

From: **Quality Assurance HellermannTyton GmbH**

Subject: PPAP Approval signature deadline

Dear customer:

As you are aware the PPAP process is an integral part of our business. With that in mind, we are informing our customers who are requesting a PPAP that there is a 30 day (calendar) deadline to which we are expecting your reply back with a signed copy of the PSW with a disposition regarding it's validity. It is important that we maintain compliance to the current AIAG PPAP manual.

**As a part of compliance a signed and approved PSW is essential for our records.**

We reserve the right to consider that PPAP valid and complete, if we do not receive a signed copy of the PSW within 30 days (calendar).

Once you have received our PPAP information please e-mail us a copy of your disposition with the appropriate signatures as soon as possible to the following person:

[nescha.lohse@HellermannTyton.de](mailto:nescha.lohse@HellermannTyton.de)

Quality Assistant

phone: +49 (0) 4122 701 5726

Your cooperation is greatly appreciated!

Respecting the procedure as described above, the documentation with HellermannTyton PB-No.:			
<b>99540</b>	with submission date	21.09.2022	will be considered as complete and valid auto-
atically on	<b>21.10.2022</b>	unless otherwise disposed!	

## Part Submission Warrant

Part Name	<b>SOC11FTOVAL</b>	Cust. Part Number	<b>DU5T-14E044-MA</b>
Shown on Drawing No.	<b>10-0979-001-CSU</b>	Org. Part Number	<b>15100992</b>
Engineering Change Level	<b>04.1</b>	Dated	<b>01.09.2017</b>
Additional Engineering Changes	<b>n/a</b>	Dated	<b>n/a</b>
Safety and/or Government Regulation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Purchase Order No.	<b>15100992</b>
Weight (kg)	<b>0,0021</b>		
Checking Aid No.	<b>n/a</b>	Checking Aid Engineering Change Level	<b>n/a</b>
Dated	<b>n/a</b>		

### ORGANIZATION MANUFACTURING INFORMATION

**HellermannTyton GmbH** **DUNS: 315430892**

Organization Name & Supplier/Vendor Code

**Großer Moorweg 45**

Street Address

**Tornesch**

**25436**

**Germany**

City

Region

Postal Code

Country

### CUSTOMER SUBMITTAL INFORMATION

**Nursan Kablo Donanimlari**

( **30471** )

Customer Name/Division

**Nadiye BARUTÇU**

Buyer/Buyer Code

various

Application

### MATERIALS REPORTING

Has customer-required Substances of Concern information been reported?

☒ Yes ☐ No ☐ n/a

Submitted by IMDS or other customer format:

**778838574**

Are polymeric parts identified with appropriate ISO marking codes?

☐ Yes ☐ No ☒ n/a

### REASON FOR SUBMISSION (Check at least one)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Initial Submission                                | <input type="checkbox"/> Change to Optional Construction or Material |
| <input type="checkbox"/> Engineering Change(s)  | <input type="checkbox"/> Supplier or Material Source Change          |
| <input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional | <input type="checkbox"/> Change in Part Processing                   |
| <input type="checkbox"/> Correction of Discrepancy                                    | <input type="checkbox"/> Parts Produced at Additional Location       |
| <input type="checkbox"/> Tooling inactive > than 1 year                               | <input type="checkbox"/> 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 package

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

Mold / Cavity / Production Process

**injection moulding / serial mold**

### 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 confidential -        pcs / 24 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 **i.A.**

Date **21-Sep-22**

Print Name **i.A. N. Lohse**

Phone No. **+49 (0) 4122 701 5726**

Fax No. **+49 4122 701 241**

Title **Quality Assistant**

E-mail **nescha.lohse@HellermannTyton.de**

### FOR CUSTOMER USE ONLY (IF APPLICABLE)

PPAP Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other

Customer Signature \_\_\_\_\_ Date \_\_\_\_\_

Print Name \_\_\_\_\_ Customer Tracking Number (optional) \_\_\_\_\_







HELLERMANN TYTON GMBH  
GROSSER MOORWEG 45  
TORNESCH, GERMANY 25436  
Attention : AXEL LANG

Ascend Performance Materials Operations LLC  
Nylon Plastics and Polymers  
3000 Chemstrand Road  
Cantonment, FL 32533  
Telephone : (850)968-7000

Certificate Date : 04-Mar-22

Delivery No : 382607871

Shipped Qty : 11,022.928 Lbs

5,000.000 Kgs

Customer P.O. No: 4500171533 AIFREIGHT

Container : 0000000000002089636

### Certificate of Analysis

This certifies that Nylon Resin shipped to you from Ascend Performance Materials Operations LLC has been tested and found to meet required specifications.

This material was produced under a Quality System that meets ISO 9001:2015 and IATF 16949:2016 criteria.

If you have questions or concerns about this Certificate of Analysis, please contact Ascend Performance Materials Customer Operations at 1-888-927-2363.

This product meets the requirements of the following specifications: SAE J1639, SAE J1639 PA0171, ASTM D6779-PA0161-Z1Z2, ASTM D4066 PA0161, FMVSS 302, MS-DB-41 CPN 1826, ESB-M4D178-A2, WSS-M99P23-C1/C2, WSS-M99P9999-A1, WSSM4D706B1, WSS-M99P1111-A, WSS-M4D706-A4, WSK-M4D706-A, GMW16447P-PA66-T2, GMW16558P-PA66-T1 and GMP.PA66.015, Ford WQ 100C.

