



Part Name RETAINER WIRE HARNESS TAPE ON Cust. Part Number LU5T-14E042-FA
 Shown on Drawing No. LU5T-14E042-FA Org. Part Number E-4-15-5
 Engineering Change Level A1 Dated 13-Jul-20
 Additional Engineering Changes N/A Dated N/A
 Safety and/or Government Regulation ☐ YES ☒ NO Purchase Order No. N/A Weight (kg) 0.0008
 Checking Aid No. N/A Checking Aid Engineering Change Level N/A Dated N/A
 Mold Number E-4-15-N4

ORGANIZATION MANUFACTURING INFORMATION

ELGIN DIE MOLD CO

Organization Name & Supplier/Vendor Code

14N002 PRAIRIE STREET

Street Address

PINGREE GROVE, IL 60140 USA
 City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

NURSAN OTOMOTIV EOOD

Customer Name/Division

N/A

Buyer/Buyer Code

AUTOMOTIVE

Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported?

☒ YES ☐ NO ☐ N/A

Submitted by IMDS or other customer format:

IMDS #1213299376/1

Are polymeric parts identified with appropriate ISO marking codes?

☐ YES ☐ NO ☒ N/A

REASON FOR SUBMISSION

☒ 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

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 packageThese results meet all drawing and specification requirements: ☒ Yes ☐ No (If "NO" - Explanation Required)Mold / Cavity / Production Process 1 / 32CAV'S, CAV.65 THRU 96 (N4 MOLD)/ INJECTION MOLDING

DECLARATION

I hereby 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 46080 / 8 hours.

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

EXPLANATION/COMMENTS:

Is each Customer Tool properly tagged and numbered?

☐ YES ☐ NO ☒ N/A

Organization Authorized Signature

Date 4/18/2023Print Name JOHN KLEVERPhone No. (847)464-0140Fax No. (847)464-0147Title ENGINEERING DIRECTORE-mail engdir@elgindiemold.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other

Customer Signature

Date

Print Name

Customer Tracking Number (optional)

Sapiente, John

Elgin Die Mold [9333]

MDS Functions Administration Help



Sent MDSs

Ingredients

Supplier Data

Recipient data

Analysis

MDS Request

Name RET WIR CONN ID version 1213299376 / 1 Node ID 1213299376 Status Internally released



Send



Propose



Release Internal



Publish

**Nursan Elektrik Donanim Sai** Details**Transfer Information**

Company Nursan Elektrik Donanim Sanayi ve Ticaret A.S. [18239]

Organisation unit -

Recip. Status accepted

Supplier Code 9333 ?

Name RET WIR CONN ?

Part/Item No. LU5T-14E042-FA ?

Legacy Spare Part No ?

Transmission/Check Date 4/17/2023

Forwarding allowed Yes

Drawing

Drawing No. LU5T-14E042-FA

Drawing dated 07/13/2020 ?

Drawing Change Level A1 ?

Purchase Order

Purchase Order No. -

Bill of Delivery No. -

Report

Report No. E-4-15-5

Date of Report 04/17/2023



This Module/MDS cannot be edited, because it is a full version (1).



MDS Report

Substances of assemblies and materials

This report is for internal Automotive industry use only. Distribution to non-Automotive clients is a violation of the Terms of Use, and is not permitted unless a written permission was given by DXC Technology. Parsing is not allowed.

1. Company and Product Name

1.1 Supplier Data

Name [ID]: Elgin Die Mold [9333]
DUNS Number: -
Street/Postal Code: 14N002 Prairie Street
Nat./ZipCode/City: US 60140 Pingree Grove
Supplier Code: -
Contact Person: Emilia Rizov
- Phone: -
- Fax No.: -
- E-Mail Address: eng3@elgIndiemold.com

1.2 Product Identification

Part/Item No.: LU5T-14E042-FA
Description: RET WIR CONN
Report No.: -
Date of Report: -
Purchase Order No.: -
Bill of Delivery No.: -
Preliminary MDS: No
Multi Sourced: No
IMDS ID / Version: 1213299376 / 1
Node ID: 1213299376
MDS Status (Change Date): Internally released (05/04/2023)

MDS Report

Substances of assemblies and materials

Materials which are subject to legal prohibitions must not be included!
Dangerous substances formed or released during use must also be declared
Please note: GADSL list for substances that require declaration

2. Characterization of the Component

Part/Item No.: LU5T-14E042-FA

Report No.: -

Description: RET WIR CONN

IMDS ID / Version: 1213299376 / 1

Node ID: 1213299376

Tree Level	Description Article Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
1	RET WIR CONN	LU5T-14E042-FA	1213299376 / 1		0.8				Not Applicable
F-2	POM	CELCON M90 CF2001	559356823 / 18		0.8			5.1.b	No
F-3	POM	-				98.9			
F-3	Further Additives, not to declare	system				0.85			

Tree Level	Description Article Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
I-3	Ethylenebis(oxyethylene) bis[3-(5-tert-butyl-4-hydroxy-m-tolyl)propi...	36443-68-2				0.25		D	
This is an uncontrolled copy of a document created by IMDS. End of the report.									

Legend

Multi Sourced Component

PROCESS FLOW DIAGRAM

Family name E-4-15-5		Date (Orig.) 8/28/2020		Prepared by CHRIS KASTEN			
Part Number LU5T-14E042-FA		Date (Rev.) 4/17/2023		Title PROJECT MANAGER			
Part Name RETAINER WIRE HARNESS TAPE ON		Page 1 of 3		Phone Number 847-464-0140			
Cross Functional Team Members BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (QC)							
Symbol Key: ◆ Manufacturing/Assembly ● Movement of Materials/Parts ▲ Storage of Materials/Parts ■ Inspection							
Step #	Fab	Move	Store	Insp	Operation description	Item #	Special Characteristics
1				■	RECEIVING INSPECTION OF RAW MATERIAL TAG.	1	MATERIAL LOT TO LOT 1 COLOR
					RAW MATERIAL WITH PROPER MAT'L LOT CODE	2	CONSISTENCY 2 PACKAGING INTEGRITY
							3 LOT NUMBER
							4 MATERIAL CERTIFICATION
2			▲		STORE ACCEPTED RAW MATERIAL IN WAREHOUSE ACCORDING TO FIRST-IN-FIRST-OUT (FIFO) MATERIAL ROTATION METHOD	1	INVENTORY CONTROL 1 MATERIAL INVENTORY
						2	MATERIAL HANDLING
3		●			MOVE RAW MATERIAL TO PRESS AREA		
					RECORD LOT CODE PER PRODUCTION RUN		
4				■	SET-UP AND PERFORM 1ST PIECE INSPECTION	1	RAW MATERIAL (CONTROL CHART SPECS)
						2	EQUIPMENT CALIBRATION 1 DIM.# 17, 19
						3	EQUIPMENT/MATERIAL 2 FLASH ALLOWANCE PER SPECS ON DWG.; NO BURNS, VOIDS OR SHORTS
						4	IDENTIFICATION 3 NO CONTAMINATION
						5	SET-UP PROCEDURES 4 GATE VESTIGE
						6	TOOL SET-UP AND ADJUSTMENTS
						7	MEASUREMENT METHODS/PROCEDURES
						8	MOLD TEMPERATURE
						9	PRESS CYCLE TIME
						10	MATERIAL MOISTURE CONTENT
						11	INJECTION BARREL

PROCESS FLOW DIAGRAM

Family name E-4-15-5		Date (Orig.) 8/28/2020	Prepared by CHRIS KASTEN				
Part Number LU5T-14E042-FA		Date (Rev.) 4/17/2023	Title PROJECT MANAGER				
Part Name RETAINER WIRE HARNESS TAPE ON		Page 2 of 3	Phone Number 847-464-0140				
Cross Functional Team Members BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (QC)							
		Symbol Key: ◆ Manufacturing/Assembly ● Movement of Materials/Parts ▲ Storage of Materials/Parts ■ Inspection					
Step #	Fab	Move	Store	Insp	Operation description	Item #	Special Characteristics
5	◆			■	EDM MOLD # E-4-15-N4	1	RAW MATERIAL (CONTROL CHART SPECS)
					PROPERLY FINISHED PRODUCT WITH PROPER FINISHED PRODUCT LOT CODE	2	EQUIPMENT CALIBRATION 1 DIM.# 17, 19
					IN-PROCESS INSPECTION: MEASURE, VISUAL	3	EQUIPMENT/MATERIAL 2 FLASH ALLOWANCE PER SPECS ON DWG.: NO BURNS, VOIDS OR SHORTS
						4	IDENTIFICATION 3 NO CONTAMINATION
						5	SET-UP PROCEDURES 4 GATE VESTIGE
						6	TOOL SET-UP AND ADJUSTMENTS
						7	MEASUREMENT METHODS/PROCEDURES
						8	MOLD TEMPERATURE
						9	PRESS CYCLE TIME
						10	MATERIAL MOISTURE CONTENT
						11	INJECTION BARREL
						12	TOOL WEAR AND MAINTENANCE
						13	PREVENTIVE MAINTENANCE
						14	OPERATOR TRAINING
6		●			PACKAGE PRODUCT	1	MATERIAL HANDLING METHODS 1 BULK PACK
						2	PACKAGING SPECIFICATIONS 2 LAYER PACK
						3	CELL PACK
7		●			MOVE INSPECTED PRODUCT TO FINAL AUDIT	1	MATERIAL HANDLING
8				■	FINAL AUDIT OF PRODUCT	1	RAW MATERIAL (CONTROL CHART SPECS)
					STAMP CONTAINER WITH PROPER APPROVAL STAMP	2	EQUIPMENT CALIBRATION 1 DIM.# 17, 19
						3	IDENTIFICATION 2 NO CONTAMINATION

