crimp length 11.4			10.9 / 11.9 mm	Calipers	3 pcs once per shift/3 piezas 1 vez por turno	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Apertura de crimps 11.4								
20	Stamp - Finish Process Verification	-	D-C7	Strokes Per Minute (SPM)			85 / 95	SET UP 01685	1 Per Shift / 1 por turno	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
				Golpes por minuto								
		-	D-C8		Blower Angle ON		CONTINUO	SET UP 01685	1 Per Shift / 1 por turno	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
				Ángulo de sopleteo encendido								
		-	D-C9		Tipo de Lubricante		E610 al 100%	SET UP 01685	1 Per Shift / 1 por turno	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
		-	D-C10		Tonelaje de Cierre		70 / 90	SET UP 01685	1 each Set Up/ 1 cada Set Up	Checksheet	Perform adjustments and/or corrections/Ajustar y corregir.	
20	Stamp - Finish Quality - In- process Inspection	-	Visual 1	4 Serrations must be present at correct location - See Print			Attribute	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Las 4 Serraciones deben estar presentes en la ubicación correcta - Ver impresión								
		-	Visual 2	Coin on wire and insulation crimps must be visually present			Attribute	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				chafan sobre crimps y pliegues de aislamiento deben estar presentes visualmente								
		-	Visual 3	Part loose			Attribute	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				piezas a granel								
		-	Visual Defect 1	No Fractures on part			Pay close attention at transition from terminal body to crimps & between crimps.	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Sin fracturas. Preste mucha atención en la transición del cuerpo del terminal a los crimps y entre los crimps.								
		-	Visual Defect 2	No Slug Marks			Must be free of Slug marks	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Sin marcas.								
		-	Visual Defect 3	No Burrs			Part Must be free of Burrs	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).	
				Sin rebabas.								
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Control Plan Number 9567		Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
		-	Visual Defect 4	No Slivers			Parts Must be free of slivers	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Si astillas.							
		-	Visual Defect 5	No expose Raw material			Attribute	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin material expuesto.							
		-	Visual Defect 6	No excessive Tool Marks			Attribute	Visual	5 pcs every 2 Hours/5 piezas cada 2 horas.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Sin marcas excesivas de herramental.							
		-	6	Lenght tab 7.0			6.50 / 7.50 mm	Calipers	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	7	Diameter 6.50			6.20 / 6.80 mm	Pin Gage 0.267 in 0.244 in	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	10	Center hole to tab 8.1			8.10 mm Min	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	12	Tab length 24.0			23.5 / 24.5 mm	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Medir intersección							
		-	13	Gusset 0,5			0.0 / 1.0 mm	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	14	Center hole to tab 12.0			11.5 / 12.5 mm	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	15	Crimp length 8.4			7.9 / 8.9 mm	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
				Apertura de crimps 8.4							
		-	16	Eveness 0.30			0.30 mm Max	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material

Control Plan Number 9567			Control Plan Type Pre-Launch			Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan		
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method			
											sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
		-	21	Crimp length 11.4			10.9 / 11.9 mm	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				Apertura de crimps 11,4									
		-	22	Eveness 0,30			0,30 mm Max	Optical Projector	3 pcs every 2 hours/3 pcs cada 2 horas	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
20	Stamp - Finish Quality Last Piece	-	Visual 1	4 Serrations must be present at correct location - See Print			Attribute	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				Las 4 Serraciones deben estar presentes en la ubicación correcta - Ver impresión									
		-	Visual 2	Coin on wire and insulation crimps must be visually present			Attribute	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				chafan sobre crimps y pliegues de aislamiento deben estar presentes visualmente									
		-	Visual 3	Part loose			Attribute	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				piezas a granel									
		-	Visual Defect 1	No Fractures on part			Pay close attention at transition from terminal body to crimps & between crimps.	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				Sin fracturas. Preste mucha atención en la transición del cuerpo del terminal a los crimps y entre los crimps.									
		-	Visual Defect 2	No Slug Marks			Must be free of Slug marks	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
				Sin marcas.									
-	Visual Defect 3	No Burrs			Part Must be free of Burrs	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).				
		Sin rebabas.											
-	Visual Defect 4	No Slivers			Parts Must be free of slivers	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).				
		Si astillas.											
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Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)	
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
		-	Visual Defect 5	No expose Raw material			Attribute	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		Sin material expuesto.									
		-	Visual Defect 6	No excessive Tool Marks			Attribute	Visual	5 Pcs upon job ends/5 pcs al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		Sin marcas excesivas de herramental.									
		-	6	Lenght tab 7.0			6.50 / 7.50 mm	Calipers	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	7	Diameter 6.50			6.20 / 6.80 mm	Pin Gage 0.267 in / 0.244 in	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	10	Center hole to tab 8.1			8.10 mm Min	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	12	Tab length 24.0			23.5 / 24.5 mm	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		Medir con interseccion									
		-	13	Gusset 0.5			0.0 / 1.0 mm	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	14	Center hole to tab 12.0			11.5 / 12.5 mm	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	15	Crimp length 8.4			7.9 / 8.9 mm	Calipers	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		Apertura de crimps 8.4									
-	16	Eveness 0.30			0.30 mm Max	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
-	19	Coin 0.52			0.22 / 0.82	Optical Projector	3 pcs upon Job Completion (6)	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).		
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Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1		Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
		-	20	Coin 0.52			0.22 / 0.82 mm	Optical Projector	3 pcs upon Job Completion (6)	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	21	Crimp length 11.4			10.9 / 11.9 mm	Calipers	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	22	Eveness 0.30			0.30 mm Max	Optical Projector	3 once Job Completion/3 piezas al terminar corrida	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
20	Stamp - Finish Final Audit	-	H		Labels correct & cartons sealed properly		Attribute	Visual	Each pallet/cada tarima.	Checksheet	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
Etiquetas bien colocadas y cajas propiamente selladas											
20	Stamp - Finish Transport to Final Location	-	I	Transport to Final Location			Move to Warehouse for customer shipping			Component Verification	
Traslade a la locación final											
20	Stamp - Finish PPAP Layout	-	1	Crimp height (12.70)			Attribute	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	2	Lenght before coin 18.24			17.94 / 18.54 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	3	Lenght before coin 24.64			24.34 / 24.94 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	4	Length Neck 8.00			7.70 / 8.30 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	5	Center hole to crimp 16.3			15.80 / 16.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	6	Lenght tab 7.0			6.50 / 7.50 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.