Material: VYDYNE 47H BK0644

Material No: 10397365

Batch No: KA18FY04

Date of Mfg: 18-Jan-2022

### Ascend Performance Materials Operations LLC Specification

<u>Lot Data Property</u>	<u>Test Method</u>	<u>Min</u>	<u>Max</u>	<u>Result</u>	<u>Units</u>
Copper	STM 00667	125	250	202	PPM
Moisture	STM 00835	0.10	0.20	0.10	%
NOTCHED CHARPY	STM 01255	14.0		21.0	kJ/m^2
Strength @ Yld	STM 01253	50	70	58	MPa

Note: This certificate is generated and controlled by electronic means. No signature is required. This document may not be reproduced, except in full, without written consent of the Nylon Plastics and Polymers Department, Ascend Performance Materials Operations LLC.

All information contained in this letter is provided for informational purposes only and is not meant to alter or waive the appropriate contractual product specifications. Moisture values are representative of the product at the time it was sampled. If numerical flame spread ratings appear herein, they are not intended to reflect the hazards presented by this or any other material under actual fire conditions. Each end user should determine whether potential fire hazards are associated with the finished product, and whether this resin is suitable for the particular end use.

This Certificate of Analysis is provided by Ascend Performance Materials (or its authorized distributor) to its direct purchaser only and is intended for internal use. It is not valid if resold, conveyed or otherwise transferred to another party without Ascend's prior written consent. Ascend makes no warranties and assumes no liability for any product or certification obtained from an unauthorized source. Contact Ascend at +1 713-315-5700 to confirm the validity of any third party supplier. Ascend and Vydne are registered trademarks of Ascend Performance Materials Operations LLC.

## POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)

FMEA Number: MFMEA 90

Part Number / Name: Clips/Mounts/Brackets Process Responsibility: HellermannTyton Prepared by: Chris Burbank  
 Model Year(s) / Vehicle(s): N/A Key Date: 7/28/2010 PFMEA Date Org.: 7/28/2010 Rev. Date: See Footer  
 Core Team: Quality Assurance-Engineering-Manufacturing-Processing Rev. Level: See Footer

Item & Function	Requirement	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Class	Potential Cause(s)/ Mechanism(s) of Failure	Occurrence	Current Design Controls -Prevention -Detection	Detection	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
													Actions Taken	Severity	Occurrence	Detection	R P N
1-4 Raw Material Receiving Inspection	Cert matches material and P.O. request	Unacceptable Moisture Levels	Cannot Manufacture	5	PTC	Shipping Damage	2	D - Incoming Inspection D-Moisture Testing P - Material Certs	8	80	None						0
				5	PTC	Material Received with moisture level too high/low	2	D - Incoming Inspection D-Moisture Testing P - Material Certs	8	80	None						0
		Incorrect Material Certification	Delay in Manufacturing	5		Cert did not match lot of material cert	2	D-Incoming Inspection P-Certs Faxed Prior to Arrival	8	80	None						0
		Improperly labeled	Delay in Manufacturing	4		Material received was not labeled.	2	D - Incoming Inspection P - Material Certs	8	64	None						0
5-8 Central Material Handling System Operation	Acceptable material for production	Unacceptable Moisture Levels	Part Non-Compliance	5		Dryer malfunction	2	D - Dryer Alarms D - Moisture Testing P - Filter Cleaning	5	50	None						0
		Contamination	Part Non-Compliance	5		Foreign Matter in Material	2	D - Visual Inspections P - Material Handling Work Instruction	8	80	None						0
			Part Non-Compliance	5		Unlike Materials Mixed Together	2	D - Visual Inspections P - Material Handling Work Instruction	8	80	None						0
		Incorrect Material	Part Non-Compliance	6		Failure to Set Up Work Order Correctly	2	D/P - Visual to Work Order	8	96	None						0
9 Injection Molding Process	Instructions for production	Work Order Set Up Incorrectly	Delay in Manufacturing	4		Failure to Set-Up Work Order Correctly	2	D/P - Work Order D - Set-up Verification P - Process Sheets	8	64	None						0
		Sinks /Warp	Part Non-Compliance	3		Insufficient Hold Pressure	2	D- Visual Inspections P - First Piece Approvals	8	48	None						0
				3		Cycle Time Too Fast	2	D- Visual Inspections P - First Piece Approvals	8	48	None						0
		Incorrect Blending	Part Non-Compliance / and Color Match Failures	5		Failure to set up blenders correctly	2	D/P - Visual to Work Order	8	80	None						0
		Burning	Part Non-Compliance / Cosmetic Issues / Short	3		Plugged/Warn Vents	3	D- Visual Inspections D - First Piece Approvals P - PM P-Mold Cleaning Schedule	8	72	None						0
		Sticking in mold	Part Non-Compliance / Mold Damage	5		Excessive Mold Temperatures	2	D- Visual Inspections P - PM P-Mold Cleaning Schedule	8	80	None						0
				5		Excessive Hold Pressure	2	D- Visual Inspections P - PM P-Mold Cleaning Schedule	8	80	None						0
				5		Residue Build-Up	2	D- Visual Inspections P - PM P-Mold Cleaning Schedule	8	80	None						0

