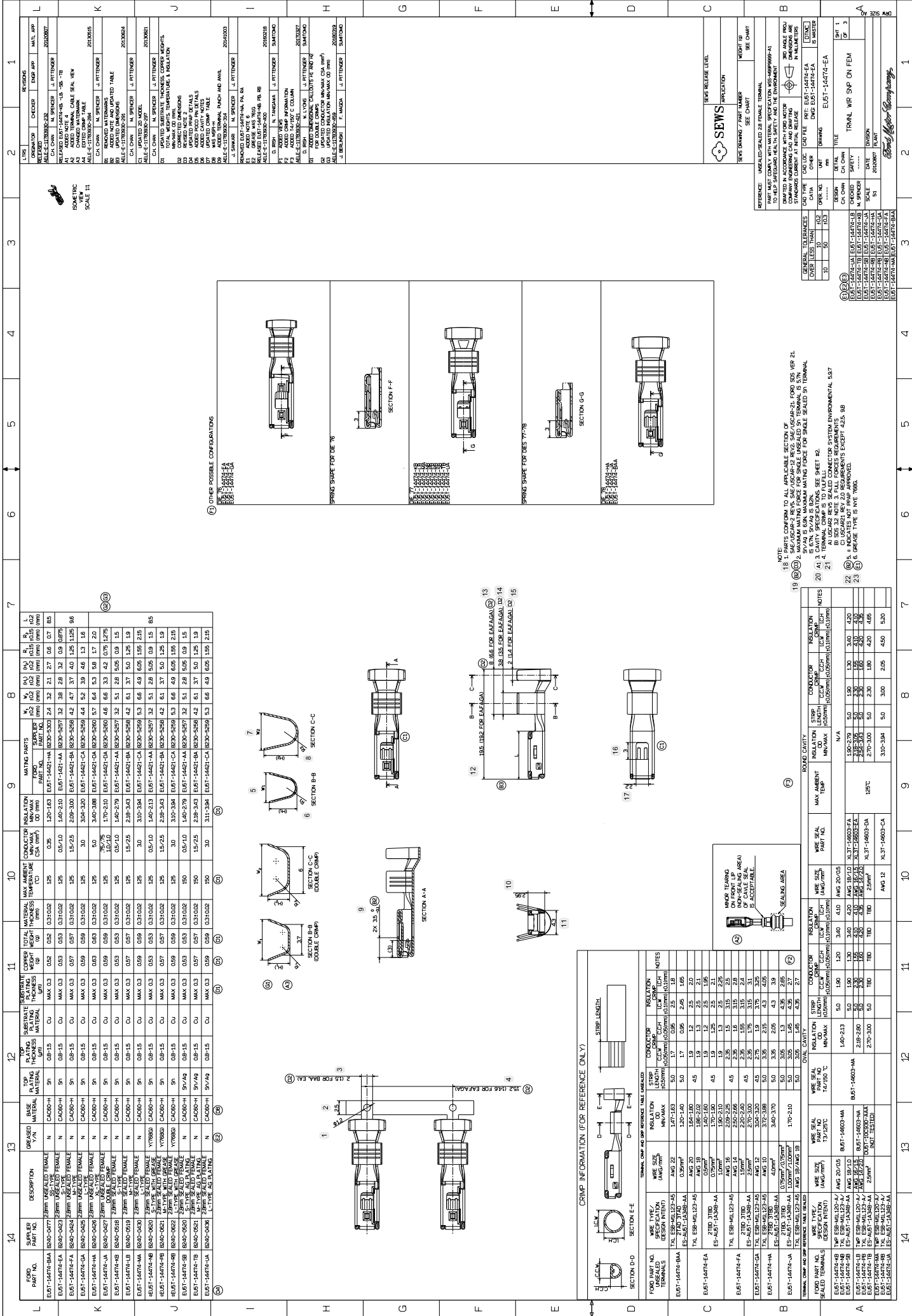
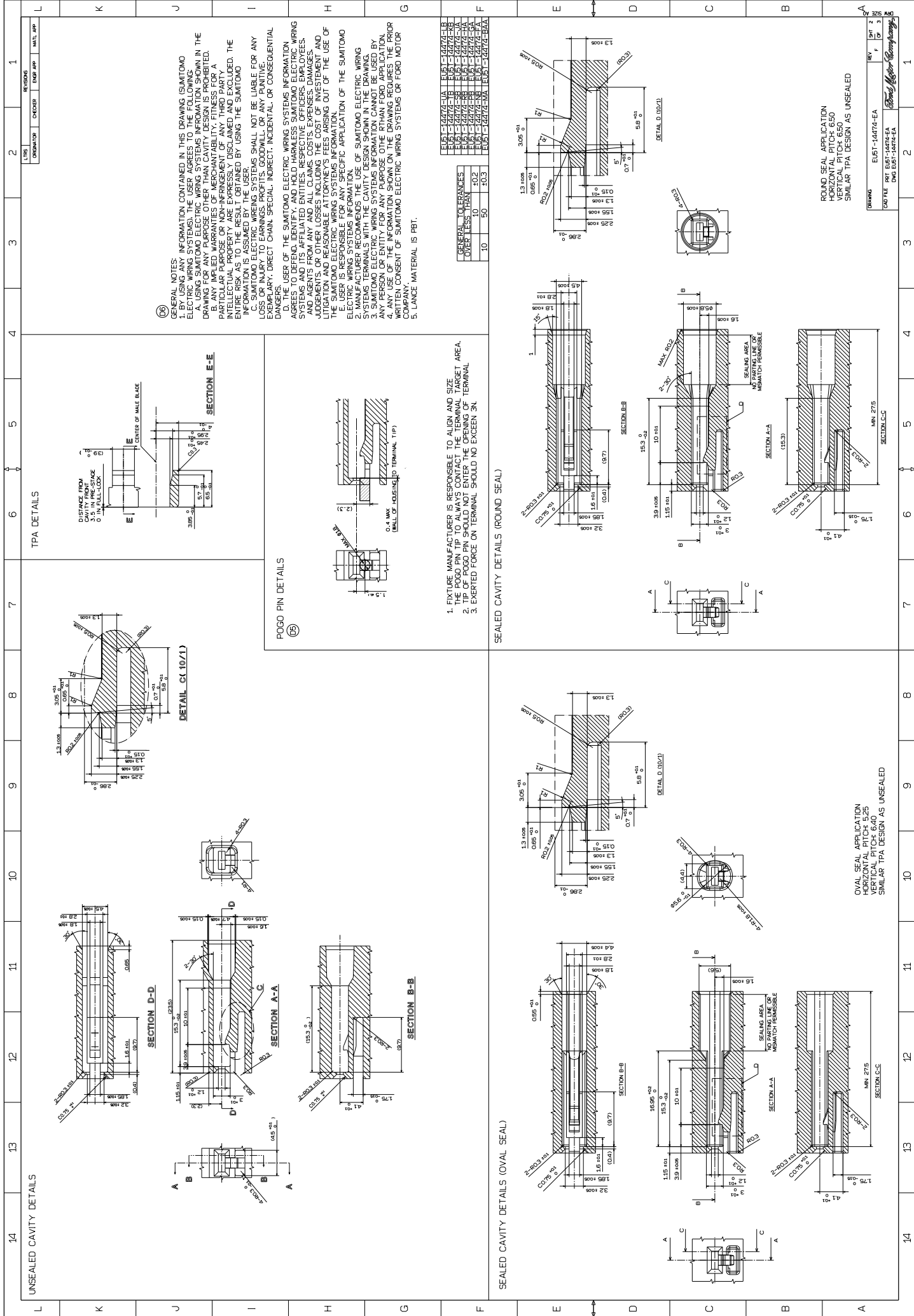