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Control Plan Number 9567			Control Plan Type Pre-Launch			Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)	
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method		
		-	7	Diameter 6.50			6.20 / 6.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	8	Radii 6.7			6.20 / 7.20 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	9	Lenght crimp 6.40			6.10 / 6.70 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	10	Center hole to tab 8.1			8.10 mm Min	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	11	Radius (0.5)			Attribute	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	12	Tab length 24.0			23.5 / 24.5 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	13	Gusset 0.5			0.0 / 1.0 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	14	Center hole to tab 12.0			11.5 / 12.5 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	15	Crimp length 8.4			7.9 / 8.9 mm	Calipers	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		Apertura de crimps 8.4										
		-	16	Eveness 0.30			0.30 mm Max	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	17	Inside crimp 2.70			2.40 / 3.00 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
-	18	Radius 1.40			1.10 / 1.70 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.			
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Control Plan Number 9567			Control Plan Type Pre-Launch			Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)	
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method		
		-	19	Coin 0.52			0.22 / 0.82	Optical Projector	3 Per Dimensional (2)/ 3 por dimensional (2).	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	20	Coin 0.52			0.22 / 0.82 mm	Optical Projector	3 Per Dimensional (2)/ 3 por dimensional (2).	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	21	Crimp length 11.4			10.9 / 11.9 mm	Calipers	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		Apertura de crimps 11.4										
		-	22	Eveness 0.30			0.30 mm Max	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	23	Inside crimp 4.50			4.20 / 4.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	24	Radius 1.50			1.20 / 1.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	Note 1	Parts conform to the electrical connection systema design specifiatiion (SDS) ver. 20 ELO176			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	Note 2	- Grip per FORD terminal wire grip spec: ES-F6DB- 14474-CA (DD) except as shown, except for carrier strips.			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		- Parts comply with ES-D8AB-1293-A - For use with braid wire per RSF-M2I3-a 30GA (5 groups of 24 strands each, 12,000 circular mills total)										
		-	Note 3	N/A			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	Note 4	N/A			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	Note 5	0.2mm max Radius permissible on edges and fillets shown as sharp for stamping part.			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.	
		-	Note 6	Crimp values are recommendations hasrness			Attribute	Visual	1 Per Dimensional/1	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no	
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Control Plan Number 9567		Control Plan Type Pre-Launch			Part Number/Latest Change Level R9467-L-A1		Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
				supplier has crimp development responsibility					por dimensional.		conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 7	Parts supplied loose piece. Reeled version not available			Attribute	Visual	1 Per Dimensional/ 1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
20	Stamp - Finish Annual PPAP Layout	-	1	Crimp height (12.70)			Attribute	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	2	Lenght before coin 18.24			17.94 / 18.54 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	3	Lenght before coin 24.64			24.34 / 24.94 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	4	Length Neck 8.00			7.70 / 8.30 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	5	Center hole to crimp 16.3			15.80 / 16.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	6	Lenght tab 7.0			6.50 / 7.50 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	7	Diameter 6.50			6.20 / 6.80 mm	Pin Gage 0.267 in / 0.244 in	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	8	Radii 6.7			6.20 / 7.20 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	9	Lenght crimp 6.40			6.10 / 6.70 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	10	Center hole to tab 8.1			8.10 mm Min	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
-	11	Radius (0.5)			Attribute	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.		
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Control Plan Number 9567		Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
		-	12	Tab length 24.0			23.5 / 24.5 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	13	Gusset 0.5			0.0 / 1.0 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	14	Center hole to tab 12.0			11.5 / 12.5 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	15	Crimp length 8.4			7.9 / 8.9 mm	Calipers	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Apertura de crimps 8.4							
		-	16	Eveness 0.30			0.30 mm Max	Optical Projector	3 Per Dimensional (2)/ 3 por dimensional (2).	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	17	Inside crimp 2.70			2.40 / 3.00 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	18	Radius 1.40			1.10 / 1.70 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	19	Coin 0.52			0.22 / 0.82	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	20	Coin 0.52			0.22 / 0.82 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	21	Crimp length 11.4			10.9 / 11.9 mm	Calipers	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				Apertura de crimps 11.4							
		-	22	Eveness 0.30			0.30 mm Max	Optical Projector	3 Per Dimensional (2)/ 3 por dimensional (2).	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	23	Inside crimp 4.50			4.20 / 4.80 mm	Optical Projector	3 Per Dimensional/ 3	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no