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Item & Function	Requirement	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Class	Potential Cause(s)/ Mechanism(s) of Failure	Occurrence	Current Design Controls -Prevention -Detection	Detection	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
													Actions Taken	Severity	Occurrence	Detection	R P N
		Shorts	Part Non-Compliance / Cosmetic	5		Water hooked up incorrectly	2	D-Visual Inspection	8	80	None						0
				5		Heaterband malfunctions	3	D- Visual Inspection D - Process Inspection P - PM	8	120	None						0
				6		Insufficient Injection Pressure compatibility of Press / mold	3	D- Visual Inspections D- First Piece Approvals P - PM	8	144	None						0
				6		Plugged/Warn Vents	3	D- Visual Inspections D - First Piece Approvals P - PM P-Mold Cleaning Schedule	8	144	Improved venting on M0521.	Kevin Paske 3/17/17	Vent work completed.	6	2	8	96
				6		Residue Build-Up	3	D- Visual Inspections D - First Piece Approvals P - PM P-Mold Cleaning Schedule	8	144	None						0
				6		Lot / Moisture Variations	3	D- Visual Inspections D - First Piece Approvals P - Material Certs P - Moisture Analysis	8	144	None						0
				6		Process Interruption	3	D/P- Visual Inspections D/P - First Piece Approvals	8	144	None						0
		Flash	Part Non-Compliance / Cosmetic	6		Excessive Injection Pressure	3	D- Visual Inspections P - First Piece Approvals P - PM P-Mold Cleaning Schedule	8	144	None						0
				6		Incorrect Tonnage	3	D- Visual Inspections P - First Piece Approvals P - In Process PM's	8	144	None						0
				6		Lot Variations	3	D- Visual Inspections D - First Piece Approvals P - Material Certs	8	144	None						0
				6		Fast Cycle Time	2	D - Visual Inspections D - Process Inspections P - First Piece Approvals P - In Process PM	8	96	None						0
		Start up scrap packaged	Customer Dissatisfaction	3		Operator packages parts too soon	4	P - Visual Inspection P - Work Instructions D - Final Inspection D - Process Inspection	8	96	None						0
10 First Piece Approval	Product conforms per specifications before production.	First Piece Not Hung	Delay in Manufacturing	6		First Piece not hung	1	D/P - Tool Evaluation Sheet D/P-Visual Inspection	8	48	None						0

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Item & Function	Requirement	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Class	Potential Cause(s)/ Mechanism(s) of Failure	Occurrence	Current Design Controls -Prevention -Detection	Detection	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
													Actions Taken	Severity	Occurrence	Detection	R P N
11 Validation Testing	Validation and documentation of new tooling	Validation is Not Completed	Part Non-Compliance	6		Validation Testing Forgotten	1	D/P - PPAP Matrix	8	48	None						0
12 Work Order Set Up	Package product per customers specifications	Incorrect or Missing Date Code on the Box	Traceability Loss	3		Failure to put date code on product.	5	D/P - Visual Inspections P - Date Code Calendar P - Work Instructions/Training	8	120	None						0
		Greasy Parts Packaged	Part Non-Compliance	4		Ejector Pin / Machine Grease	1	D - Visual Inspection D - Process Inspection P - PM	8	32	None						0
		Incorrect / Missing Labels	Customer Dissatisfaction	3		Printer Ribbon not Inserted Properly	2	D/P - Visual Inspections	8	48	None						0
				3		Wrong Labels Placed on Product	4	D - Visual Inspections D - Box and Package Inspection Log P - LPA	8	96	Implement 5S-labels at work station on reels in "W" bay.	Chris Martin 08/01/2016	5S in "W" bay completed	3	3	7	63
				3		Excess Labels not Removed From Production Area	4	D - Visual Inspections P - LPA	8	96	Implement 5S-labels at work station on reels in "W" bay.	Chris Martin 08/01/2016	5S in "W" bay completed	3	3	7	63
				3		Wrong label provided	4	D - Visual Inspections P - LPA	8	96	Implement 5S-labels at work station on reels in "W" bay.	Chris Martin 08/01/2016	5S in "W" bay completed	3	3	7	63
		Insufficient Packaging	Customer Dissatisfaction	3		Insufficient Packaging Supplies	4	ERP System	8	96	None						0
		Incorrect Quantity in Box	Customer Dissatisfaction	4		Improper Scale Set Up	4	D - Visual Inspection/Hand Count D/P-Scale Inspection @ Shift and Package Change	5	80	None						0
				4		Scale Out of Calibration	1	P - Calibration Schedule and Program	5	20	None						0
		Bad Product Packaged	Customer Dissatisfaction	6		Inspection Not Performed by Mold Tech of Operator	1	D/P-Production Inspection Log	7	42	None						0
13-15 In Process Inspection	Manufacturing a conforming part per specifications			6		Bad Product Not Found in Random Sampling	2	D/P-Production Inspection Log	7	84	None						0
16 Final Inspection	Product conforms per specifications after production run.	Bad Product Shipped	Customer Dissatisfaction	6		Inspection Not Performed by QA	1	D - Final Inspection Log P - QA Stamp "OK for Shipment" or Green Placard	8	48	None						0
				6		Bad Product not Found in Random Sampling	2	D - Final Inspection Log P - QA Stamp "OK for Shipment" or Green Placard	8	96	None						0
		Mis-Handling During Packaging		7		Bad Product not Found in Random Sampling	2	D - Final Inspection Log P - QA Stamp "OK for Shipment" or Green Placard	7	98	None						0
17 QA Testing	Validation and documentation of product per specifications	QA Testing Incomplete	Part Non-Compliance	6		Inspections Not Performed by QA	1	D/P - Process Inspection Logs D/P - Weekly Matrix Sheet	8	48	None						0