PROCESS FLOW DIAGRAM

Family name E-4-15-5		Date (Orig.) 8/28/2020		Prepared by CHRIS KASTEN			
Part Number LU5T-14E042-FA		Date (Rev.) 4/17/2023		Title PROJECT MANAGER			
Part Name RETAINER WIRE HARNESS TAPE ON		Page 3 of 3		Phone Number 847-464-0140			
Cross Functional Team Members BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (QC)							
				Symbol Key: ◆ Manufacturing/Assembly ● Movement of Materials/Parts ▲ Storage of Materials/Parts ■ Inspection			
Step #	Fab	Move	Store	Insp	Operation description	Item #	Special Characteristics
						4	SET-UP PROCEDURES 3 GATE VESTIGE
						5	TOOL SET-UP AND ADJUSTMENTS
						6	MEASUREMENT METHODS/PROCEDURES
						7	MOLD TEMPERATURE
						8	PRESS CYCLE TIME
						9	MATERIAL MOISTURE CONTENT
						10	INJECTION BARREL
						11	TOOL WEAR AND MAINTENANCE
						12	PREVENTIVE MAINTENANCE
						13	OPERATOR TRAINING
						14	PACKAGING SPECIFICATION
9		●			MOVE ACCEPTED MATERIAL TO STORAGE		
10			▲		STORE ACCEPTED MATERIAL IN FINISHED GOODS STORAGE AREA ACCORDING TO FIRST-IN-FIRST-OUT (FIFO) PRODUCTION ROTATION METHOD		
11	◆				PLACE PRODUCT CONTAINERS ON PROPER SHIPPING MEDIUM PER SHIPPING ORDER	1	PALLET OR OTHER SHIPPING MEDIUM 1 HEIGHT NOT TO EXCEED 60"
						2	SCAN BAR CODE
						3	SHRINK WRAP 2 PRODUCT PACKAGING NOT TO OVERLAP BOUNDARIES OF SHIPPING MEDIUM
12		●			SHIP FINAL GOODS PER RELEASE SPECIFICATION	1	TRANSPORTATION 1 BILL OF LADING
						2	SHIP TICKET

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)													
Item:	LU5T-14E042-FA	Process Responsibility:	ELGIN DIE MOLD COMPANY	FMEA Number:	E-4-15-5								
Model Year(s)/Vehicle(s):	N/A	Key Date:	N/A	Prepared by:	CHRIS KASTEN								
Team:	BILL RUBA, JOHN KLEVER, CHRIS KASTEN, DIVYA PATEL, IRVING RODRIGUEZ												
Process Function/Requirements	Potential Failure Mode	Potential Effect(s) of Failure	S	C	Potential Cause(s)/ Mechanism(s)	O	C	Current Process Controls	D	R. P. N.	Recommended Actions	Responsibility & Target Date	Action Results
(1) RECEIVE RAW MATERIAL	WRONG MATERIAL SUBSTANDARD MATERIAL	POTENTIAL FAILURE AFFECTS SAFETY AND INVOLVES NONCOMPLIANCE WITH GOVERNMENT REGULATION WITHOUT WARNING.	10	1	MISMARKED FROM MANUFACTURER	2	1	SHIPPING DEPARTMENT NOT TO ACCEPT MATERIAL WITHOUT CERTIFICATION	5	100	NONE		
	MIXED BAGS IN SHIPMENT	MATERIAL SHORTAGE, A PORTION OF THE PRODUCTION RUN MAY HAVE TO BE SCRAPPED	7	1	SHIPPING ERROR	2	1	SHIPPING DEPARTMENT NOT TO ACCEPT MIXED BAGS OF MATERIAL IN SHIPMENT	5	70	NONE		
(2) STORE RAW MATERIAL	CONTAMINATED MATERIAL	DAMAGED CONTAINER - INTEGRITY OF MATERIAL AFFECTED, 100% OF PRODUCT RUN MAY HAVE TO BE SORTED BEFORE IT IS PROCESSED.	7	1	INADEQUATE HANDLING PROCESS DURING TRANSIT TO STORAGE	2	1	VISUAL INSPECTION OF MATERIAL BY MATERIAL HANDLING PERSONNEL	5	70	NONE		
(3) MOVE RAW MATERIAL TO PRESS AREA	INCORRECT MATERIAL	PART FAILURE, LINE DOWN SITUATION, DIMENSIONAL INSTABILITY, 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	MATERIAL LABELED INCORRECTLY	2	1	MATERIAL STORED IN COLOR-CODED, LABELED AND SEALED STORAGE BARRELS	5	80	NONE		
		PART FAILURE, LINE DOWN SITUATION, DIMENSIONAL INSTABILITY, 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	SETUP PERSON PICKS WRONG MATERIAL	2	1	MOLDING SETUP PROCESS - CORRECT MATERIAL LABELING	5	80	NONE		
	CONTAMINATED MATERIAL	DIMENSIONAL INSTABILITY, SPLAY, BRITTLENESS, POOR COLOR, PORTION OF THE PRODUCTION RUN MAY HAVE TO BE SCRAPPED.	7	1	NOT FOLLOWING JOB REQUIREMENTS FOR MATERIAL HANDLING	2	1	MATERIAL STORED IN COLOR-CODED, LABELED AND SEALED STORAGE BARRELS	5	70	NONE		
(4) JOB SETUP	WRONG MOLD; SIMILAR PART CONFIGURATION	TOTAL PART FAILURE - PART NOT FUNCTIONAL, 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	MOLD NOT CLEARLY IDENTIFIED	2	1	EACH MOLD IDENTIFIED CLEARLY AT CHECK IN.	5	80	NONE		
	MOLD NEEDS REPAIR	DIMENSIONAL ISSUES, FLASH, BURNS, VOIDS, SHORTS, LINE DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	MOLD DAMAGE	2	1	VISUAL INSPECTION OF MOLD AT EACH PM CYCLE	5	80	NONE		
		DIMENSIONAL ISSUES, FLASH, BURNS, VOIDS, SHORTS, LINE DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	MOLD NOT TAGGED FOR REPAIR	2	1	TOOLING WORK REQUISITION PROCEDURE	5	80	NONE		
	WRONG MATERIAL	DIMENSIONAL ISSUES, BRITTLENESS, OVERALL PART FUNCTION, DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	SETUP SHEET INCORRECT	2	1	ENGINEERING / MOLDING APPROVAL OF SETUP SHEETS	5	80	NONE		
		DIMENSIONAL ISSUES, BRITTLENESS, OVERALL PART FUNCTION, DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	1	MATERIAL MISLABELED	2	1	REGRIND BARRELS HAVE COLOR-CODED LABELS	5	80	NONE		