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Sumitomo Electric Wiring Systems, INC.-Components Division

PROCESS FLOW DIAGRAM

PRODUCT : Various Metal Stamping Parts
PROCESS: Metal Stamping

KEY CONTACT/DEPT. LOC. Debbie Gillenwater, L. Roth, QA Dept.
PHONE (270) 237-5419, X8563 & 8201 FAX (270) 237-4653

SUPPLIER APPROVALS:
General Plant Manager/Above: *[Signature]*

10.1.16 Updated Operation Description of 0050. E.Skaggs, K. Wilson, A. Meeks

10.1.16 Updated Key Characteristics of 0010, 0020, 0050, 0070, 0080, 0100, 0130, and 0160. E.Skaggs, K. Wilson, A. Meeks.

04.10.14 Revised set-up operation & characteristics D. Gillenwater

02.25.14 Revised terminology to match PFMEA/CP D. Gillenwater

12.13.13 Remove sections 110, 120 and 150. L.R. J.F. D.G.

5.12.11 Remove In-Line Terminal Clean/Supervisor Audit L. Roth, K. Chapman

8/31/06 Removed the name of cleaning sub-contractor D. Karleskint

4/1/05 GLOBAL QUALITY & ORG UPDATES D. Karleskint, K.

2/17/05 FORMAT CHANGES/UPDATED INFO D. Karleskint

2/9/00 ISSUED WITH FORMAT CHANGES T. DAY

6/04/99 ISSUED W/FORMAT CHANGES/UPDATES T. GRAVIL, D.