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FAILURE MODE AND EFFECTS ANALYSIS  
(PROCESS FMEA)**

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Item & Function	Requirement	Potential Failure Mode	Potential Effect(s) of Failure	Severity	Class	Potential Cause(s)/ Mechanism(s) of Failure	Occurrence	Current Design Controls -Prevention -Detection	Detection	R P N	Recommended Action(s)	Responsibility & Target Completion Date	Action Results				
													Actions Taken	Severity	Occurrence	Detection	R P N
18-19 Shipping	Ship product per specifications to warehouse	Shipped Incorrectly	Customer Dissatisfaction	5		Damaged Shipment	2	D - Visual Inspection P-Wrapped Shipments	8	80	None						0
				5		Customer Specific Requirements Not Met	2	D - Visual Inspection P - Final Inspection	8	80	None						0
		Shipped Late		7		Customer Specific Requirements Not Met	2	D/P - ERP System	5	70	None						0
20 Annual Validation (if required)	Meet customer requirements	Annual Validation not Completed	Customer Dissatisfaction	5		Customer Specific Requirements Not Met	2	D/P - PPAP Matrix	8	80	None						0

## PROCESS FLOW DIAGRAM

Part Description: Clips/Mounts/Brackets  
 HT Dwg.# and Rev: N/A  
 Customer P/N and Rev: N/A  
 Customer Name: Various

Program Name: Clips/Mounts/Brackets  
 Created By: Chris Burbank  
 Creation Date: 07/28/10

	Process ■ "n"	Move ◆ "u"	Store ● "l"	Inspect ☒ "x"	Operational Description:	Special Characteristics / Descriptions	Control Methods
1	■				QA Receives C of A from Raw Material Supplier	C of A for compliance	ERP System
2	■				Receive in Raw Material From Supplier	Quality Approval of Material	ERP System
3				☒	Shipping and Receiving Inspects Raw Material	Review Container, Packaging, Lot Numbers and Quantity of Material	ERP System
4				☒	Incoming Receiving QA Inspects Color of Material (If Needed)	Review Color of Material	ERP System
5		◆			Material Movement	Move Raw Materials into Storage	ERP System
6			●		Material Storage	Store Raw Materials Until Needed	FIFO By Lot
7		◆			Material Movement	Move Materials to Material Handling System and Verify Correct Material Moisture Check on Silo Materials	Material Process Log F-PRD-8.1-4 Moisture Log F-QA-10.3-9
8	■				Material Ratio	Verify Correct Material	Material Process Log F-PRD-8.1-4
9	■				Molding Machine Set Up	Verify Mold Machine is Set Up	Per Set-Up Instructions F-PRD-8.1-4
10				☒	QA Completes First Piece Approval (Injection Molding)	Short Shots, Any Flash, Warpage, or Burning Hang First Piece	First Piece Acceptance F-QA-10.3-5 Visual at Press
11				☒	Validation Testing	Validate Parts	Measurements - Refer to Control Plan
12	■				Work Order Set-Up LPA	Validate materials, labels, etc. to work order LPA-Random Audit	Visual, Signed Set Up Stamp on Work Order F-PRD-9
13				☒	In Process Checks ( Injection Molding)	Short Shots, Any Flash, Warpage, or Burning.	Per Control Plan
14				☒	Final Product and Packaging is Verified	Check parts for Visual Defects Seals, Quantity, Bags, Boxes, Date Code Verified	Inspection Label (Initialed and Dated) on Box Share Point F-PRD-1.1
15	■				Full Skid/Complete Order	Verify and Mark Skid Ready for Inspection	Cone Placed on Skid
16				☒	Final Inspection (Last Box on Skid)	Quality Approval of Final Product	F-QA-10.4-21 Share Point
17				☒	QA Testing	Verify Part Testing has been Completed	Per Control Plan
18		◆			Product Movement	Move Skid To Shipping Dock	ERP System
19		◆			Product Movement	Ship Product to Warehouse	Shipping Manifest ERP System
20				☒	Annual Validation (If Required)	PPAP Parts on Yearly Basis if Required	PPAP Matrix