Control Plan Number 9567		Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)		
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods				Reaction Plan
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.	Control Method	
									piezas por dimensional.		conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	24	Radius 1.50			1.20 / 1.80 mm	Optical Projector	3 Per Dimensional/ 3 piezas por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 1	Parts conform to the electrical connection systema design especificatiion (SDS) ver. 20 ELO176			Attribute	Optical Projector	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 2	- Grip per FORD terminal wire grip spec: ES-F6DB-14474-CA (DD) except as shown, except for carrier strips.			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
				- Parts comply with ES-D8AB-1293-A - For use with braid wire per RSF-M2I3-a 30GA (5 groups of 24 strands each. 12,000 circular mills total)							
		-	Note 3	N/A			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Suspect Material -Refer NC procedure (RP tech) Material sospechoso / Seguir procedimiento de producto no conforme (RPTech).
		-	Note 4	N/A			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 5	0.2mm max Radius permissible on edges and fillets shown as sharp for stamping part.			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 6	Crimp values are recommendations hasrness supplier has crimp development responsability			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
		-	Note 7	Parts supplied loose piece, Reeled version not available			Attribute	Visual	1 Per Dimensional/1 por dimensional.	PPAP Layout	Nonconforming samples, Reject sample & notify setup/ Partes no conformes, rechazar las piezas y notificar a técnico de ajuste.
20	Stamp - Finish Production Workcenter Audit	-	Audit #1	Verify Red Bin is at workcenter and used accordingly			Verify Red Bin is at workcenter and used accordingly	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor
				Verifique que el Bin rojo se está usando apropiadamente en el centro del trabajo.							
		-	Audit #2	Serial Numbers of Raw Material and/or Components used must match serial numbers loaded in Control Panel			Serial Numbers of Raw Material and/or Components used must match serial numbers loaded in Control Panel	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor
				Los seriales de la materia prima y componentes se deben de utilizar adecuadamente							
		-	Audit #3	Parts must be packaged per the job sheet requirements			Parts are packaged per the shop order requirements	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor

Control Plan Number 9567			Control Plan Type Pre-Launch		Part Number/Latest Change Level R9467-L-A1			Date (Orig.)		Date (Rev.)	
Part/ Process Number	Operation	Machine / Device	Characteristics			Special Char. Class	Methods			Reaction Plan	
			No.	Product	Process		Product / Process Specification Tolerance	Evaluation Measurement Technique	Sample Size / Freq.		Control Method
				Empaque - Las piezas deben de ser empacadas de acuerdo a la orden de trabajo.							
		-	Audit #4	Parts at workcenter are Labeled as made		Part must be labeled once container is complete	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor	
				Las etiquetas se deben de hacer en el centro de trabajo donde se fabricaron							
		-	Audit #5	Lubrication must be specified on shop order		Lubrication must be specified on shop order	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor	
				La lubricación debe de ser de acuerdo a la orden de trabajo.							
		-	Audit #6	Part Picture must be in Plex		Part Picture must be in Plex	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor	
				La foto de la pieza debe de estar en plex.							
		-	Audit #7	Scrap Label		Scrap Label Must be present where applicable	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor	
				La etiqueta de scrap debe de estar presente - cuando aplique							
		-	Audit #8	Inspection Frequency		Parts inspected per control Plan	Visual	As Required / Según sea necesario	Verification	Notify Supervisor/Notificar al Supervisor	
		La frecuencia de inspección debe de ser conforme a plan de control									
Plex 12/18/23 11:18 AM											



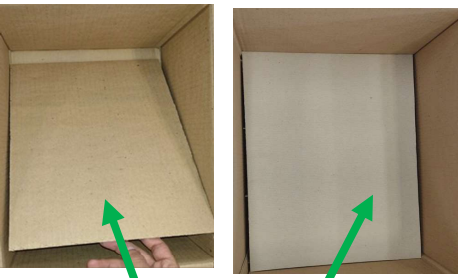
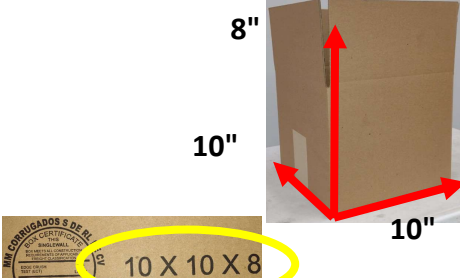
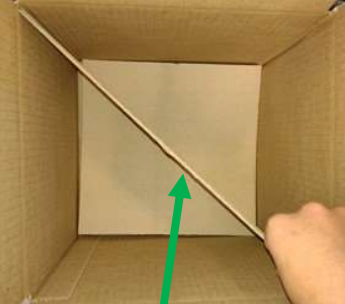
Estándar de Empaque

Peso una Pieza: 5.86 gr
Peso Caja (Juego): 0.325 KG.
Peso Total: 6.183 KG.