DATE CHANGE POINTS CORE/DEV. TEAM

ISSUE/REVISION HISTORY

Manufacturing Manager/Above: *[Signature]*
Quality Manager/Above: *[Signature]*

Customer Approval if required:

PART ASSEMBLY	PART AS RECD	OPERATION	INSPECTION	OPERATION/INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR
OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW						
0010	#	Raw Material Receiving (Metal Coils)							
		Reject							
0020	#	Raw Material Receiving Inspection							
		Packaging	KEY CHARACTERISTICS						
			Visual Comparison Against Packing List Shipping-Receiving						
			Red Tag Procedure						
			Abnormal Handling Procedures						
			Per Inspection Instruction Sheet-Receiving						

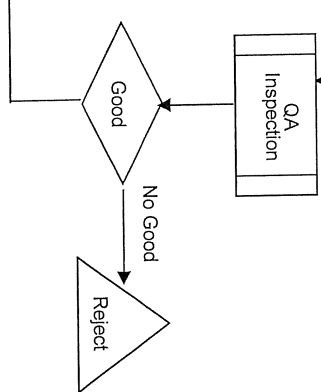
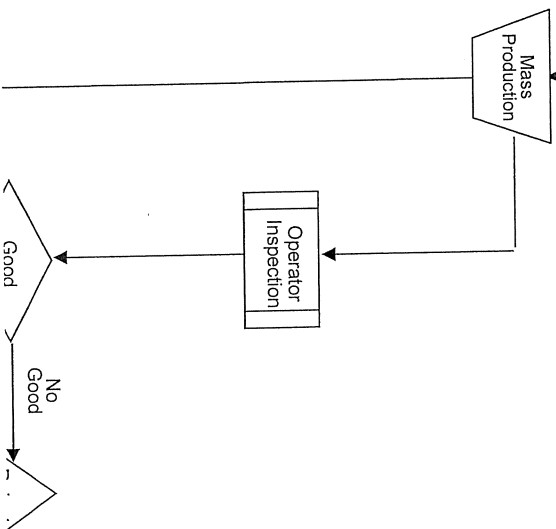
Sumitomo Electric Wiring Systems, INC.-Components Division

PART AS ASSTD	PART AS RECD	OPERATION	INSPECTION	OPERATION/ INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR
OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW				KEY CHARACTERISTICS		
		Identification Visual Inspection Characteristics	Reject Deliver to Raw Material Storage				Per Inspection Instruction Sheet-Receiving Per Inspection Instruction Sheet-Receiving Per Inspection Instruction Sheet-Receiving Red Tag Procedure Abnormal Handling Procedures		
0030		Raw Material Storage	Raw Material Storage				Per Raw Material Lot Control Sheet		
0040		Metal Stamping Loading Raw Material	Deliver to Metal Stamping Area				Per Raw Material Lot Control Sheet Per Shop Order and Barcode confirmation		

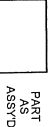
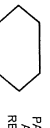
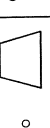
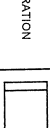
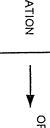
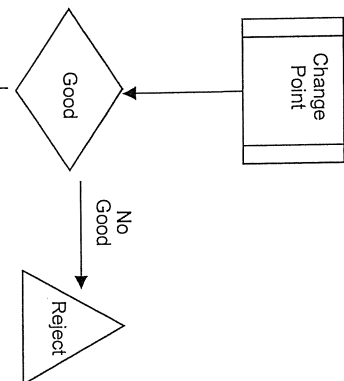
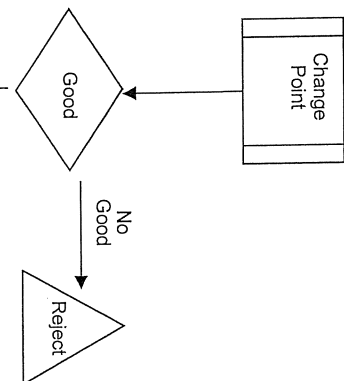
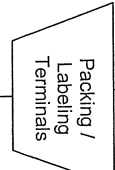
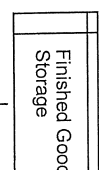
Sumitomo Electric Wiring Systems, INC.-Components Division

OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW					KEY CHARACTERISTICS	
PART AS ASSY/D	PART AS RECD	OPERATION	INSPECTION	OPERATION/INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR
0050		Metal Stamping Die/Machine Set-up Machine/Die PM Raw Material Machine Number Tool / Die Number Safety Checks	Machine Set-Up						Per Shop Order & Barcode scanning Per Maintenance Schedule Per Shop Order & Barcode scanning Per Production Schedule Per Shop Order Per Daily Machine Check Per Pressline Checksheet Per Material Straightner set-up Per Raw Material Vision set-up Per In-Line Inspection Set-Up and /or Vision System Set-up Per Winder Set-up Sheet
0060		Manufacturing Initial Inspection (Start Up) Material Straightner Raw Material Vision System In-Line / Vision Inspection System Winder Set-Up	Initial Inspection-Mfg.						# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Sheets