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)														FMEA Number:	E-4-15-5
Item:	LU5T-14E042-FA	Process Responsibility:		ELGIN DIE MOLD COMPANY		Prepared by:		CHRIS KASTEN							
Model Year(s)/Vehicle(s):	N/A	Key Date:		N/A		Date (Orig.):		8/28/2020							
Team:	BILL RUBA, JOHN KLEVER, CHRIS KASTEN, DIVYA PATEL, IRVING RODRIGUEZ														
Process Function/Requirements	Potential Failure Mode	Potential Effect(s) of Failure	S	C	Potential Cause(s)/ Mechanism(s) of Failure	O	Current Process Controls	Current Process Controls	D	R. P. N.	Recommended Actions	Responsibility & Target Date	Action Results		
		DIMENSIONAL ISSUES, BRITTLINESS, OVERALL PART FUNCTION, DOWN SITUATION: 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		SETUP PERSON PULLS WRONG MATERIAL	2	MOLDING SETUP PROCESS - CORRECT MATERIAL LABELING	Detection	5	80	NONE	Actions Taken Date Completed Date Verified	S e c t N		
	WRONG MATERIAL BLEND COMPOSITION.	DIMENSIONAL ISSUES, POOR COLOR, PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	6		BLEND COMPONENT DISTRIBUTED IN INCORRECT PROPORTIONS	2	MATERIAL COMPONENTS BLENDED DIRECTLY TO BARRELS	Prevention	5	60	NONE				
	WARPAGE	IMPROPER APPEARANCE - PART MAY NOT BE FUNCTIONAL. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		IMPROPER SETUP OF MOLD	2	MOLD SET UP PER JOB INSTRUCTIONS		5	80	NONE				
	INCORRECT MATERIAL	TOTAL PART FAILURE - PART NOT FUNCTIONAL. DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		PROCESS VARIATION	2	INPUT VALUES FROM SETUP SHEET INTO COMPUTER CONTROLLED MOLDING PRESSES.		5	80	NONE				
		TOTAL PART FAILURE, LINE DOWN SITUATION, DIMENSIONAL INSTABILITY, DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		MATERIAL MISMARKED	2	MATERIAL STORED IN COLOR CODED, LABELED STORAGE BARRELS		5	80	NONE				
		TOTAL PART FAILURE, LINE DOWN SITUATION, DIMENSIONAL INSTABILITY, DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		SETUP PERSON PULLS WRONG MATERIAL	2	MOLDING SETUP PROCESS - CORRECT MATERIAL LABELING		5	80	NONE				
	CONTAMINATED MATERIAL	DIMENSIONAL INSTABILITY, SPLAY, BRITTLINESS, POOR COLOR. PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	7		DIFFERENT KINDS OF MATERIAL MIXED TOGETHER	3	MATERIAL STORED IN COLOR CODED, LABELED STORAGE BARRELS		5	105	NONE				
	MATERIAL/COLORANT LOT CODE NOT RECORDED	NO MATERIAL LOT TRACEABILITY	6		LOT CODE NOT AVAILABLE	2	FOREMAN VERIFY MATERIAL AND LOT NUMBER		5	60	NONE				
	PROCESSING PARAMETERS ADJUSTED	FLASH, BURNS, VOIDS, OR SHORTS. 100% PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	6		POOR INFORMATION GIVEN TO FOREMAN AND OR POOR CORRECTIVE ACTION TAKEN BY MOLDING FOREMAN	3	VERIFY PARAMETER SETTINGS PER SET UP SHEET		5	90	NONE				
	PROCESS INTERRUPTION	FLASH, BURNS, VOIDS, OR SHORTS. A PORTION OF THE PRODUCT MAY HAVE TO BE SCRAPPED.	7		EQUIPMENT MALFUNCTIONS	2	ERROR-PROOFING DEVICES PER MD-27.		3	42	NONE				
		FLASH, BURNS, VOIDS, OR SHORTS. A PORTION OF THE PRODUCT MAY HAVE TO BE SCRAPPED.	7		CRITICAL PROCESS INPUTS CHANGE PER MD-27.	2	ERROR-PROOFING DEVICES PER MD-27.		3	42	NONE				
	CRITICAL DIMENSIONS NOT TO PRINT	PART IS NOT FUNCTIONAL. LINE DOWN SITUATION. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8		DIMENSIONS (DIM # 17, 19) NOT IN PRINT SPEC	2	MOLDING PARAMETERS ON SETUP SHEET AT PRESS.		6	95	NONE				

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)														
Item:	LU5T-14E042-FA	Process Responsibility:			ELGIN DIE MOLD COMPANY			Prepared by:			CHRIS KASTEN			
Model Year(s)/Vehicle(s):	N/A	Key Date:			N/A			Date (Orig.):			8/28/2020			
Team:	BILL RUBA, JOHN KLEVER, CHRIS KASTEN, DIVYA PATEL, IRVING RODRIGUEZ						Date (Rev.):			4/17/2023				
Process Function/ Requirements	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Cause(s)/ Mechanism(s) of Failure	Potential Occurrence	Current Process Controls Prevention	Current Process Controls Detection	Defect	R. P. N.	Recommended Actions	Responsibility & Target Date	Action Results		
		DIMENSIONAL ISSUES. PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	8	MEASURING DEVICE OUT OF CALIBRATION	2	CALIBRATION PROCEDURE	PROCEDURE - CALIBRATION DATES MANAGED BY IQMS SOFTWARE	6	96	NONE		Actions Taken	Date Completed	Date Verified
	SPLAY, BRITTLNESS	APPEARANCE AND FUNCTIONAL ISSUES. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	7	MATERIAL DRIED IMPROPERLY	2	DRYER SETUP PER MOLDING JOB REQUIREMENTS	MOLDING FOREMAN TO VERIFY SETUP OF DRYER AND MONITOR IN-PROCESS	7	98	NONE				
	BROKEN TOOLING	PART IS NOT FUNCTIONAL LINE DOWN SITUATION. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	TOOL DAMAGE DUE TO FATIGUE / MOLD WEAR	2	PREVENTIVE MAINTENANCE SOFTWARE TRACKS USAGE/HOURS	FIRST PIECE INSPECTION AND IN PROCESS VISUAL INSPECTION	5	80	NONE				
		PART IS NOT FUNCTIONAL LINE DOWN SITUATION. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	IMPROPER SETUP	2	SETUP INSTRUCTIONS PER MOLDING JOB REQUIREMENTS	FIRST PIECE INSPECTION AND IN PROCESS VISUAL INSPECTION	5	80	NONE				
		PART IS NOT FUNCTIONAL LINE DOWN SITUATION. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	POOR DESIGN	2	ENGINEERING REVIEW OF ALL NEW DESIGNS WITH CORE TEAM	FIRST PIECE INSPECTION / IN PROCESS VISUAL INSPECTION - APPROVAL OF INITIAL TOOL DRAWINGS BY ENGINEERING TEAM	5	80	NONE				
		PART IS NOT FUNCTIONAL LINE DOWN SITUATION. 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	8	UNKNOWN CAUSES	2	SETUP INSTRUCTIONS - VISUAL INSPECTION - MAINTENANCE REPAIR PROGRAM	FIRST PIECE INSPECTION AND IN PROCESS VISUAL INSPECTION	5	80	NONE				
	BURNS, DIMENSIONAL ISSUES, COSMETIC ISSUES	APPEARANCE AND FUNCTIONAL ISSUES. 100% PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	6	NO CLEANING OR INFREQUENT CLEANING OF MOLD	3	PREVENTIVE MAINTENANCE HOURS TRACKING PROGRAM	FIRST PIECE INSPECTION AND IN PROCESS VISUAL INSPECTION - PMI PROGRAM	5	90	NONE				
		FLASH, BURNS, VOIDS, OR SHORTS. 100% PORTION OF THE PRODUCT MAY HAVE TO BE SORTED BEFORE ACCEPTED.	6	EQUIPMENT WEAR	3	PREVENTIVE MAINTENANCE	MAINTENANCE LOG ON EQUIPMENT	8	108	NONE				
(6) PACKAGE PRODUCT	INCORRECT COUNT IN CARTON	OVER SHIPMENT	3	OPERATOR MISCOUNT	2	WEIGHT SCALES	WEIGHT SCALE JOB INSTRUCTIONS AND TRAINING	7	42	NONE				
		UNDER SHIPMENT	4	OPERATOR MISCOUNT	2	WEIGHT SCALES	WEIGHT SCALE JOB INSTRUCTIONS AND TRAINING	7	56					
	INCORRECT LABEL	CUSTOMER REJECTION	6	IMPROPER SETUP INSTRUCTION AT PRESS	3	LABEL SETUP AND REMOVAL CHECKLIST - VISUAL INSPECTION - LABEL SCANNER	MOLDING FOREMEN TO VERIFY SETUP - CORRECT LABELS AT PRESS	7	126	NONE				
	UNREADABLE LABEL	CUSTOMER REJECTION	6	POOR LABEL QUALITY	3	LABELS SCANNED BEFORE SHIPMENT	THERMAL PRINTER TO PRINT OUT LABELS	7	126	NONE				
			4	PRINTER MALFUNCTION	3	LABELS SCANNED BEFORE SHIPMENT	VISUAL INSPECTION	7	84	NONE				
	PRINT CUT OFF ON LABEL	RECEIVING LOCATION ARE NOT ABLE TO SCAN, OR NOT ABLE TO DETERMINE PARTS VISUALLY	6	INCORRECT PRINTER SET UP PROGRAM	3	LABEL PRINTER SET UP WORK INSTRUCTION	VERIFICATION OF SET UP - VERIFICATION BY OPERATOR	7	126					
	MIXED PARTS	CUSTOMER REJECTION	6	NOT FOLLOWING INSTRUCTION AT SCALE AREA	2	IMPROVED TRAINING AT BOXES CONTAINING PARTS ALWAYS HAVE THE CORRECT LABEL	VISUAL - UNLABELED BOXES CONTAINING PARTS NOT ALLOWED	7	84	NONE				

POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)											
Item:	LU5T-14E042-FA	N/A	Process Responsibility:	ELGIN DIE MOLD COMPANY	FMEA Number:	E-4-15-5					
Model Year(s)/Vehicle(s):			Key Date:	N/A	Prepared by:	CHRIS KASTEN					
Team:	BILL RUBA, JOHN KLEVER, CHRIS KASTEN, DIVYA PATEL, IRVING RODRIGUEZ				Date (Orig.):	8/28/2020					
					Date (Rev.):	4/17/2023					
Process Function/Requirements	Potential Failure Mode	Potential Effect(s) of Failure	Cause(s) Mechanism(s) of Failure	Current Process Controls	Current Process Controls	Recommended Actions	Responsibility & Target Date	Action Results			
(7) MOVE PRODUCT TO FINAL AUDIT AREA	FINAL AUDIT PRODUCT STORED IN WRONG AREA	PRODUCT NOT AVAILABLE FOR FINAL AUDIT	PRODUCT NOT STORED IN ORDERLY MANNER - FINAL AUDIT AREA NOT CLEARLY MARKED OR MONITORED	2	FINAL AUDIT PROCESS AND CLEARLY MARKED FINAL AUDIT ROWS	5	50	NONE			
(8) FINAL AUDIT	DIMENSIONAL OR VISUAL DEFECTS: INCORRECT PACKAGING, LABELING OR QUANTITY	DIMENSIONAL OR VISUAL ISSUES, FUNCTIONAL REJECTS. 100% OF PRODUCT RUN MAY HAVE TO BE SORTED BEFORE ACCEPTED.	WORK INSTRUCTIONS NOT FOLLOWED	3	INSPECTION PER CONTROL PLAN AND MOLDING AND PACKAGING INSTRUCTIONS	5	90	NONE			
(9) MOVE ACCEPTED MATERIAL TO STORAGE AREA	ACCEPTED PRODUCT STORED IN WRONG AREA	MATERIAL NOT ABLE TO BE SHIPPED OR WRONG MATERIAL SHIPPED	PRODUCT NOT STORED IN ORDERLY MANNER - STORAGE AREA NOT CLEARLY MARKED OR MONITORED	2	DESIGNATED STORAGE AREAS	5	50	NONE			
(10) STORAGE MATERIAL	UNAPPROVED PRODUCT SHIPPED TO CUSTOMER	DIMENSIONAL ISSUES, FUNCTIONAL REJECTS. LINE DOWN SITUATION 100% OF PRODUCT RUN MAY HAVE TO BE SCRAPPED.	UNAPPROVED PRODUCT MOVED TO STORAGE AREA	2	PRODUCT MUST PASS THROUGH FINAL AUDIT AREA BEFORE MOVING TO STORAGE AREA	6	95	NONE			
(11) PREPARE PRODUCT FOR SHIPMENT	DAMAGED CONTAINER	MATERIAL CONTAMINATED - INTEGRITY OF MATERIAL AFFECTED	INADEQUATE HANDLING PROCESS DURING TRANSIT TO STORAGE OR IN STORAGE	2	VISUAL HANDLING OF MATERIAL BY MATERIAL HANDLING PERSONNEL FIFO ROTATION OF MATERIAL	6	72	NONE			
	CARTON SERIAL NUMBER NOT RECORDED	NO LOT TRACEABILITY	CARTON SERIAL NUMBER NOT AVAILABLE	2	BAR CODE READER SYSTEM IN SHIPPING	6	72	NONE			
	MISLABELED	INCORRECT PARTS SHIPPED TO CUSTOMER	WORK INSTRUCTIONS NOT FOLLOWED	3	SIMPLIFIED WORK INSTRUCTIONS: IMPROVED TRAINING.	5	72	NONE			
(12) SHIP TO CUSTOMER	IMPROPER PACKAGING	CUSTOMER REJECTION, PARTS DAMAGED IN TRANSIT	INCORRECT PACKING MATERIALS USED	2	PER SHIPPING INSTRUCTIONS	5	72	NONE			
		CUSTOMER REJECTION, PARTS DAMAGED IN TRANSIT	IMPROPER WRAPPING OF PRODUCT ON SKID	2	SETUP INSTRUCTIONS - AUTOMATIC SHRINK WRAPPING EQUIPMENT	4	48	NONE			

Control Plan Category ☐ Prototype ☒ Pre-Launch ☐ Production	Key Contact Name CHRIS KASTEN		Date (Orig) 8/28/2020	Date (Rev) 4/17/2023	Page 1 of 5
Control Plan Number E-4-15-5	Key Contact Phone 847-464-0140		Customer Engineering Approval (If Req'd)		
Part Number LU5T-14E042-FA	ECL A1	Supplier / Plant Approval / Date CHRIS KASTEN	Customer Quality Approval (If Req'd)		
Part Name / Description RETAINER WIRE HARNESS TAPE ON		Other supplier approval by (If Req'd)	Other Approval (If Req'd)		
Supplier / Plant ELGIN DIE MOLD CO.		Other Approval Date (If Req'd)			

Core team Members

BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (Q.C.)

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics			Special Char. Class.	Methods						Reaction Plan
			No.	Product	Process		Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method		
1	RECEIVE RAW MATERIAL			CELCON M90, NATURAL	MATERIAL CONTENT		WSK-M4D635-A2	INCOMING INSPECTION	1	MATERIAL LOT	MATERIAL CERT.	CONTAIN MATERIAL; ISSUE NR.	
2	STORE RAW MATERIAL	LIFT TRUCK		CELCON M90, NATURAL	MATERIAL CONTENT		BAGS OR GAYLORDS OF MATERIAL	MATERIAL CERTIFICATION - VISUAL INSPECTION	1	MATERIAL LOT	MATERIAL CERT. - MELT FLOW ANALYSIS IF NEEDED	CONTAIN MATERIAL; ISSUE NR.	
3	MOVE RAW MATERIAL TO PRESS AREA	MATERIAL MIXER - LIFT TRUCK		CELCON M90, NATURAL	MATERIAL CONTENT		BAGS OR BARRELS OF MATERIAL	VISUAL INSPECTION OF CORRECT MATERIAL	1	MATERIAL QUANTITY REQUIRED TO FILL HOPPER	HOPPER FILLED - CHECKED BY MOLDING FOREMAN	RETURN UN-USED MATERIAL TO STORAGE AREA.	
4	JOB SETUP	LIFT TRUCK - BIG JOE - MOLDING PRESS (120/5 YELLOW)		E-4-15-N4 MOLD	INJECTION MOLDING		WORK ORDER	VISUAL	1	SET UP	IQMS SCHEDULE	NOTIFY PLANT MANAGER OR OPERATIONS MANAGER OF INCORRECT TOOL.	
5	MOLD PARTS	MATERIAL DRYER #1 - #19			DRYER		0° MAX DEWPOINT	DEW POINT METER	1	PER MAINTENANCE SCHEDULE	DOCUMENT	ADJUST DRYER; CONTAIN PARTS; ISSUE NR.	
		LIFT TRUCK - BIG JOE - MOLDING PRESS (120/5 YELLOW)			E-4-15-N4 MOLD SETUP IN PRESS		REVIEW MOLD SETUP (PARAMETERS) - MOLDING WORK INSTRUCTIONS			EACH SET-UP	FIRST PIECE INSPECTION VERIFICATION	ADJUST AND RESET; CONTAIN PARTS; ISSUE NR.	
					MOLD STARTUP (SEE BELOW)								

Control Plan Category ☐ Prototype ☐ Pre-Launch ☒ Production		Key Contact Name CHRIS KASTEN		Date (Orig) 8/28/2020	Date (Rev) 4/17/2023	Page 2 of 5
Control Plan Number E-4-15-5		Key Contact Phone 847-464-0140		Customer Engineering Approval (If Req'd)		Date (If Req'd)
Part Number LU5T-14E042-FA	ECL A1	Supplier / Plant Approval / Date CHRIS KASTEN		Customer Quality Approval (If Req'd)		Date (If Req'd)
Part Name / Description RETAINER WIRE HARNESS TAPE ON		Other supplier approval by (If Req'd)		Other Approval (If Req'd)		Date (If Req'd)
Supplier / Plant ELGIN DIE MOLD CO.		Supplier Code		Other Approval Date (If Req'd)		

Core team Members
BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (Q.C.)

Characteristics				Methods				Reaction Plan				
Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	No.	Product	Process	Special Char. Class.	Product / Process Specification / Tolerance		Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method
					CONTINUOUS PRODUCTION		CRITICAL PROCESS INPUTS	ERROR PROOFING DEVICES PER MD-27	100%	100%	ALARMS PER MD-27.	ADJUST PROCESS, CONTAIN PARTS, ISSUE NR
	DIMENSIONAL MEASUREMENT		DIM # 17		INITIAL		24.1	DIGITAL CALIPER	125 PCS.	INITIALLY	X BAR R	REQUALIFY
			DIM # 17		IN-PROCESS		24.1	DIGITAL CALIPER	5 PCS CAV # 65	SU ONLY	X BAR R	REQUALIFY
			DIM # 17		IN-PROCESS		24.1	DIGITAL CALIPER	1 SHOT	SU & SC (EVERY 8 HRS.)	DOCUMENT (REF. W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
			DIM # 19		IN-PROCESS		7.6	DIGITAL CALIPER	1 SHOT	SU & SC (EVERY 8 HRS.)	DOCUMENT (REF. W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
	VISUAL CHECKS				IN-PROCESS INSPECTION		FLASH ALLOWANCE PER SPECS ON DWG.; NO VOIDS, SHORTS, OR BURNS PER VISUAL SETUP INSTRUCTION (WORK INST.)	VISUAL INSPECTION - ENTIRE PART	100%	CONTINUOUS	100%	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.