☐ Prototype ☐ Pre-Launch ☒ Production

## Control Plan

Control Plan Number: <b>MCP 90</b>			Key Contact/Phone: <b>414.355.1130</b>				Date (Orig.) <b>07/28/10</b>		Date (Rev.) <b>See Footer</b>				
Part Number/Latest Change Level: <b>Clips/Mounts/Brackets/Various Materials</b>			Core Team: <b>Quality Assurance, Engineering, Manufacturing, Processing</b>				Customer Engineering Approval/Date (If Req'd) <b>N/A</b>						
Part Name/Description <b>Clips/Mounts/Brackets/Various Materials</b>			Supplier/Plant Approval/Date <b>N/A</b>				Customer Quality Approval/Date (If Req'd) <b>N/A</b>						
Supplier/Plant: <b>HellermannTyton MKE</b>		Supplier Code: <b>N/A</b>		Other Approval/Date (If Req'd) <b>N/A</b>				Other Approval/Date (If Req'd) <b>N/A</b>					
Quality Assurance		Team Supervisor		Material Handler		Process Technician		Operator		QA and/or Team Supervisor		Shipping/Receiving/PIC	
Part / Process Number	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	SIZE		Control Method		
									Size	Freq			
1-4	Incoming Receiving		1	Material Characteristics			Per Certificate of Analysis DTLD FMVSS302	Visual Material Cert	Each Lot	Each Lot	ERP System	Isolate lot PR-QA-13.1-2	
				Verify Material Certificate		Per Material Specification	Visual Material Cert	Each Lot	Each Lot	ERP System	Isolate lot PR-QA-13.1-2		
			2	Quantity			Per Packing List	Gaylord Count	Each Lot	Each Lot	ERP System	Notify Purchasing	
			3	Packaging Requirements			Packaging meets Requirements	Gaylord Visual	Each Lot	Each Lot	WI-SR-10.2-1	Notify Purchasing and QA	
			4	Lot Number			Per Packing List	Gaylord Visual	Each Lot	Each Lot	ERP System	Notify QA	
			5	Material Color (if Req'd)			Per Color Chip	Material Visual	Each Lot	Each Lot	ERP System	Isolate lot PR-QA-13.1-2	
5-7	Material Movement	Material Handling System	1		Move Material to Material Handling System		Correct Material is set up in the Material Handling System per Work Order	Visual	Each Material Change	Each Material Change	Material Process Log F-PRD-8.1-4	Isolate Lot PR-QA-13.1-2	
			2		Check Moisture in Silo Materials		Perform Moistures per TS- WI-MAX4000XL	Computrac Max 4000XL Tester.	1 Sample / Material	Daily	Moisture Log F-QA-10.3-9	Check and Adjust Dryers/Control of Non-Conforming Product PR-QA-13.1-2	
8	Material Ratio	Material Handling System	1		Material Ratio		Set Up Per Work Order	Visual	Each Material Change	Each Material Change	Material Process Log F-PRD-8.1-4	Isolation PR-QA-13.1-2 Adjust Ratio	
			2		Colorant (When Needed)		Mix Ratio Setting / Set Up Per Work Order	Ratio Setting	Each Lot	Each Colorant	Material Process Log F-PRD-8.1-4	Isolation PR-QA-13.1-2 Adjust Ratio	
9	Molding Machine Set Up	Injection Molding Machine	1		Machine Set-Up		Per Mattec, Set-Up Sheet, and Acceptable Visual Part	Review of Set-Up Specs	Each Set Up	Each Set Up	Machine Set-Up Sheet F-PRD-9.6-1	Adjust Process/Recheck Isolation PR-QA-13.1-2	
10	First Piece Approval Visual	Injection Molding Machine	1	Part Quality			Check for Burns, Shorts, Flash and Warp that will effect Fit, Form or Function ,Runner Removal if required.	Visual Inspection	1 Shot	Each Set Up	First Piece Acceptance F-QA-10.3-5 and Hung at Press	Adjust Process Retest / Control of Non-Conforming Product PR-QA-13.1-2	
	First Piece Approval Dimensional	Injection Molding Machine	2	Part Quality (If Required)			Perform Dimensional check of inspection dimension per print if required.	Calibrated Gages	1 Shot	Each Set Up	First Piece Acceptance F-QA-10.3-5 and Hung at Press/SPC software	Adjust Process Retest / Control of Non-Conforming Product PR-QA-13.1-2	
11	Initial Validation Testing	Injection Molding Machine	1	Dimensional			Perform Dimensional on the Part to Print	Calibrated Gages	1 Shot	At Capability	Dimensional Study F-QA-10.4-2	Control of Non-Conforming Product PR-QA-13.1-2	