Sumitomo Electric Wiring Systems, INC.-Components Division

 PART AS STD	 PART AS RECD	 OPERATION	 INSPECTION	 OPERATION/INSPECTION	 STORAGE	 DELAY	 TRANSPORTATION	 OPERATION STEP	 OPERATOR
OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW				KEY CHARACTERISTICS		
0070	#	Quality Assurance Inspection (Mass Production)					# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Sheets Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure Abnormal Handling Procedures		
0080		Metal Stamping Production Checks (Manufacturing)					# Part Appearance/Dimension/Function per Visual Inspection and Terminal Inspection Sheets # Part Appearance/Dimension/Function per Visual Inspection Sheets Stop Production- Make Adjustments, Reverify or Die Sent to Maintenance		

Sumitomo Electric Wiring Systems,INC.-Components Division

OPER #	CI #	OPERATION DESCRIPTION	PROCESS FLOW					KEY CHARACTERISTICS		
PART AS ASSYD	PART AS RECD	OPERATION	INSPECTION	OPERATION/INSPECTION	STORAGE	DELAY	TRANSPORTATION	OPERATION STEP	OPERATOR	
								Abnormal Handling Procedures Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure		
0090		QA / Set Up Critical Defect Inspection Prior to Change Point						# Part Appearance/Dimension/Function per Global Quality Standard Per Red Tag Procedure Per Defective Terminal Procedure, Backtrack & Recall Procedure		
0100		Finished Product Packing / Labeling						Per Operator Check Sheet Per Barcode Scanning System		
0130		Finished Goods Storage						Per ERP LX Electronic System		

Sumitomo Electric Wiring Systems,INC.-Components Division

 PART AND ASSEMBLY		 PART AND RECORD	 OPERATION	 INSPECTION	 OPERATION/INSPECTION	 STORAGE	 DELAY	 TRANSPORTATION	 OPERATION STEP	 OPERATOR		
OPER #	CI #	OPERATION DESCRIPTION			PROCESS FLOW						KEY CHARACTERISTICS	
0140		Warehouse Stock Assessment			Stock Assessment Finished Goods/Shipping Shipped to Customer						Per Weekly Stock Assessment Sheet	
0160		Shipping Finished Goods			Shipping Label PER ERP LX System							
0170		Annual Layouts			Part Layout						Per Customer Drawing/Request	

Sumitomo Electric Wiring Systems, Inc

Gage R&R Study

04/03/2019

Page 1 of 2

Study Date: 1/8/2019 12:00:00 AM

Company Part No.: Mold 268

Gage ID: 05476117

Part No.:

Gage Desc: 0 - 150 Caliper

Part Desc: HW09-RET-06F

Appraisers: 3

Trials: 3

Parts: 10

Characteristic: Length

Study Type:

Specification Limits: Min 19.7

Max 20.1

MSA Version: 4

☒ Approved

Pp (or Ppk) Target

6-Sigma Proc Variation

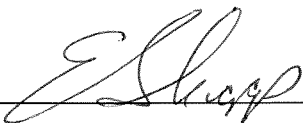
Appr A: T. Holland			Appr B: E Skaggs			Appr C: M Haddix		
1	20.1	20.09	20.09	20.09	20.09	20.09	20.09	20.09
2	20.03	20.02	20.02	20.02	20	20.03	20.03	20.03
3	19.68	19.67	19.67	19.67	19.68	19.68	19.68	19.67
4	20.08	20.07	20.07	20.07	20.07	20.08	20.07	20.07
5	19.81	19.81	19.8	19.8	19.81	19.81	19.8	19.8
6	20.04	20.03	20.03	20.03	20.04	20.05	20.05	20.04
7	20.09	20.09	20.09	20.09	20.1	20.08	20.09	20.1
8	19.64	19.64	19.65	19.63	19.63	19.64	19.63	19.64
9	20.08	20.08	20.08	20.07	20.08	20.07	20.08	20.08
10	19.67	19.67	19.68	19.68	19.68	19.68	19.67	19.68

	Std. Dev.	% Contribution	% TV	% Tol		
Repeatability (EV):	0.005317	0.1%	3.7%	8.0%	R bar:	0.009000
Reproducibility (AV):	0.001448	0.0%	1.0%	2.2%	UCL-R:	0.023220
Appraiser x Part (INT):					Study Variation:	0.143074
GRR:	0.005511	0.1%	3.9%	8.3%	Total Variation (TV):	0.143074
Part-to-Part (PV):	0.142968	99.9%	99.9%	99.7%	Tolerance/6 (Tol):	0.066667
number of distinct categories:			36.6	17.0		

* Limit of individual R's (range values). An (*) is used to identify those sets of measurements that have a Range value that exceeds the UCL-R limit value. Correct by repeating those readings using the same appraiser and part or discard the values and recalculate the study results and the value UCL-R.