No parte: R9467-L

Descrip: Eyelet Terminal TYP

Area: Stamping

PIEZA	CUBIERTA	TAMAÑO DE CAJA	PIEZAS POR CAMA
			
R9467-L	COLOCAR SEPARADOR AL FONDO DE LA CAJA (9-7/8" x 9-7/8") RPT-SE-002	RPT-CA-005 (10" x 10" x 8")	COLOCAR 1000 PZAS A GRANEL
DIAGONAL	PIEZAS POR CAJA	CAJAS POR PALLET	ETIQUETA
			
COLOCAR DIAGONAL (14" X 8") RPT-DI-002	1000 PIEZAS	Tarima de 32"x 32" (Máximo de cajas por tarima: 3 cajas de ancho x 3 cajas de largo x 3 cajas de alto)	LA ETIQUETA BLANCA CON GP12 DEBE IR EN LA ESQUINA SUPERIOR IZQUIERDA, COLOCAR LA ETIQUETA MASTER EN LA PARTE SUPERIOR DE LA CAJA AL CENTRO DE LA TARIMA

Observaciones:

Se debe identificar cada caja con su etiqueta PLEX y etiqueta de certificación de GP12.

Generar Master Label (etiqueta master) por tarima.

Modo de empaque con cubierta al fondo y diagonal a granel.

MATERIAL A OCUPAR POR CAJA

- 1 CAJA RPT-CA-005
- 1 PZA SEPARADOR RPT-SE-002
- 1 PZA DIAGONAL RPT-DI-002

Realizo: CGOMEZ

INGENIERIA DE MANUFACTURA

REV.1- SE ACTUALIZA

24/01/2022

 	HOJA DE SET-UP ESTAMPADO		FO-P-0006 Rev.3 09/09/2022
			Elaboró: Araceli Ortiz
			Aprobó: Luis Pozos

NUM. DE PARTE (Part Number)	R9467-LA1
OPERACIÓN (Operation)	Estamp Wip
PRENSA (Press)	M-018
TROQUEL (Die)	1685
MATERIAL (Raw Material)	040X2.5004224MTP
PRODUCTO (Product)	Eyelet Terminal TYP - Loose Parts



PARÁMETROS DE MÁQUINA Y ACCESORIOS

SET-UP

		Unidades
ALTURA DE SHUT HEIGHT (Shut height)	10.372±10	In
PROGRESION DE MATERIAL (Progression)	1.3±10	In
PRESION DE RODILLOS ALIMENTADOR	40±5	PSI
TONELAJE DE CIERRE (Tonnage)	80±10	Ton
VELOCIDAD DE PRENSA (Speed)	90 ± 5	SPM
TIPO DE LUBRICANTE (Type of Lubricant)	E-610 al 100%	
PRESION DEL LUBRICANTE	0.42	Mpa
PRESION DE DESENROLLADOR	0	PSI

	ON	OFF	Unidades
FEED ADVANCE ANGLE	290±10°	55±10°	Grados
PILOT RELEASE ANGLE	120±10°	185±10°	Grados
SLUG DETECCION SENSOR	N/A		Grados
SHORT FEED SENSOR	320±10°	50±10°	Grados
END OF STOCK SENSOR	Conexión al feeder NO		
BLOWER ANGLE	Continuo		Grados
LUBE	0.09		ms
LUBRICACION POR GOLPES	15 Golpes por lubricacion		

Sensores	Sensor 1	Sensor 2	Sensor 3	Sensor 4	Sensor 5	Sensor 6	Sensor 7	Sensor 8
activados	E-Stop	N/U	N/U	N/U	N/U	N/U	N/U	N/U

Sensores	Sensor 9	Sensor 10	Sensor 11	Sensor 12	Sensor 13	Sensor 14	Sensor 15	Sensor 16
activados	N/U	N/U	N/U	N/U	N/U	N/U	N/U	N/U

TODOS LOS SENSORES "SHORT FEED, SLUG SENSOR " DEBE ESTAR EN MODO "PARO DE EMERGENCIA" Y EN TIPO "VERDE CONSTANTE"