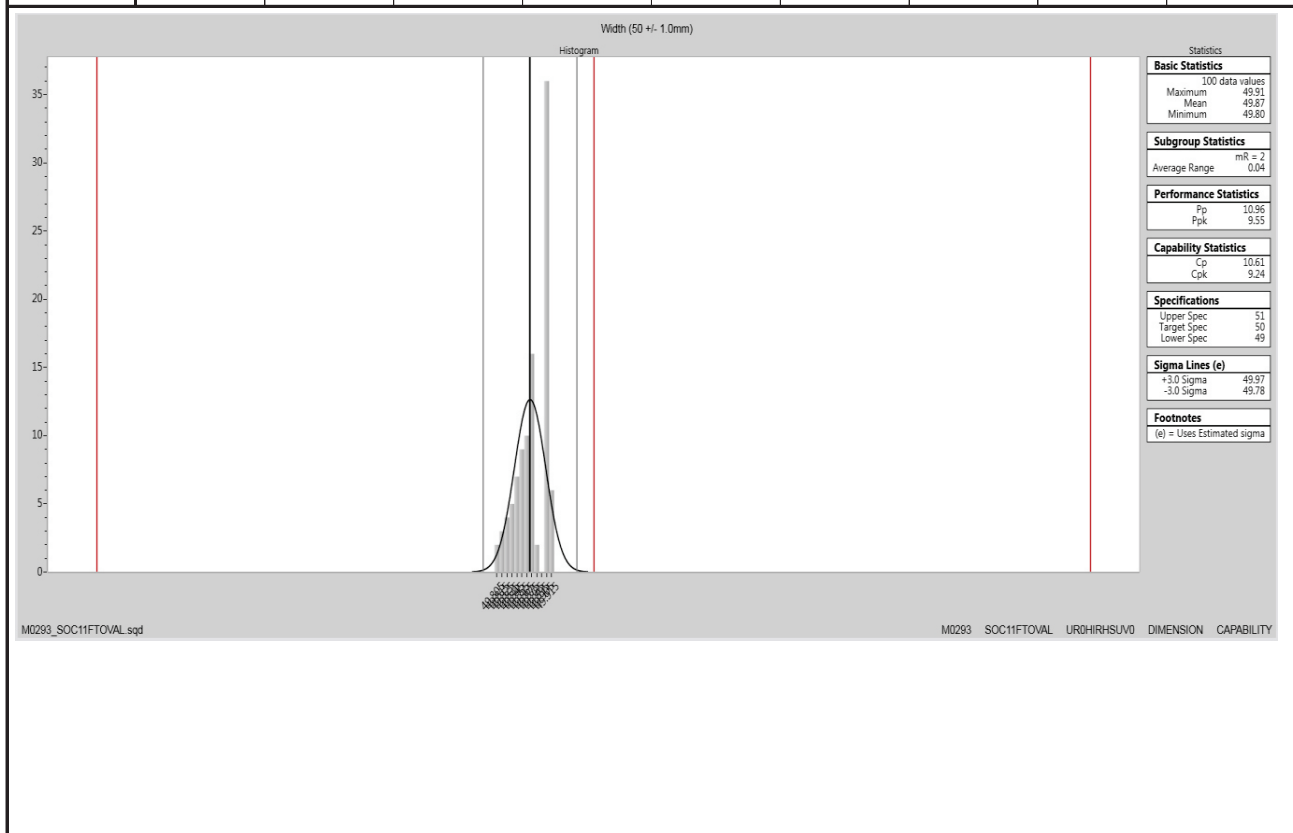
Quality Assurance		Team Supervisor	Material Handler		Process Technician		Operator		QA and/or Team Supervisor		Shipping/Receiving/PIC	
Part / Process Number	Process Name / Operation Description	Machine, Device, Jig, Tools for MFG.	CHARACTERISTICS			Special Char. Class	METHODS					Reaction Plan
			NO.	PRODUCT	PROCESS		Product/Process Specification/ Tolerance	Evaluation/ Measurement Technique	SIZE		Control Method	
									Size	Freq		
			2	Dimensional Capability			Per Drawing / SQC Pack	Calibrated Gages	100 pcs	At Capability	SPC Software	Control of Non-Conforming Product PR-QA-13.1-2
			3	Connector Clip Push On/Pull Off Forces (If Required)			Per Drawing / SQC Pack	Calibrated Gages	1 Shot	At Capability	SPC Software	Control of Non-Conforming Product PR-QA-13.1-2
12	Work Order Set-Up TEAM SUPERVISOR or Processing Tech	Packaging Equipment	1	Packaging Requirements			Validate Material and Packaging Requirements Per Work Order	Visual	1	Each Work Order	Signed Set-Up Stamp on Work Order	Adjust Process Control of Non-Conforming Product PR-QA-13.1-2
	Layered Process Audit	Production Process	2		Production process		Per questions on LPA form F-PRD-9	Visual	1	Shift	Layered Process Audit Form F-PRD-9	Adjust Process Control of Non-Conforming Product PR-QA-13.1-2 (if applicable)
13	Processing Tech Completed Visual Process Inspection	Injection Molding Machine	1	Part Quality			No Burns, Shorts, Flash, Warp or Part Damage Allowed.	Visual	1 Shot	4x per Shift and 1 x per each start-up	Share Point or Shift Log F-PRD-1.1	Wi-PRD-13.1-3 Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
		Injection Molding Machine	2	Process Set-Up			Work Order Matches MIU / Cavity Count Matches Actual / Cycle Time is to Standard or Adjusted Notes	Visual	Once	Shift	Share Point or Shift Log F-PRD-1.1	Wi-PRD-13.1-3 Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
14-15	Packaging Packaging Operator Process Inspections	Injection Molding Machine	1	Visual Appearance			Check Parts for Visual Defects	Visual	1 Shot	Per Hour	Inspection Label (Initialed and Dated) on Box and Share Point or F-PRD-1.1	Notify Supervisor, Processing Tech, and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
		Date Code	2	Date Code Stamp			Bag and Box Must Have Correct Date Code S-PRD-8.1-6	Visual	Once	Per Shift	Inspection Label (Initialed and Dated) on Box and Share Point or F-PRD-1.1	Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
		Labels	3	Bag and Box Labels			Bag and Box Labels Must Match Work Order	Visual	Two Checks	Per Shift	Inspection Label (Initialed and Dated) on Box and Share Point or F-PRD-1.1	Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
		Sealer	4	Proper Bag Seal			Bag Must Have a Complete and Un-Wrinkled Seal	Visual and Pull at Seams	1 bag	Twice Per Shift	Inspection Label (Initialed and Dated) on Box and Share Point or F-PRD-1.1	Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
		Scale/ Conveyor Check	5	Scale / Conveyor Verification for Count			Verify Scale is Counting Correctly / Conveyor has correct number of parts	Using Scales to Package Product WI-PRD-16 or Hand Count	Two Checks	Per Shift	Inspection Label (Initialed and Dated) on Box and Share Point or F-PRD-1.1	Adjust Process/ Notify Supervisor and QA Recheck / Control of Non-Conforming Product PR-QA-13.1-2
16	Final Inspection at Cell	Injection Molding Machine	1	Part Quality			Check for Burns, Shorts, Flash and Warp	Work Order	1 Shot	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Labels	2	Box Label			Per Work Order Check for Correct Label Placement; if Required	Visual match	1 label	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2