Comments:

Approved By:



Date:

4/3/19

GRR Analysis Sheet

Study Date: 1/8/2019 12:00:00 AM Gage ID: 05476117 Gage Desc: 0 - 150 Caliper Appraisers: 3 Trials: 3 Study Type: Long-AIAG 4		Company Part No.: Mold 268 Part No.: Part Desc: HW09-RET-06F Characteristic: Length Specification Limits: 19.7 20.1																					
R bar A = 0.008000 X bar A = 19.919000 R bar B = 0.010000 X bar B = 19.916667 R bar C = 0.009000 X bar C = 19.920000 R bar = 0.0090000 X bar Diff = 0.003333		6 Sigma Process Variation: Pp (or Ppk) Target: Rp = 0.454443 Tol/6 = 0.066667																					
Measurement Unit Analysis		% Total Variation (TV)	% Tolerance																				
Repeatability - Equipment Variation (EV) $EV = R \text{ bar} \times K1$ $= 0.005317$ <table border="1" style="margin-left: 20px;"> <tr><td>Trials</td><td>K1</td></tr> <tr><td>2</td><td>0.8862</td></tr> <tr><td>3</td><td>0.5908</td></tr> </table>		Trials	K1	2	0.8862	3	0.5908	$\% EV = 100 [EV / TV]$ $= 3.7\%$	$\% EV = 100 [EV / (Tol / 6)]$ $= 8.0\%$														
Trials	K1																						
2	0.8862																						
3	0.5908																						
Reproducibility - Appraiser Variation (AV) $AV = \sqrt{[(X \text{ bar Diff} \times K2)^2 - (EV^2 / n \times r)]}$ $= 0.001448$ <table border="1" style="margin-left: 20px;"> <tr><td>Appraisers</td><td>2</td><td>3</td></tr> <tr><td>K2</td><td>0.7071</td><td>0.5231</td></tr> </table> Note: If a negative value is calculated under the square root sign, AV defaults to zero. <table border="1" style="margin-left: 20px;"> <tr><td>n = number of parts</td></tr> <tr><td>r = number of trials</td></tr> </table>		Appraisers	2	3	K2	0.7071	0.5231	n = number of parts	r = number of trials	$\% AV = 100 [AV / TV]$ $= 1.0\%$	$\% AV = 100 [AV / (Tol / 6)]$ $= 2.2\%$												
Appraisers	2	3																					
K2	0.7071	0.5231																					
n = number of parts																							
r = number of trials																							
Repeatability and Reproducibility (GRR) $GRR = \sqrt{(EV^2 + AV^2)}$ $= 0.005511$		$\% GRR = 100 [GRR / TV]$ $= 3.9\%$	$\% GRR = 100 [GRR / (Tol / 6)]$ $= 8.3\%$																				
Part Variation (PV) $PV = Rp \times K3$ $= 0.142968$	<table border="1"> <tr><td>Parts</td><td>K3</td></tr> <tr><td>2</td><td>0.7071</td></tr> <tr><td>3</td><td>0.5231</td></tr> <tr><td>4</td><td>0.4467</td></tr> <tr><td>5</td><td>0.4030</td></tr> <tr><td>6</td><td>0.3742</td></tr> <tr><td>7</td><td>0.3534</td></tr> <tr><td>8</td><td>0.3375</td></tr> <tr><td>9</td><td>0.3249</td></tr> <tr><td>10</td><td>0.3146</td></tr> </table>	Parts	K3	2	0.7071	3	0.5231	4	0.4467	5	0.4030	6	0.3742	7	0.3534	8	0.3375	9	0.3249	10	0.3146	$\% PV = 100 [PV / TV]$ $= 99.9\%$	$\% PV = 100 [PV / (Tol / 6)]$ $= 99.7\%$
Parts	K3																						
2	0.7071																						
3	0.5231																						
4	0.4467																						
5	0.4030																						
6	0.3742																						
7	0.3534																						
8	0.3375																						
9	0.3249																						
10	0.3146																						
		In MSA4, for % Tolerance, $PV = \text{SQRT}[(Tol / 6)^2 - (GRR)^2]$																					
		$ndc = 1.41(PV/GRR)$ $= 36.6$	$ndc = 1.41(PV/GRR)$ $= 17.0$																				
Total Variation (TV) $TV = \sqrt{(GRR^2 + PV^2)}$ $= 0.143074$		If the 6 sigma process variation is known, then TV $= [6 \text{ sigma process variation}] / 6.00$ and $PV = \text{SQRT}[(TV^2) - (GRR)^2]$.																					