Caja de sensores dañada,
 Verificar antes de volver a montar

SUJECION Y LUBRICACION DEL TROQUEL

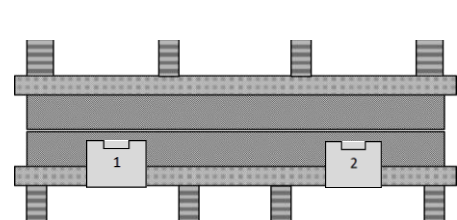
SUJECION DE TROQUEL

		1	2	3	4	5	6	7	8	9
SUJECION FRONTAL	ARRIBA									
	ABAJO									
SUJECION TRASERA	ARRIBA									
	ABAJO									

LUBRICACION DE TROQUEL

		1	2	3	4	5	6	7
LUBRICACION FRONTAL	ARRIBA							
	ABAJO							
LUBRICACION TRASERA	ARRIBA							
	ABAJO							

AJUSTE DE TOPES LIMITADORES Y SENSORES



NOTA: LOS ESTAÑOS PARA AJUSTE DE LOS TOPES DEBEN ESTAR A 0.050" CON MATERIAL

Estaño 1	0.050"
Estaño 2	0.050"

ALTURA DEL ENDEREZADOR(mm)	
Rodillo 1 Entrada	-2
Rodillo 2 Medio	1
Rodillo 3 Salida	1

CENTRADO DE TROQUEL	
Frontal	20.5
Trasero	20.5
Referencia	RAM

INSTRUCCIÓN DE INSPECCIÓN - DE GP-12

FO-C-003

NP: **R9467-L-A1**

Revisión: 0

1 Validar conservación del producto, que no cuente con defectos de apariencia y así mismo deformaciones, golpes, grietas y/o algún defecto.

2 No debe existir excesivo de cobre expuesto.

3 Revisar que la pieza no presente fisuras, en especial en la zona de crimpado

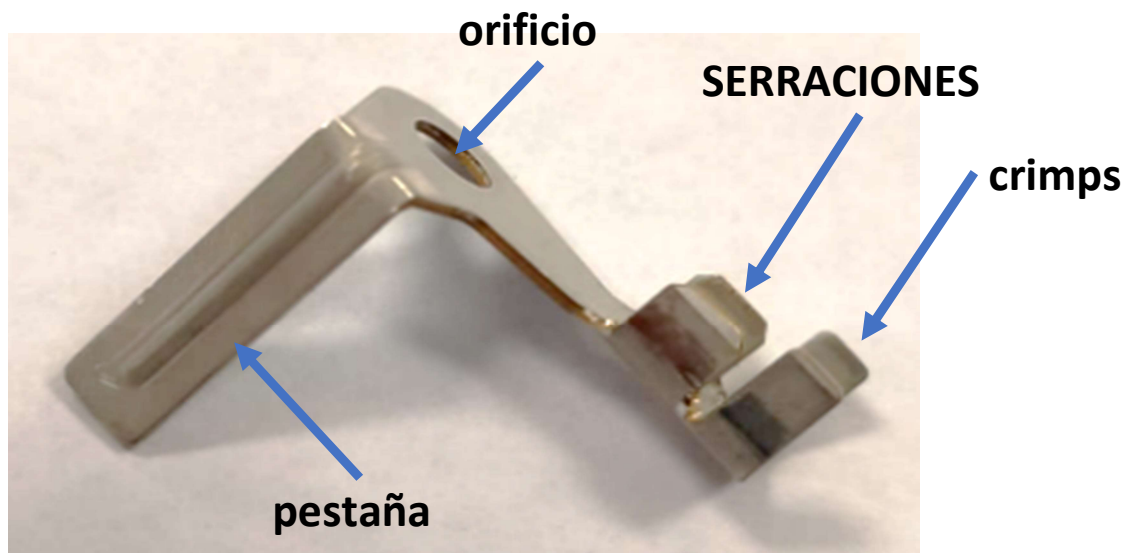
4 Verificar que estén presentes las marcas de las serraciones

5 Verificar que los crimps no presente daños o deformaciones.

6 Verifica que los orificios estén libres de rebabas u obstrucciones.

7 certificar con un punto negro la piezas como se muestra en la imagen.

8 Verificar que la norma de empaque sea correcta y coloca etiqueta de GP-12



En caso de que una o mas piezas no cumplan con los criterios de aceptación, seguir Procedimiento de Producto No Conforme PR-C-0001.

No.Revisión	Fecha	Descripción del Cambio	Realizó	Aprobó
1	9-Feb-22	Se emite documento	Valente Rivera Técnico de Calidad	Carlos Caballero Ing. De Calidad



Wieland Metal Services, LLC
180 Alexandra Way
Carol Stream, IL, 60188

CERTIFICATE OF CONFORMANCE

WMS Order Number#	384684
WMS Item#	212105
WMS Item Description	BR-CU42200-0.04-H04-Electro Tin-COIL-2.50--
Customer Name:	ROYAL POWER SOLUTIONS
Cust Part#:	040X2.5004224MTP

Cust PO#	44079-33
Quantity / UOM :	1076 / LB
Date Shipped:	15-NOV-23

Lot Number#	Heat#	Mill Coil#	Num of Pieces#	Ship Qty / UOM	Ship Date	Country of Origin#
04-1233345	174452000	E23095524Q 10101524 B713	1	1076 / LB	15-NOV-23	US