Quality Assurance		Team Supervisor	Material Handler			Process Technician	Operator		QA and/or Team Supervisor		Shipping/Receiving/PIC	
Part / Process Number	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	SIZE		Control Method	
									Size	Freq		
		Labels	3	Bag Label			Per Work Order Check for Correct Label Placement; if Required	Visual match	1 label	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Waters in Bag	4	Water Verification			Verify Water is in Bag where required	Visual	1 Bag	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Sealer	5	Proper Bag Seal			Bag Must Have a Complete Seal Where Required	Visual and Pull at Seams	1 bag	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Correct Amount of Parts in Box	6	Quantity in Box			Boxes Must Have Specified Amount of Bags per Box	Hand Count	1 Sample	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Packaging	7	Packaging Requirements			Verify per Work Order correct Box	Visual	1 check	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
		Stamp	8	Date Code Stamp / Printer			S-PRD-8.1-6	Visual match	1 check	Twice per 24 hours	Share Point or Final Inspection F-QA-10.4-21	Control of Non-Conforming Product PR-QA-13.1-2
17	QA Testing	Injection Molding Machine	1	Part Quality			Check for Burns, Shorts, Flash and Warp that will effect Fit, Form or Function	Visual Inspection	1 Shot	Daily	Shift Log F-PRD-1.1 or Weekly Matrix	Adjust Process Retest / Control of Non-Conforming Product PR-QA-13.1-2
18-19	Material Movement		1		Move Parts to Shipping Dock		Per ERP System	Visual	Each Skid	Each Skid	ERP System	Notify Supervisor
	Material Movement		2		Ship Product		Per Shipping Requirements	Visual	Each Skid	Each Shipment	Shipping Manifest ERP System	Notify Supervisor
20	Annual Validation (If Required)		1		Validation of Product		Re-Validation of Product to Customer Requirements	PPAP	Per Customer Requirements	Per Customer Requirements	PPAP Matrix	Control of Non-Conforming Product PR-QA-13.1-2

## Initial Process Study

Part No. 151-00992	Part Description Oval Hole Tape Clip - 20mm Offset	Supplier HellermannTyton	
Drawing No. 10-0979-001-CSU	Drawing Date 9/1/2017	Drawing Revision 04.1	Inspection Facility HT-Milwaukee
Production Date 7/10/2018	Material UR0HIRHSUV0	Tool No. M0293	Inspector T. H.

DATA	Width (50 +/- 1.0mm) mm								
1-9	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
10-18	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
19-27	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
28-36	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
37-45	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
46-54	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
55-63	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
64-72	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
73-81	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
82-90	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
91-99	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
100-108	50.00								



# R&R Study Results Using Specifications

Gage number:	TGM-628	Done by:	Donna Szczepanski
Gage description:	Scale	Part name:	151-01314
Gage type:	Scale	Characteristics:	weight
Study name:	Anova Gage R & R	Specifications:	LSL=2.4 Nominal=2.5 USL=2.6
Study date:	01/26/2018	Number of Distinct Cate	116.6139

Objective:

Comment:

Interpretation guidelines

< 10%	generally considered to be an acceptable measurement system
10%-30%	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
> 30%	considered to be not acceptable - every effort should be made to improve the measurement system

Results based on specifications

Measurement Unit Analysis

Specification Spread (USL-LSL)/

Repeatability - Equipment Variation (EV)

EV = 0.0003189476

%EV = 0.9568438

Reproducibility - Appraiser Variation (AV)

AV = 0.0002463516

%AV = 0.7390556

Repeatability & Reproducibility (R&R)

R&R = 0.0004030096

%R&R = 1.20903

Part Variation (PV)

PV = 0.03333087

%PV = 99.99269

Specification Spread (USL-LSL)/

(USL - LSL) = 0.0333333

Appraiser	Replicate	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10
Donna	1	2.5679	2.568	2.5509	2.5709	2.5694	2.5403	2.5431	2.5706	2.5698	2.5382
Donna	2	2.568	2.5682	2.5511	2.5709	2.5683	2.5409	2.5431	2.5703	2.5696	2.5384
Donna	3	2.5671	2.5688	2.5511	2.5708	2.5691	2.5406	2.5436	2.5705	2.5698	2.5388
Taleala	1	2.5671	2.5677	2.551	2.5708	2.569	2.5406	2.5434	2.5696	2.57	2.5385
Taleala	2	2.5678	2.5682	2.5512	2.5711	2.569	2.5409	2.543	2.5705	2.5698	2.5385
Taleala	3	2.5676	2.5685	2.5513	2.5712	2.5695	2.5403	2.5433	2.5707	2.57	2.5387
Rob	1	2.568	2.5687	2.5516	2.5703	2.5691	2.5408	2.5438	2.5709	2.5698	2.5387
Rob	2	2.5685	2.5689	2.5519	2.5716	2.5698	2.5416	2.5436	2.5708	2.5701	2.539
Rob	3	2.5681	2.5691	2.5514	2.5715	2.5698	2.5415	2.5439	2.5705	2.5703	2.539

## R&R Study Results Using Specifications

Gage number: TGM-537	Done by: QA_Admin
Gage description: Digital Indicator	Part name: T50R0
Gage type: Indicator	Characteristics: Head Height
Study name: ANOVA Scale R&R	Specifications: LSL=5.3 Nominal=5.9 USL=6.5
Study date: 01/15/2018	Number of Distinct Cate 80.32957