Production Part Approval Dimensional Test Results

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS	PART NUMBER: 8240-0518
SUPPLIER/VENDOR CODE:	PART NAME: TERWUS280FM-SN1
NAME OF INSPECTION FACILITY:	DESIGN RECORD CHANGE LEVEL: EU5T-14474-EA G3 03/19/18
Sumitomo Electric Wiring Systems Plt. 5	ENGINEERING CHANGE DOCUMENTS NA

ITEM	DIMENSION / SPECIFICATION		SPECIFICATION / LIMITS		TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)					OK	NOT OK
1	1.20		-0.20	0.20	1/29/20	5	1.22	1.22	1.23	1.22	1.22	O	
2	2.50		-0.20	0.20			2.50	2.50	2.50	2.50	2.50	O	
3	2.00		-0.20	0.20			2.02	2.02	2.02	2.02	2.02	O	
4	15.20		-0.30	0.30			15.20	15.21	15.20	15.20	15.20	O	
5	3.20		-0.20	0.20			3.12	3.11	3.11	3.11	3.11	O	
6	0.90		-0.20	0.20			0.85	0.89	0.89	0.84	0.90	O	
7	5.10		-0.20	0.20			5.00	5.01	5.01	5.02	5.02	O	
8	1.50		-0.20	0.20			1.52	1.43	1.44	1.43	1.39	O	
9	3.50		-0.20	0.20			3.49	3.49	3.49	3.49	3.50	O	
	3.50		-0.20	0.20			3.45	3.49	3.45	3.45	3.47	O	
10	2.95		-0.20	0.20			2.94	2.94	2.94	2.94	2.94	O	
11	4.30		-0.20	0.20			4.26	4.26	4.26	4.26	4.26	O	
12	19.50		-0.30	0.30			19.50	19.52	19.49	19.49	19.49	O	
13	8.50		-0.20	0.20			8.45	8.46	8.45	8.48	8.45	O	
14	3.80		-0.20	0.20			3.83	3.82	3.82	3.83	3.84	O	
15	2.00		-0.20	0.20			1.94	1.94	1.94	1.94	1.94	O	
16	3.00		-0.20	0.20			3.04	3.04	3.04	3.04	3.04	O	
17	2.20		-0.20	0.20			2.21	2.21	2.20	2.20	2.20	O	
	NOTE: 1. PARTS CONFORM TO ALL APPLICABLE SECTION OF SAE/USCAR-2 REV5, SAE/USCAR-12 REV2, SAE/USCAR-21, FORD SDS VER 21.												
18	2. MAXIMUM MATING FORCE FOR SINGLE UNSEALED Sn TERMINAL IS 5.7N Sn/Ag IS 6.9N. MAXIMUM MATING FORCE FOR SINGLE SEALED Sn TERMINAL IS 6.7N. Sn/Ag IS 8.2N. 3. CAVITY SPECIFICATIONS, SEE SHEET #2. 4. TERMINAL CRIMP IS TO FULFILL: A) USCAR2 REV5 SEALED CONNECTOR SYSTEM ENVIRONMENTAL 5.9.7 B) SDS 3.2 NOTE 3, FULL FORCES REQUIREMENTS C) USCAR21 REV 2.0 REQUIREMENTS EXCEPT 4.2.5, 9.B 5. * INDICATES NOT PPAP APPROVED. 6. GREASE TYPE IS NYE 768G.												
19						correct							
20						correct							
21						correct							
22						correct							
23						correct							

Blanket statements of conformance are unacceptable for any test results.

MARCH
2006

CFG-1003

SIGNATURE	TITLE	DATE
Robin Casada	PPAP/SQA Leader	1/29/2020

MESSRS

No. 2-3F3567- 10 (6)

DATA OF INSPECTION

ORDER
SHINSHO CORPORATION NAGOYA SHITEN

COMMODITY TRCAG0 STRIP

DATE 2019-12-23

CUSTOMER
SUMITOMO ELECTRIC WIRING SYSTEMS, IN

SPECIFICATION					MANUFACTURING No.		SIZE OF ARTICLE		ORDER QUANTITY		MASS			
5-4255C TRCA60 H					2-63973		0.3 X 33. XCOIL							
TEST ITEM	TEST PIECE (mm)	TENSION TEST				HARD-NESS	SPRING LIMIT (T)	ELECT. CONDUCT % IACS	BENDING (T)	TIN (MICRO)		PEELING	BENDING (L)	
		5-LENGTH THICKNESS OR WIDTH	OUT DIA (mm)	TENSILE STRENGTH (N/MM ²)	YIELD STRENGTH (N/MM ²)					ELONGATION (%)	A			B
CHARGE No. N0701	LOT No. 60805 -1-1			630. MIN 680. MAX	MIN MAX	10. MIN 13.4 MAX	180 220	350 580	40 45.6	180 -0.6T	0.8 -1.5	GOOD	GOOD	180 -0.6T GOOD
	-1-2			660		13.2	201.0			GOOD	1.1 1.2	GOOD	GOOD	
APPEARANCE														
CHEMICAL COMPOSITION (%)		NI	SI	ZN	SN	CU								
REQUIREMENT	1.0 MIN 3.0 MAX	0.2 MIN 0.6 MAX	1.5 MIN 0.3 MAX											
CHARGE No. N0701	1.81	0.40	1.11	0.10	RE									
(6457)														
MEASUREMENT		GOOD												
SURFACE		GOOD												

KOBE STEEL, LTD. CHOFU PLANT QUALITY ASSURANCE SECTION

FUNCTION DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

Tested by/Date: Robin Casada 2/20/2020

PART Name/Desc: **TERWUS280FM-SN1**

Design Rec. Change level/date:

PART NO (s): **8240-0518**

EU5T-14474-EA G3 3/19/2018

Mold #: **TD103-S-SN1**

Eng. Change Documents: NA

TERMINAL INSERTION DATA

Specification:

7.0 N MAX

		2nd. Prog if Applicable
Sample#	DATA	
1	6.60	
2	6.10	
3	5.70	
4	6.50	
5	6.30	

Average	6.24	#DIV/0!
Min.	5.70	0.00
Max.	6.60	0.00

TERMINAL RETENTION DATA

Specification:

9.0 N MAX

		2nd. Prog if Applicable
Sample#	DATA	
1	5.90	
2	4.90	
3	4.70	
4	6.70	
5	6.90	

Average	5.82	#DIV/0!
Min.	4.70	0.00
Max.	6.90	0.00

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

Tested by/Date: Robin Casada 2/11/2020

PART Name/Desc: **TER-WUS280FS-SNA**

Design Rec. Change level/date:

PART NO (s): **8240-0518**EU5T-14474-EA  3/19/18Mold #: **TD103S-SN1**

Eng. Change Documents: NA

CAVITY #:↓

SE2	4.30		2.95							
	+0.20	-0.20	+0.20	-0.20						
1	4.26		2.92							
2	4.28		2.94							
3	4.27		2.93							
4	4.28		2.94							
5	4.27		2.94							
6	4.27		2.94							
7	4.27		2.93							
8	4.27		2.94							
9	4.27		2.94							
10	4.27		2.93							
11	4.27		2.93							
12	4.27		2.93							
13	4.27		2.94							
14	4.27		2.94							
15	4.27		2.94							
16	4.27		2.94							
17	4.27		2.94							
18	4.27		2.94							
19	4.27		2.94							
20	4.27		2.94							
21	4.27		2.94							
22	4.27		2.94							
23	4.27		2.94							
24	4.27		2.94							
25	4.27		2.94							
26	4.27		2.93							
27	4.27		2.92							
28	4.27		2.93							
29	4.27		2.94							
30	4.27		2.94							

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

Tested by/Date: Robin Casada 2/11/2020

PART Name/Desc: **TER-WUS280FS-SNA**

Design Rec. Change level/date:

PART NO (s): **8240-0518**EU5T-14474-EA  3/19/18Mold #: **TD103S-SN1**

Eng. Change Documents: NA

CAVITY #:↓

SE2	4.30		2.95							
	+0.20	-0.20	+0.20	-0.20						
31	4.27		2.92							
32	4.27		2.94							
33	4.27		2.94							
34	4.27		2.94							
35	4.28		2.93							
36	4.27		2.94							
37	4.27		2.94							
38	4.27		2.94							
39	4.27		2.94							
40	4.27		2.94							
41	4.27		2.94							
42	4.27		2.93							
43	4.27		2.94							
44	4.27		2.92							
45	4.27		2.93							
46	4.27		2.94							
47	4.28		2.94							
48	4.27		2.93							
49	4.28		2.94							
50	4.28		2.94							
51	4.27		2.93							
52	4.28		2.93							
53	4.27		2.92							
54	4.27		2.94							
55	4.27		2.94							
56	4.27		2.94							
57	4.28		2.94							
58	4.27		2.94							
59	4.27		2.94							
60	4.27		2.94							

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

Tested by/Date: Robin Casada 2/11/2020

PART Name/Desc: **TER-WUS280FS-SNA**

Design Rec. Change level/date:

PART NO (s): **8240-0518**EU5T-14474-EA  3/19/18Mold #: **TD103S-SN1**

Eng. Change Documents: NA

CAVITY #:↓

SE2	4.30		2.95							
	+0.20	-0.20	+0.20	-0.20						
61	4.27		2.94							
62	4.27		2.94							
63	4.28		2.94							
64	4.27		2.94							
65	4.27		2.93							
66	4.27		2.94							
67	4.27		2.94							
68	4.27		2.94							
69	4.27		2.94							
70	4.27		2.94							
71	4.27		2.94							
72	4.27		2.94							
73	4.27		2.94							
74	4.27		2.94							
75	4.27		2.93							
76	4.27		2.94							
77	4.27		2.94							
78	4.27		2.94							
79	4.27		2.94							
80	4.27		2.94							
81	4.26		2.94							
82	4.27		2.94							
83	4.27		2.91							
84	4.27		2.93							
85	4.27		2.94							
86	4.27		2.94							
87	4.27		2.94							
88	4.27		2.94							
89	4.27		2.94							
90	4.27		2.94							

CPK DATA

ORGANIZATION: SUMITOMO ELECTRIC WIRING SYSTEMS (PLT.5)

Tested by/Date: Robin Casada 2/11/2020

PART Name/Desc: **TER-WUS280FS-SNA**

Design Rec. Change level/date:

PART NO (s): **8240-0518**

EU5T-14474-EA  3/19/18

Mold #: **TD103S-SN1**

Eng. Change Documents: NA

CAVITY #:↓

SE2	4.30		2.95							
	+0.20	-0.20	+0.20	-0.20						
91	4.27		2.93							
92	4.27		2.94							
93	4.28		2.94							
94	4.27		2.94							
95	4.27		2.93							
96	4.27		2.94							
97	4.27		2.94							
98	4.27		2.94							
99	4.27		2.94							
100	4.27		2.94							

average 4.27 2.94
 minimum 4.26 2.91
 maximum 4.28 2.94
 range 0.02 0.03
 std dev 0.00 0.01

LSL 4.10 2.75
 NOM 4.30 2.95
 USL 4.50 3.15

CPK 16.80718743 10.137431

WORK INSTRUCTION

AREA:	QUALITY ASSURANCE LAB
TITLE	LABORATORY SCOPE - SCOTTSVILLE (SV5, SV5-2, SV5-Franklin)

PURPOSE: To summarize the testing capabilities available at Scottsville Plant (SV5, SV5-2, SV5-Franklin), and to clarify the equipment, tests performed, standards, recording method and reaction plan.	APPLICATION: Scottsville (SV5, SV5-2, SV5-Franklin)
	RULE ENFORCER: QA Coordinator / Above

SV5 Tests Performed

TESTS PERFORMED	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Melt Flow Rate	Tinius Olsen Extrusion Plastometer	QRW - MELTFLOW	Melt Index Record	Reject Tag Procedure
Waterproof Test	Waterproof Tester	QAW - WATERPROOFTST	Inspection Data Sheet	Reject Tag Procedure
Moisture Analysis (Reference Only)	Moisture Tester	F-A-SV5-010	Moisture Test Data Sheet	Reject Tag Procedure
Insertion / Retention Test	Force Gage Instron Tester	QAW - INSERTRETPROC QAW - InstronOperation	Inspection Data Sheet Data storage	Reject Tag Procedure
Dimensional Measurement	Profile / Caliper / Micrometer / Depth Gage / Keyence Measurement System	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Part Weight	Scale	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Freeze Test	Freezer	SWS Inspection Standard	Inspection Data Sheet	Reject Tag Procedure

SV5 - Franklin Tests Performed

TESTS PERFORMED	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Melt Flow Rate	Tinius Olsen Extrusion Plastometer	QRW - MELTFLOW	Melt Index Record	Reject Tag Procedure
Waterproof Test	Waterproof Tester	QAW - WATERPROOFTST	Inspection Data Sheet	Reject Tag Procedure
Insertion / Retention Test	Force Gage Instron Tester	QAW - INSERTRETPROC QAW - InstronOperation	Inspection Data Sheet Data storage	Reject Tag Procedure

WORK INSTRUCTION

AREA:	QUALITY ASSURANCE LAB			
TITLE	LABORATORY SCOPE - SCOTTSVILLE (SV5, SV5-2, SV5-Franklin)			
Dimensional Measurement	Caliper / Micrometer / Depth Gage / Keyence Measurement System	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Part Weight	Scale	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Freeze Test	Freezer	SWS Inspection Standard	Inspection Data Sheet	Reject Tag Procedure

SV5 (Building 2) Tests Performed

TESTS PERFORMED	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Hardness Test	Hardness Tester	H-A-001	Hardness Test Data Sheet	Reject Tag Procedure
Dimensional Measurement	Profile / Caliper / Micrometer / Depth Gage / Nikon MM-400	Inspection Instruction Sheet	Inspection Data Sheet	Reject Tag Procedure
Contact Force Test	Contact Force Gage	MSW-Force Gage	Inspection Data Sheet	Reject Tag Procedure
Dimensional Measurement	Profile / Keyence System / OGP / Caliper / Micrometer / Depth Gage / Slip Gages	SWS Inspection Standard	Inspection Data Sheet	Reject Tag Procedure

Equipment Calibrations

	EQUIPMENT USED	TEST METHODS / STANDARD	RECORDING METHOD	REACTION METHOD
Calipers, Micrometers, Depth Gages, Weigh Scales, other process tools/jigs.	Certified Gages (Gage Blocks & Weights)	Per Calibration Procedure	Calibration Record and Gagetrak	Reject Tag Procedure
Keyence Microscope	Certified Gages			
Force Gages	Certified Weights			
Freezer	Certified Meter			
Melt Indexer	Outside Vendor			
Moisture Analyzer	Outside Vendor			
Water Pressure Gage	Outside Vendor			
Hardness Tester	Outside Vendor			
Optical Comparator (Profile)	Outside Vendor			
Keyence Measurement Scope	Outside Vendor			
OGP	Outside Vendor			
NIKON MM-400	Outside Vendor			
INSTRON Tensile Tester	Outside Vendor			