Class: Chemical	Spec Min	Spec Max	Result	UOM
Cu	86.00000	89.00000	86.85000	%
Fe	.00000	.05000	.02600	%
P	.00000	.35000	.00300	%
Pb	.00000	.05000	.00800	%
Sn	.80000	1.40000	.86000	%
Zn	.00000	14.00000	12.20000	%
Class: Dimenson	Spec Min	Spec Max	Result	UOM
Coil ID	16.00	16.00	16.00	inch
Coil OD	38.00	50.00	45.25	inch
Class: Mechanic	Spec Min	Spec Max	Result	UOM
Tensile	67.00	79.00	71.00	KSI
Class: Size	Spec Min	Spec Max	Result	UOM
Gauge	.03900	.04100	.04000	inch
Width	2.4970	2.5030	2.5000	inch
Class: Shape	Spec Min	Spec Max	Result	UOM
Camber	.0000	.1250	.0000	inch
Underplate Thickness 1	30.0	80.0	37.3	micro inch

* UNLESS OTHERWISE IS NOTED, THE CHEMICAL ANALYSIS DATA ON THIS CERTIFICATE OF CONFORMANCE IS OF THE BARE BASE METAL AS PROVIDED FROM OUR SUPPLIER. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HERE IN HAS BEEN MADE TO CONFORM TO SPECIFICATION OR REQUIREMENTS OF YOUR ORDER.

DATE
12/18/23

APPROVED BY
Castro, Jessica

Wieland Metal Services, LLC

ISO 9001:2015

Issue 2



Additional facilities

150 Lackawanna Avenue, Parsippany, NJ 07054, United States
Scope: The Warehousing, Processing and distribution
of Metal Materials.

180 Alexandra Way , Carol Stream, IL 60188, United States
Scope: Slitting and coating.

2081 McCrea Street, Alliance, OH 44601, United States
Scope: Slitting and coating.

5100 S Archibald Ave, Ontario, CA 91762, United States
Scope: Slitting.

Calle La Griega #117, Parque Industrial Queretaro, Santa Rosa
Jauregui, 76220, Mexico
Scope: The Warehousing, Processing and distribution
of Metal Materials.



Centro Industrial Rio Canas Carretera 175 Lote #29
Caguas, 00725, Puerto Rico
Scope: Slitting.



Royal Power Solutions
125 Mercedes Drive
Carol Stream, IL 60188
Tel (630) 766-2685
Fax (630) 766-0401

Study Results for Gage A19263826 (Digital Caliper) on 1/18/23

GAGE LOG INFORMATION

Gage Log No: 2604750
Gage ID: A19263826
Gage Log Type: Gage Study
Study Date: 1/18/23

Device Name:
Operators: 3
Operator Names: Vazquez, Lara, Peon
Trials: 3
Samples: 10

CHARACTERISTIC & VARIATION

LSL: 0
USL: 0
Tolerance: .000000
Spec Description:
Part-to-Part Standard Deviation (σ_p): .001222
Measurement Standard Deviation (σ_m): .000051
Process Variation Standard Deviation (σ_t): .001223

K1: .590818
K2: .523136
K3: .314559
Average of All Ranges ($\bar{R}$): .000333
X Difference ($\bar{X}_{DIFF}$): .000333
Range of Part Average (R_p): .020000

MEASUREMENT UNIT ANALYSIS - GRR (Range Method)

GRR

Repeatability - Equipment Variation (EV): .000197
Reproducibility - Appraiser Variation (AV): .000171
GageR&R (GRR): .000260
Part Variation (PV): .006291
Total Variation (TV): .006297

Repeatability As % (EV/TV): 3.12
Reproducibility As % (AV/TV): 2.71
GRR % (GRR /TV): 4.14
% PV (PV / TV): 99.91
Distinct Levels: 34.07
GRR % of Tolerance/5.15: .00 %

Comments:



Royal Power Solutions
125 Mercedes Drive
Carol Stream, IL 60188
Tel (630) 766-2685
Fax (630) 766-0401

Study Results for Gage CCP1401526 (Optical Projector) on 10/23/22

GAGE LOG INFORMATION

Gage Log No: 2591281
Gage ID: CCP1401526
Gage Log Type: Gage Study
Study Date: 10/23/22

Device Name: Estudio MSA Aceptable
Operators: 3
Operator Names: Vazquez, Lara, Peon
Trials: 3
Samples: 10

CHARACTERISTIC & VARIATION

LSL: 86
USL: 88
Tolerance: 2.000000
Spec Description: Angulo 86-88

MEASUREMENT UNIT ANALYSIS - GRR (ANOVA Method)