Control Plan Category ☐ Prototype ☒ Pre-Launch ☐ Production		Key Contact Name CHRIS KASTEN		Date (Orig) 8/28/2020	Date (Rev) 4/17/2023	Page 3 of 5
Control Plan Number E-4-15-5		Key Contact Phone 847-464-0140		Customer Engineering Approval (If Req'd)		
Part Number LU5T-14E042-FA	ECL A1	Supplier / Plant Approval / Date CHRIS KASTEN		Customer Quality Approval (If Req'd)		
Part Name / Description RETAINER WIRE HARNESS TAPE ON		Other supplier approval by (If Req'd)		Other Approval (If Req'd)		
Supplier / Plant ELGIN DIE MOLD CO.		Supplier Code		Other Approval Date (If Req'd)		

Core team Members

BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (Q.C.)

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics		Special Char. Class.	Methods					Reaction Plan
			No.	Product		Process	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
			DIM.A		IN-PROCESS INSPECTION - ENTIRE PART	FLASH ALLOWANCE PER SPECS ON DRW., NO VOIDS, SHORTS OR BURNS	VISUAL INSPECTION - ENTIRE PART	1 SHOT	SU & SC (EVERY 8 HRS.)	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
			DIM.B		IN-PROCESS INSPECTION - ENTIRE PART	PART COLOR: NATURAL - VERIFY CORRECT PART NUMBER WITH CORRECT COLOR AND LABEL	VISUAL INSPECTION - ENTIRE PART	1 SHOT	SU & SC (EVERY 8 HRS.)	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
	ANNUAL LAYOUT	INSPECTION EQUIPMENT	ALL DIMS	ALL ON DRAWING	FULL LAYOUT OF PART	ACCORDING TO DRAWING	AS REQUIRED	AS REQUIRED	PER CUSTOMER ANNUAL VALIDATION REQUIREMENTS	DIMENSIONAL REPORT	SUBMIT WITH DEVIATION.
6	PACKAGE PRODUCT				MOLDING	PER PROCEDURE 9.2 INTERNAL		EACH CARTON	EACH PRODUCTION RUN	PER DOCUMENT MD-15	CONTAIN PARTS; ISSUE NR.
7	MOVE PRODUCT TO FINAL AUDIT	OPERATOR	ALL CARTONS	PART NUMBER LU5T-14E042-FA RETAINER WIRE HARNESS TAPE ON	WAREHOUSE	PER PROCEDURE 9.2 INTERNAL AUDITS		EACH CARTON	EACH PRODUCTION RUN	FINAL AUDIT HOLD AREA	CORRECT PLACEMENT IN FINAL AUDIT AREA

Control Plan Category ☐ Prototype ☐ Pre-Launch ☒ Production	Key Contact Name CHRIS KASTEN	Date (Orig) 8/28/2020	Date (Rev) 4/17/2023	Page 4 of 5
Control Plan Number E-4-15-5	Key Contact Phone 847-464-0140	Customer Engineering Approval (If Req'd)		
Part Number LU5T-14E042-FA	Supplier / Plant Approval / Date CHRIS KASTEN	Customer Quality Approval (If Req'd)		
Part Name / Description RETAINER WIRE HARNESS TAPE ON	Other supplier approval by (If Req'd)	Other Approval (If Req'd)		
Supplier / Plant ELGIN DIE MOLD CO.	Supplier Code	Other Approval Date (If Req'd)		

Core team Members

BILL RUBA (PRESIDENT), JOHN KLEVER (ENGINEERING), CHRIS KASTEN (ENGINEERING), DIVYA PATEL (ENGINEERING), IRVING RODRIGUEZ (Q.C.)

Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Characteristics				Special Char. Class.	Methods					Reaction Plan
	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	No.	Product		Product / Process Specification / Tolerance	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
8	FINAL AUDIT INSPECTION					FLASH ALLOWANCE PER SPECS ON DWG.	VISUAL INSPECTION - ENTIRE PART	40 RANDO M	EACH PRODUCTION RUN	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
	VISUAL INSPECTION		A			IN-PROCESS INSPECTION - ENTIRE PART	VISUAL INSPECTION - ENTIRE PART	40 RANDO M	EACH PRODUCTION RUN	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
			B			NO BURNS	VISUAL INSPECTION - ENTIRE PART	40 RANDO M	EACH PRODUCTION RUN	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
			C			NO VOIDS	VISUAL INSPECTION - ENTIRE PART	40 RANDO M	EACH PRODUCTION RUN	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
			D			NO SHORTS	VISUAL INSPECTION - ENTIRE PART	40 RANDO M	EACH PRODUCTION RUN	DOCUMENT (REF W.I. FORM E-20)	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
						PER PROCEDURE 9.2 (INTERNAL)	VISUAL INSPECTION - ENTIRE PART	ALL CARTO NS	EACH PRODUCTION RUN	QC-20 FORM OR IQMS	ADJUST PROCESS; CONTAIN PARTS; ISSUE NR.
						(DOCUMENTED AS LAST IN-PROCESS INSPECTION OF RUN)					

Control Plan Category ☐ Prototype ☐ Pre-Launch ☒ Production		Key Contact Name CHRIS KASTEN		Date (Orig) 8/28/2020	Date (Rev) 4/17/2023	Page 5 of 5
Control Plan Number E-4-15-5		Key Contact Phone 847-464-0140		Customer Engineering Approval (If Req'd)		
Part Number LU5T-14E042-FA		EOL A1		Customer Quality Approval (If Req'd)		
Part Name / Description RETAINER WIRE HARNESS TAPE ON		Supplier / Plant Approval / Date CHRIS KASTEN		Date (If Req'd)		
Supplier / Plant ELGIN DIE MOLD CO.		Other supplier approval by (If Req'd)		Date (If Req'd)		
Supplier Code		Other Approval Date (If Req'd)		Date (If Req'd)		

Core team Members

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Manufacturing plant maintains listing of all Gage Numbers.

Part / Proc #	Process Name / Operation description	Machine, Device, Jig, Tools For Mfg.	Characteristics		Special Char. Class.	Methods					Reaction Plan
			No.	Product		Process	Evaluation / Measurement Technique	Sample Size	Sample Freq.	Control Method	
9	MOVE ACCEPTED MATERIAL TO STORAGE AREA	LIFT TRUCK - SHIPPING PERSONELL		PART NUMBER LU5T-14E042-FA RETAINER WIRE HARNESS TAPE ON		WAREHOUSE	PER SHIPPING WORK INSTRUCTIONS	ALL APPROVED CARTONS	EACH PRODUCTION RUN	IQMS INVENTORY	CONTAIN PARTS; ISSUE NR.
10	STORAGE OF FINISHED GOODS	LIFT TRUCK - PALLETS		PART NUMBER LU5T-14E042-FA RETAINER WIRE HARNESS TAPE ON		WAREHOUSE	PER SHIPPING WORK INSTRUCTIONS	ALL APPROVED CARTONS	EACH PRODUCTION RUN	IQMS INVENTORY	CONTAIN PARTS; ISSUE NR.
11	PREPARE PRODUCT FOR SHIPMENT	WOOD PALLETS - PLASTIC PALLETS - SHRINK WRAP - TAPE		PART NUMBER LU5T-14E042-FA RETAINER WIRE HARNESS TAPE ON		WAREHOUSE	PER SHIPPING WORK INSTRUCTIONS	PROPER SHIPPING MEDIUM PER SPECIFIC CUSTOMER	EACH SHIPMENT	IQMS PACKING SLIP	RE-PACK SHIPMENT IF NOT TO REQUIREMENTS, ISSUE NR.
12	SHIP TO CUSTOMER			PART NUMBER LU5T-14E042-FA RETAINER WIRE HARNESS TAPE ON		WAREHOUSE	PER SHIPPING WORK INSTRUCTIONS	PER CUSTOMER REQUIREMENTS	EACH SHIPMENT	IQMS BILL OF LADING FOR CORRECT SHIPPING ADDRESS	RE-PACK SHIPMENT IF NOT TO REQUIREMENTS, ISSUE NR.

PART INSPECTION REPORT

ELGIN DIE MOLD CO.