Source	DF	SS	MS	F	P	Source	Var Comp	Std Dev	Sigma Spread	% Total Variation	% Contribution
Part	9	8.5809822220	.9534424691	480.3087214975	.0000000000	Repeatability (EV)	.0003644444	.0190904280	.0983157040	5.8464463274	.3418093466
Appraiser	2	.0006688888	.0003344444	.1684806018	.8453476827	Reproducibility	.0005402058	.0232423271	.1196979845	7.1179660368	.5066544050
Appraiser-by-Part	18	.0357311114	.0019850617	5.4468158352	.0000000000	Appraiser (AV)	.0000000000	.0000000000	.0000000000	.0000000000	.0000000000
Equipment	60	.0218666664	.0003644444	.0000000000	.0000000000	Interaction (INT)	.0005402058	.0232423271	.1196979845	7.1179660368	.5066544050
Total	89	8.6392488886	.0000000000	.0000000000	.0000000000	Total Gage R&R (GRR)	.0009046502	.0300774036	.1548986286	9.2112092127	.8484637516
Alpha to remove interaction term = 0.25		.0000000000	.0000000000	.0000000000	.0000000000	Part-To-Part (PV)	.1057174897	.3251422607	1.6744826427	99.5748644229	99.1515362484
						Total Variation (TV)	.1066221399	.3265304579	1.6816318580	100.0000000000	.0000000000

Number of Distinct Categories: 15

Comments:

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
C608306

Valid:
12 September 2023 – 11 September 2026

IATF Certificate No:
0482976

This is to certify that the management system of

RPTECH de Mexico S. de R.L. de C.V

Carretera Estatal 431 km 2+200, Int. 73, Parque Tecnológico Innovación Querétaro, 76246, El Marques, Queretaro, Mexico (USI: LFNR46)

and, if applicable, the remote supporting locations as mentioned in the Appendix accompanying this Certificate

has been found to conform to the Quality Management System standard:

IATF 16949:2016

This certificate is valid for the following scope:

Design and Manufacture of Precision metal Stampings. The Injection / Insertion of molding parts.

EXCLUSION: NONE

Place and date:
Katy, TX, 12 September 2023
Revision 0



For the issuing office:
DNV - Business Assurance
1400 Ravello Drive, Katy, TX, 77449-5164, USA



Sherif Mekkawy
Management Representative



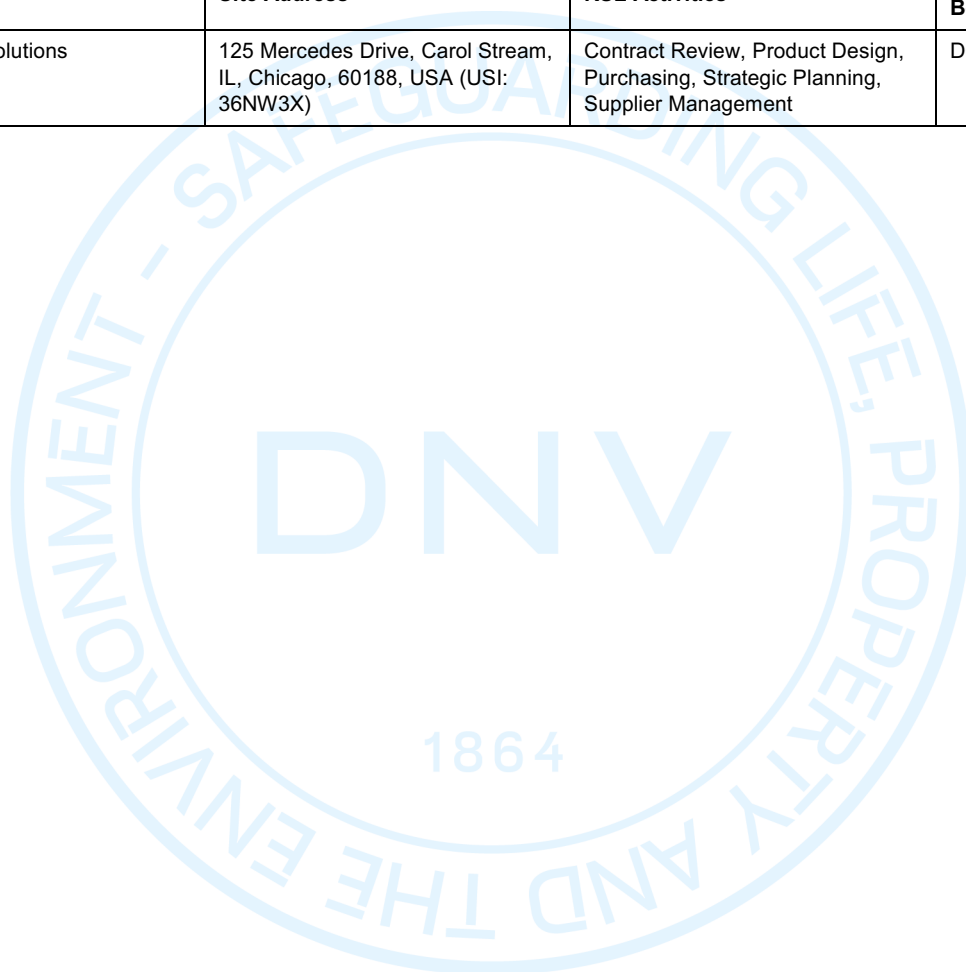
Certificate no.: C608306
IATF Certificate No: 0482976
Place and date: Katy, TX, 12 September 2023