Part Certification

Part Number LU5T-14E042-FA		ECL A1	Date 7/13/20	Part Name RETAINER WIRE HARNESS TAPE ON	
Type of Tool ☒ PRODUCTION ☐ PRE-PRODUCTION ☐ PROTOTYPE			Part Wt. (1 pc) With carrier (term) 0.0008 Kilograms Loose 0.0008 Kilograms		
			☐ NEW TOOL ☐ REVISED TOOL ☐ TRANSFER TOOL ☒ OTHER		
Purchased Part: ☐ Yes ☒ No					
Die Master Mold No. (Components) or Master Board No. (Harnesses) if applicable E-4-15-5					
Tool No. E-4-15-N4			No. of Tool Cavities (Components) 32		Cav. # 65 THRU 96
Tool / Part Supplier ELGIN DIE MOLD CO.					
Material CELCON M90, NATURAL			Material Spec WSK-M4D635-A2		Max % Regrind 25.00% Actual % Regrind 25.00%
Report Requested By JOHN KLEVER					
Type of Inspection ☒ Complete ☐ Partial			Type of drawing ☒ Product Drawing ☐ Tool Drawing		
Drawing is being changed by Product Engineering per ECN No.					
Additional Eng. Changes N/A					Chg Level

[illegible]

Inspection Source Company Name
ELGIN DIE MOLD CO.

Inspected by
IRVING RODRIGUEZ

Inspector Supervisor
CHRIS KASTEN

Approved by
JOHN KLEVER

Title
FIRST PIECE INSPECTOR

Title	PROJECT MANAGER
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Title: **ENGINEERING DIRECTOR**

Inspection Report Date	4/17/2023
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Date	4/17/2023
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Date	4/17/2023
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PART INSPECTION REPORT

ELGIN DIE MOLD CO.

Part Certification

Part Number LU5T-14E042-FA	ECL A1	Date 7/13/20	Part Name RETAINER WIRE HARNESS TAPE ON	
Type of Tool ☒ PRODUCTION ☐ PRE-PRODUCTION ☐ PROTOTYPE		Part Wt. (1 pc) With carrier (term) 0.0008 Kilograms Loose 0.0008 Kilograms ☐ NEW TOOL ☐ REVISED TOOL ☐ TRANSFER TOOL ☒ OTHER		
Purchased Part: ☐ Yes ☒ No				
Die Master Mold No. (Components) or Master Board No. (Harnesses) if applicable E-4-15-5				
Tool No. E-4-15-N4		No. of Tool Cavities (Components) 32		Cav. # 65 THRU 96
Tool / Part Supplier ELGIN DIE MOLD CO.				
Material CELCON M90, NATURAL		Material Spec WSK-M4D635-A2	Max % Regrind 25.00%	Actual % Regrind 25.00%
Report Requested By JOHN KLEVER				
Type of Inspection ☒ Complete ☐ Partial		Type of drawing ☒ Product Drawing ☐ Tool Drawing		
Drawing is being changed by Product Engineering per ECN No.				
Additional Eng. Changes N/A			Chg Level	

[illegible]

PART INSPECTION REPORT

ELGIN DIE MOLD CO.

Part Certification

Part Number LU5T-14E042-FA		ECL A1	Date 7/13/20	Part Name RETAINER WIRE HARNESS TAPE ON	
Type of Tool ☒ PRODUCTION ☐ PRE-PRODUCTION ☐ PROTOTYPE		Part Wt. (1 pc) With carrier (term) 0.0008 Kilograms Loose 0.0008 Kilograms			
		☐ NEW TOOL ☐ REVISED TOOL ☐ TRANSFER TOOL ☒ OTHER			
Purchased Part: ☐ Yes ☒ No					
Die Master Mold No. (Components) or Master Board No. (Harnesses) if applicable E-4-15-5					
Tool No. E-4-15-N4		No. of Tool Cavities (Components) 32		Cav. # 65 THRU 96	
Tool / Part Supplier ELGIN DIE MOLD CO.					
Material CELCON M90, NATURAL		Material Spec WSK-M4D635-A2		Max % Regrind 25.00%	Actual % Regrind 25.00%
Report Requested By JOHN KLEVER					
Type of Inspection ☒ Complete ☐ Partial			Type of drawing ☒ Product Drawing ☐ Tool Drawing		
Drawing is being changed by Product Engineering per ECN No. _____					
Additional Eng. Changes N/A				Chg Level	

[illegible]

Inspection Source Company Name
ELGIN DIE MOLD CO.

Inspected by
IRVING RODRIGUEZ

Inspector Supervisor
CHRIS KASTEN

Approved by
JOHN KLEVER

Title
FIRST PIECE INSPECTOR

Title	PROJECT MANAGER
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Title
ENGINEERING DIRECTOR

Inspection Report Date	4/17/2023
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Date	4/17/2023
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PART INSPECTION REPORT

ELGIN DIE MOLD CO.

Part Certification

Part Number LU5T-14E042-FA		ECL A1	Date 7/13/20	Part Name RETAINER WIRE HARNESS TAPE ON	
Type of Tool ☒ PRODUCTION ☐ PRE-PRODUCTION ☐ PROTOTYPE			Part Wt. (1 pc)		
			With carrier (term) 0.0008 Kilograms Loose 0.0008 Kilograms		
			☐ NEW TOOL ☐ REVISED TOOL ☐ TRANSFER TOOL ☒ OTHER		
Purchased Part: ☐ Yes ☒ No					
Die Master Mold No. (Components) or Master Board No. (Harnesses) if applicable E-4-15-5					
Tool No. E-4-15-N4			No. of Tool Cavities (Components) 32		Cav. # 65 THRU 96
Tool / Part Supplier ELGIN DIE MOLD CO.					
Material CELCON M90, NATURAL		Material Spec WSK-M4D635-A2		Max % Regrind 25.00%	Actual % Regrind 25.00%
Report Requested By JOHN KLEVER					
Type of Inspection ☒ Complete ☐ Partial			Type of drawing ☒ Product Drawing ☐ Tool Drawing		
Drawing is being changed by Product Engineering per ECN No. Chg Level					
Additional Eng. Changes N/A					

[illegible]

Inspection Source Company Name
ELGIN DIE MOLD CO

Inspected by
IRVING RODRIGUEZ

Inspector Supervisor
CHRIS KASTEN

Approved by
JOHN KLEVER

Title
FIRST PIECE INSPECTOR

Title
PROJECT MANAGER

Title
ENGINEERING DIRECTOR

Inspection Report Date	4/17/2023
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Date	4/17/2023
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Date	4/17/2023
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ELGIN DIE MOLD CO.

PROCESS CAPABILITY CERTIFICATION REPORT

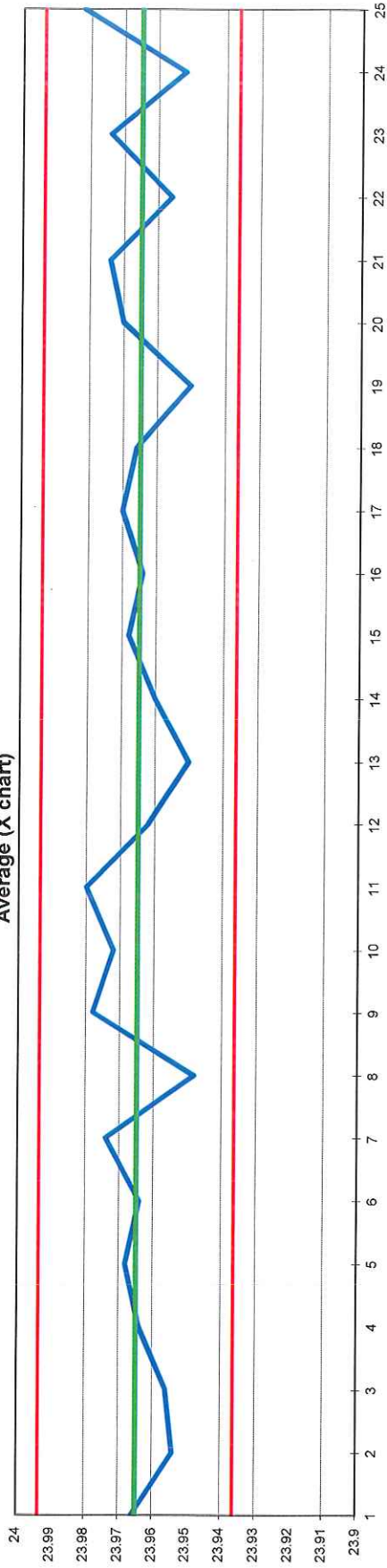
Part Certification

Two sided spec (bilateral)	One sided (MIN)	One sided (MAX)	Number of readings per subgroup	5
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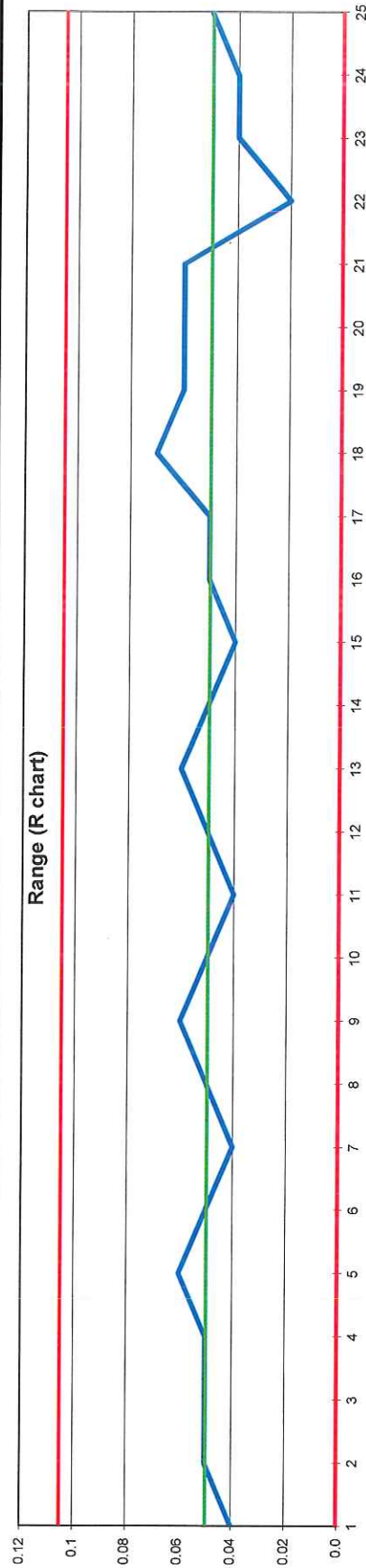
LOCATION	Plant	ELGIN DIE MOLD CO.	Dept	QUALITY	Date	4/17/2023
PART	Part number	LU5T-14E042-FA	Part description	RETAINER WIRE HARNESS TAPE ON		
TOOL	Drawing number	LU5T-14E042-FA	Eng. chg. level	A1		
	Tool number	E-4-15-N4	# Cavities	32		
DIMENSION	Description	DIM.# 17	Units	MM		
	SPEC	24.1	PLUS	0.35		
	Lwr Spec	23.75	NOMINAL	24.45		
			UPR Spec	24.45		

PROCESS INFORMATION			
Significant trends of data points:	X Chart	R Chart	
Increasing RUN LENGTH	4	3	
HOW MANY RUNS	1	2	
Decreasing RUN LENGTH	3	3	
HOW MANY RUNS	2	3	
Out of control limits	0	0	
Consecutive data points above avg.	3	6	
Consecutive data points below avg.	3	3	

Average (X chart)



Range (R chart)



PROCESS CAPABILITY CERTIFICATION REPORT

Filename: E-4-15-5 PPAP Submission / 12 PCS DIM.17
Page 2 of 2

ELGIN DIE MOLD CO.

Part Certification

REPEATABILITY AND REPRODUCIBILITY ANALYSIS REPORT

NON DESTRUCTIVE TEST

☒ Using TOLERANCE method
☐ Using Part to Part variation

PLEASE SPECIFY THE FOLLOWING PARAMETERS AND COMPLETE THE FORM ACCORDINGLY

PARAMETERS ARE

K ₁	Number of Trials	Must be either 2 or 3	3	OK
K ₂	Number of Operators	Must be either 2 or 3	3	OK
K ₃	Number of Parts	Can be any value between 2 and 10	10	OK

Part number	LU5T-14E042-FA	Part name	RETAINER WIRE HARNESS TAPE ON	Plant	ELGIN DIE MOLD CO.
Characteristic	DIM.# 17	Gage number	0010384	Coord by	CHRIS KASTEN
Tolerance	0.7	Gage name	DIGITAL CALIPER	Phone #	847-464-0140
Tolerance (Tol)	0.7	Gage ECL/revision	N/A	Date	4/17/2023

OPERATOR	1	2	3	4	5	6	7	8	9	10	RESULTS	AVG
A	23.99	23.96	23.76	23.93	23.99	23.93	23.96	23.76	23.97	24.0	A ₁	23.92500
	24.01	23.98	23.75	23.98	23.97	23.95	23.96	23.73	23.99	24.0	A ₂	23.93200
	23.98	23.97	23.78	23.99	23.98	23.93	23.99	23.75	23.93	23.95	A ₃	23.92500
Average	23.99333	23.97	23.76333	23.96667	23.98	23.93667	23.97	23.74667	23.96333	23.98333	$\bar{X}_A$	23.92733
Range	0.03	0.02	0.03	0.06	0.02	0.02	0.03	0.03	0.06	0.05	R _A	0.03500
B	23.98	23.96	23.77	23.99	24.0	23.93	23.98	23.74	23.93	23.96	B ₁	23.92400
	23.99	23.96	23.76	23.96	24.0	23.95	23.95	23.75	23.97	23.97	B ₂	23.92600
	23.95	23.95	23.79	24.0	23.94	24.0	23.93	23.75	23.96	23.98	B ₃	23.92500
Average	23.97333	23.95667	23.77333	23.98333	23.98	23.96	23.95333	23.74667	23.95333	23.97	$\bar{X}_B$	23.92500
Range	0.04	0.01	0.03	0.04	0.06	0.07	0.05	0.01	0.04	0.02	R _B	0.03700
C	23.98	23.98	23.78	24.0	23.98	23.95	24.0	23.74	23.94	23.93	C ₁	23.92800
	23.99	23.95	23.75	23.96	23.97	23.95	23.94	23.75	23.99	23.97	C ₂	23.92200
	24.01	23.98	23.76	23.94	23.98	23.98	24.0	23.72	23.95	23.97	C ₃	23.92900
Average	23.99333	23.97	23.76333	23.96667	23.97667	23.96	23.98	23.73667	23.96	23.95667	$\bar{X}_C$	23.92633
Range	0.03	0.03	0.03	0.06	0.01	0.03	0.06	0.03	0.05	0.04	R _C	0.03700
Part Avg	23.98667	23.95556	23.76667	23.97222	23.97889	23.95222	23.96778	23.74333	23.95889	23.97	$\bar{X}_{PART}$	23.92622
Part Range											R _{PART}	0.24333
$\bar{R} = R_A + R_B + R_C / \text{No of operators} = 0.03500 + 0.03700 + 0.03700 / 3$												$\bar{R} = 0.03633$
$\bar{X}_{DIFF} = [\text{Max}(\bar{X}_{ABC}) - \text{Min}(\bar{X}_{ABC})] = 23.92733 - 23.92500$												$\bar{X}_{DIFF} = 0.00233$
$UCL_R = \bar{R} + D_4 = 0.03633 + 2.580$												$UCL_R = 0.09374$
$LCL_R = \bar{R} - D_3 = 0.03633 - 0.000$												$LCL_R = 0.00000$

OPERATOR	NAME	NOTE: The Total Tolerance Method should be used when the gage is used for product release. When out of control conditions exist, analyze the data for Gage acceptability. The total variation method is generally used for variation reduction activities.
A	IRVING RODRIGUEZ	
B	OLIVIA DOMINGUEZ	
C	LOUISA HERNANDEZ	

GOOD UNTIL GAGE ECL/revision CHANGE

FROM DATA SHEET:	$\bar{R} = 0.03633$	$\bar{X}_{DIFF} = 0.00233$	$R_{PART} = 0.24333$
Measurement Unit Analysis	Based on the TOLERANCE Method		
Repeatability - Equipment Variation (EV)	$EV = \bar{R} * K_1$ $EV = 0.02147$		
	Trials	K ₁	% EV = 100[EV/Tol] % EV = 3.07
	3	0.5908	
Reproducibility - Appraiser Variation (AV)	$AV = \sqrt{[(\bar{X}_{DIFF} * K_2)^2 - (EV^2 / nr)]}$ $AV = 0.00000$		
	Oper	K ₂	% AV = 100[AV/Tol] % AV = 0.00
	3	0.5231	
Repeatability & Reproducibility (R & R)	$R\&R = \sqrt{(EV^2 + AV^2)}$ $R\&R = 0.02147$		
	% R&R = 100[R&R/Tol] % R&R = 3.07		
Part Variation (PV)	$PV = R_{PART} * K_3$ $PV = 0.07655$		
	Parts	K ₃	% PV = 100[PV/Tol] % PV = 10.94
	10	0.3146	
Total Variation (TV)	$TV = \sqrt{(R\&R^2 + PV^2)}$ $TV = 0.07951$		
	$ndc = 1.41(PV/R\&R)$ $ndc = 5.02844503$ GAGE IS ACCEPTED All ranges OK		

ELGIN DIE MOLD CO.

Part Certification

REPEATABILITY AND REPRODUCIBILITY ANALYSIS REPORT

NON DESTRUCTIVE TEST

☒ Using TOLERANCE method
☐ Using Part to Part variation

PLEASE SPECIFY THE FOLLOWING PARAMETERS AND COMPLETE THE FORM ACCORDINGLY

PARAMETERS ARE

K ₁	Number of Trials	Must be either 2 or 3	3	OK
K ₂	Number of Operators	Must be either 2 or 3	3	OK
K ₃	Number of Parts	Can be any value between 2 and 10	10	OK

Part number	LU5T-14E042-FA	Part name	RETAINER WIRE HARNESS TAPE ON	Plant	ELGIN DIE MOLD CO.
Characteristic	DIM.# 17	Gage number	0010384	Coord by	CHRIS KASTEN
Tolerance	0.7	Gage name	DIGITAL CALIPER	Phone #	847-464-0140
Tolerance (Tol)	0.7	Gage ECL/revision	N/A	Date	4/17/2023

GAGE APPROVED, USE IT

Guidelines for acceptance of gage repeatability and reproducibility (%R&R):

UNDER 10% ERROR: Gage system OK

10% to 30% ERROR: May be acceptable based upon importance of application. Calculate "breakpoint" = $RPN \times (\% \text{ Gage R\&R}/100)$ and check that is less than 37.8 and (% Gage R&R) less than 30%. See next page for conclusion of usage.