Appendix to Certificate

RPTECH de Mexico S. de R.L. de C.V

Remote Support Locations included in the certification are as follows:

Site Name	Site Address	RSL Activities	Certification Body
Royal Power Solutions	125 Mercedes Drive, Carol Stream, IL, Chicago, 60188, USA (USI: 36NW3X)	Contract Review, Product Design, Purchasing, Strategic Planning, Supplier Management	DQS



Magnitud / magnitude	Proceso / Process	Rango / Range	Equipos de Inspección, Medición o Pueba / Inspection measurement and test equipment	Unidad / unit	Inspección/ Prueba/ Calibración (inspection/Test/Calibration)	Patrones utilizados / Patter Used	Método / Method		
							Interno / Internal	Referencia Nacional o Internacional / National or International Reference	
Longitud/ Length	Dimensional	0-6", 0-8", 0-12"	Vernier /Caliper	mm / in	Liberacion de primera pieza, proceso, ultima pieza y full layout / Firts piece, Quality in-process inspection, Last piece inspections and full layout	N/A	IT-C-0172	N/A	
		0-1", 1-2", 2-3"	Micrometro / Micrometer	mm / in		N/A	IT-C-0173	N/A	
		0-1"	Indicador de alturas / Drop indicator	mm / in		N/A	IT-C-0174	N/A	
		0-12", 0-18"	Vernier de alturas / Caliper Height	mm / in		N/A	IT-C-0175	N/A	
		700*1000*600 (mm)	CMM / MMC	mm / in		N/A	IT-C-0081 y De acuerdo al no parte (Acorcing part number)	N/A	
		0-16"	Comparador óptico / Optical comparator	mm / in		N/A	IT-C-0003	N/A	
		300 x 200 mm	Sistema de visión (Keyence) / Visión system (Keyence)	mm / in		N/A	IT-C-0077 y De acuerdo al no parte (Acorcing part number)	N/A	
Fuerza / Force	Push out test	0 - 2500 lbf	Maquina universal Dillon / Dillon gauge force	N/Nm/ lb / lbf		N/A	IT-C-0001	N/A	
		100lbf/ 50 kgf/ 500N	Dinamómetro / Dinamometer	N/ Kgf / lbf		N/A	IT-C-0176	N/A	
Par Torsión / Torque	Prueba de torque manual / Manual Torque Test	3-15 lb-in / 0-30 lb-in	Torque Manual Analógico / Analog Manual Torque	in*lb/ Nm		N/A	IT-C-0011	ISO 16047:2005 Fasteners Torque / clamp force testing	
		0-50 lb-in	Torque Manual Digital / Manual digital Torque	in*lb/ Nm		N/A	IT-C-0107		
		25 Nm	Torque Stanley/ Stanley Nut Driver	N/Nm/ lb / lbf		N/A	IT-C-0002		
		5 Nm	Torque Digital Shimpo/ Shimpo Digital	N/Nm/ lb / lbf		N/A	IT-C-0149		
Humedad Relativa / Relative Humidity	Prueba de humedad resina / Resin Moisture Test	100 g	Analizador de Humedad / Moisture analyzer	mg/g		N/A	IT-C-0004	ASTM D6980	
Longitud/ Length	Verificacion interna / internal verificación	0-6", 0-8", 0-12"	Vernier /Caliper	mm / in		Verificacion interna / internal Verificación	Kit bloques patrón / set gage blocks ID: 1807937 ID: 2005911	IT-C-0008	NMX-CH-002-IMNC-2004
		0-1", 1-2", 2-3"	Micrómetro / Micrometer	mm / in				IT-C-0007	NMX-CH-099-IMNC-2005 ISO 3611:1978 JIS B-7502
		0-1"	Indicador de alturas / Drop indicator	mm / in				IT-C-0085	NMX-CH-463-IMNC-2008
		0-12", 0-18"	Vernier de alturas / Caliper Height	mm / in	IT-C-0084			NMX-CH-141-IMNC-2005 ISO/DIS 13225.2:1998	
		0.011" - .832" 0.20mm - 4.98mm	Pin gage	mm / in	293-130-10		IT-C-0082	—	
		0-300 mm	Reglas Graduadas	mm / in	6C0M00004Z		IT-C-0083	NMX-CH-148-IMNC-2018	
		300 x 200 mm	Sistema de vision (Keyence) / Visión system (Keyence)	mm / in	OP-88552		IT-C-0087 / IT-C-0088	JIS B 7541-2001	
		Responsable: Berenice Zamorano Posicion: Metrólogo		RPTech de Mexico S. de R.L. de C.V.			Address: arretera Estatal 431 KM 2+200 Int 73, Parque Tecnologico Innovacion Queretaro, El Marques, Queretaro, CP. 76246		
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