OVER 30% ERROR: Gage system needs improvement. Identify the problems and have them corrected.

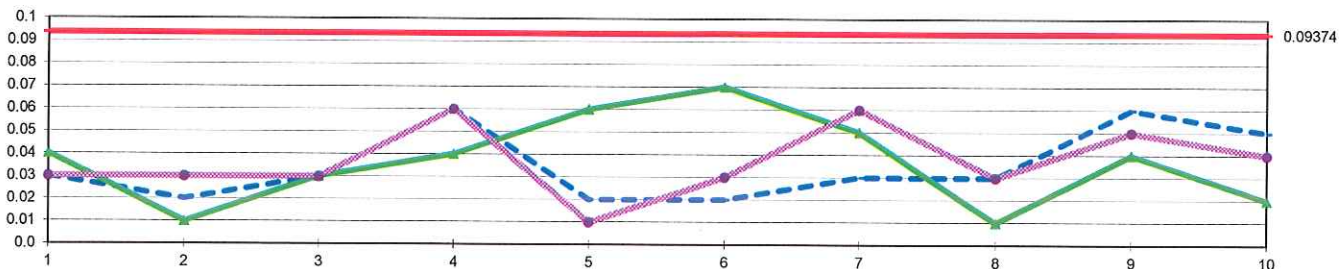
DETERMINE THE RISK PRIORITY NUMBER (RPN) FROM THE FMEA ASSOCIATED WITH THE DIMENSION BEING GAGED. TYPE THE RPN # UNDER THE RPN # FIELD PROVIDED (RIGHT) AND FOLLOW INSTRUCTION OF USAGE IN NEXT ROW:

BREAKPOINT	=	RPN #	x	%GRR/100
0.00	=	0.0	x	0.03067

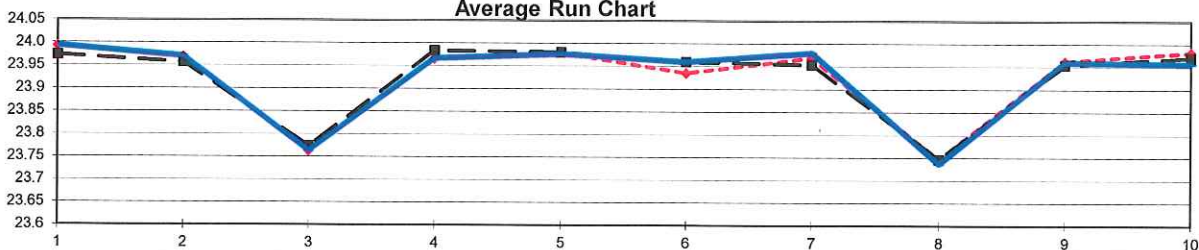
CONCLUSION IS ...

GAGE APPROVED, USE IT

Range Chart by operator



Average Run Chart



Notes:



ELGIN DIE MOLD CO.
14N002 PRAIRIE STREET
PINGREE GROVE IL 60140-6314
USA

CELANESE C/O A&R JEFFERSONVILLE - DC
Ticona Polymers
200 Logistics Avenue
JEFFERSONVILLE IN 47130
USA

Type 4 Certificate of Analysis

CELCON M90 CF2001 NATURAL A1

Customer Part No.: 10140
Formula No.: M90
Catalog: 20000114
Color No.: CF2001
Produced at: Bishop, TX, USA

Cert Issue Date: 08 Dec 2022
Qty Shipped: 19,841.400 LB
Order Item /date: 2637117 20 / 25 Apr 2022
Delivery Item/date: 87804623 900001 / 15 Dec 2022
Account #: 1060038
Customer PO No.: 14305-EDM
Rail car:

Batch 0001756277

In reference to the above, this is to advise you that this is a standard product and meets the following requirements:

SPECIFICATIONS: FORD WSK-M4D635-A2

BATCH RELEASE DATA		UoM	Value	Limit
Melt Flow Rate (MFR)	(ISO 1133-1, ASTM D1238)	g/10min	9.60	7.00 - 15.00
ANNUAL TESTS (REVISED ON)		UoM	Value	Limit
Density (04 Sep 2022)		g/cm ³	1.410	1.380 - 1.430
Tensile Stress at Yield (04 Sep 2022)		MPa	66.0	min. 60.0
INITIAL CHARACTERIZATION		UoM	Value	Limit
Flammability - FMVSS 302 (FMVSS302)		mm/min	24.0	max. 100.0
Heat Aged Izod Imp. Change, +/-		%	-3	-35 - 35
Heat Aged Tens. Str Change, +/-		%	9	-20 - 20
Notched Izod, Cold Temp, -40C		kJ/m ²	4.7	min. 3.5
Shear Modulus		MPa	1090.0	870.0 - 1310.0
DTUL @ 0.45 MPa		°C	157.0	min. 140.0
DTUL @ 1.8MPa		°C	99.0	min. 95.0
Strain at Break		%	58.00	min. 20.00
Flexural modulus		MPa	2453	min. 2400
Izod Notched Impact Strength		kJ/m ²	5.34	min. 4.00

COMMENTS

Flammability is performed on a 100x355x1mm (4x14x0.04 inch) plaque test specimen for characterization only, and does not replace a molded part. Meets FMVSS302. WSKM4D635a2 supercedes ESFM4D118A. Heat aging completed according to requirements of SAE J2642.

Standard lab conditions of 23°C used as appropriate per method.

RECEIVED

DEC 08 2022



ELGIN DIE MOLD CO.
14N002 PRAIRIE STREET
PINGREE GROVE IL 60140-6314
USA

CELANESE C/O A&R JEFFERSONVILLE - DC
Ticona Polymers
200 Logistics Avenue
JEFFERSONVILLE IN 47130
USA

Type 4 Certificate of Analysis

CELCON M90 CF2001 NATURAL A1

Customer Part No.: 10140
Formula No.: M90
Catalog: 20000114
Color No.: CF2001
Produced at: Bishop, TX, USA

Cert Issue Date: 06 Dec 2022
Qty Shipped: 19,841.400 LB
Order Item /date: 2637117 20 / 25 Apr 2022
Delivery Item/date: 87804623 900001 / 15 Dec 2022
Account #: 1060038
Customer PO No.: 14305-EDM
Rail car:

"Unless otherwise specified, testing is done by ISO and/or ASTM standard methods consistent with requirements of referenced customer material specification."

These test data are determined based on standard ISO and/or ASTM testing procedures.

POM Global Business Line

If you have questions regarding this letter, please call your Customer Service Team at 800-526-4960.



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Ticona LLC
Celanese Engineered Materials
5738 County Road #4
Bishop, TX 78343

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU
Expiry Date: 09 October 2023
Certificate Number: 1144.02-1



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Ticona LLC Celanese Engineered Materials

5738 County Road #4
Bishop, TX 78343
Terri Garza
361 584 6478

TESTING

Valid to: October 9, 2023

Certificate Number: L1144.02-1

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Ash Content	ISO 3451-1 Method A (M) ISO 3451-2 Method A (M) ISO 3451-4 Method A (M)	Polymer	Furnace / Microwave Oven
Melt Flow Rate / Melt Volume Rate	ISO 1133 (M) ASTM D1238	Polymer	Melt Flow Indexer
Melting Point by DSC	ISO 11357-1 (M) ISO 11357-3 (M)	Polymer	Differential Scanning Calorimetry
Calculation of Color Differences	ASTM D2244	Polymer	Spectrophotometer
Visual Appraisal of Color	ASTM D1729	Polymer	Light Booth

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. L1144.02-1.
2. Methods listed with a parenthesized '(M)' are modified per authorization by the relevant Product Specialist.

R. Douglas Leonard Jr., VP, PILR SBU



Certificate of Registration

This certifies that the Quality Management System of

Elgin Die Mold Company

14N002 Prairie Street
Pingree Grove, Illinois, 60140-6314, United States

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

IATF 16949:2016

Scope of Registration:

Manufacture and assembly of plastic injection molded parts.

Exclusions: Product Design

IATF Certificate Number: 0414398
Certificate Number: 51381-TS8
Certificate Issue Date: 30-JUL-2021
Registration Date: 29-JUL-2021
Expiration Date *: 28-JUL-2024



A handwritten signature in black ink, reading "Jennifer Morecraft".

Jennifer Morecraft,
Senior Managing Director

NSF International Strategic Registrations

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

Authorized Registration and /or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.
*Company is audited for conformance at regular intervals. To verify registrations call (888) NSF-9000 or visit our web site at www.nsf-isr.org