Objective:

Comment:

	Interpretation guidelines
< 10%	generally considered to be an acceptable measurement system
10%-30%	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
> 30%	considered to be not acceptable - every effort should be made to improve the measurement system

Results based on specifications

Measurement Unit Analysis	Specification Spread (USL-LSL)/
Repeatability - Equipment Variation (EV) EV = 0.003347164	%EV = 1.673582
Reproducibility - Appraiser Variation (AV) AV = 0.001056678	%AV = 0.528339
Repeatability & Reproducibility (R&R) R&R = 0.003509997	%R&R = 1.754999
Part Variation (PV) PV = 0.1999692	%PV = 99.9846
Specification Spread (USL-LSL)/ (USL - LSL) = 0.2	

Taleala		5.74	5.74	5.72	5.75	5.72	5.77	5.74	5.75	5.74	5.72
Taleala	2	5.73	5.74	5.73	5.75	5.72	5.78	5.75	5.75	5.74	5.72
Taleala	3	5.74	5.74	5.73	5.75	5.72	5.77	5.75	5.76	5.75	5.72
Felicia	1	5.73	5.74	5.72	5.74	5.72	5.77	5.74	5.75	5.74	5.72
Felicia	2	5.74	5.74	5.73	5.74	5.73	5.78	5.74	5.75	5.74	5.73
Felicia	3	5.73	5.74	5.72	5.74	5.72	5.77	5.74	5.75	5.74	5.72
Joyce	1	5.74	5.74	5.72	5.74	5.72	5.77	5.74	5.76	5.74	5.73
Joyce	2	5.73	5.74	5.73	5.74	5.72	5.78	5.74	5.75	5.74	5.72
Joyce	3	5.73	5.74	5.72	5.74	5.72	5.77	5.74	5.75	5.75	5.72



## R&R Study Results Using Specifications

Gage number: TGM-966	Done by: Donna Szczepanski
Gage description: Global Performance 7-10-7	Part name: 133-01339
Gage type: Coordinate Measuring Machine	Characteristics:
Study name: Anova Gage R & R	Specifications: LSL=193.77 Nominal=194.47 USL=195.17
Study date: 01/26/2018	Number of Distinct Cate 15.66439

Objective:

Comment:

Interpretation guidelines

<b>&lt; 10%</b>	generally considered to be an acceptable measurement system
<b>10%-30%</b>	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
<b>&gt; 30%</b>	considered to be not acceptable - every effort should be made to improve the measurement system

### Results based on specifications

Measurement Unit Analysis	Specification Spread (USL-LSL)/
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Repeatability - Equipment Variation (EV) EV = 0.01851334	%EV = 7.934321
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Reproducibility - Appraiser Variation (AV) AV = 0.009738355	%AV = 4.173599
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Repeatability & Reproducibility (R&R) R&R = 0.02091839	%R&R = 8.965065
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Part Variation (PV) PV = 0.2323928	%PV = 99.59733
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Specification Spread (USL-LSL)/  
(USL - LSL) = 0.2333323

Appraiser	Replicati	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10
Tom	1	184.2818	184.3054	184.2134	184.3446	184.2817	184.4099	184.1092	184.3943	184.5566	184.5174
Tom	2	184.311	184.2812	184.2398	184.3407	184.2711	184.4173	184.092	184.3912	184.5438	184.5198
Tom	3	184.2663	184.2774	184.2218	184.3436	184.2964	184.4163	184.1053	184.4084	184.5551	184.5127
Dave	1	184.2344	184.305	184.1868	184.3155	184.2766	184.3772	184.0993	184.4225	184.5465	184.5188
Dave	2	184.2632	184.2456	184.2533	184.3096	184.2957	184.4001	184.0926	184.3564	184.5102	184.4883
Dave	3	184.2346	184.2579	184.2209	184.2919	184.2628	184.3929	184.1042	184.3468	184.5107	184.5146
Rob	1	184.2706	184.2944	184.2427	184.3427	184.2969	184.3777	184.1079	184.3828	184.5559	184.506
Rob	2	184.3106	184.3253	184.188	184.3414	184.2729	184.3944	184.0905	184.392	184.5135	184.5014
Rob	3	184.2378	184.3008	184.2495	184.3303	184.273	184.3649	184.0979	184.351	184.5271	184.4758

## R&R Study Results Using Specifications

10/18/2018

Gage number: TGM-850	Done by: Danielle Oldham.
Gage description: Tensile Tester	Part name: T120R
Gage type: Tensile Tester	Characteristics: Tensile Strength
Study name: Annual Gage R & R	Specifications: LSL=120 Nominal=158 USL=196
Study date: 10/12/2018	Number of Distinct Cate 44.97344

Objective:

Comment:

	Interpretation guidelines
< 10%	generally considered to be an acceptable measurement system
10%-30%	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
> 30%	considered to be not acceptable - every effort should be made to improve the measurement system

Results based on specifications

Measurement Unit Analysis	Specification Spread (USL-LSL)/
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Repeatability - Equipment Variation (EV) EV = 0.2463085	%EV = 1.944541
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Reproducibility - Appraiser Variation (AV) AV = 0.3112622	%AV = 2.457333
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Repeatability & Reproducibility (R&R) R&R = 0.3969283	%R&R = 3.133644
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Part Variation (PV) PV = 12.66045	%PV = 99.95089
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Specification Spread (USL-LSL)/  
(USL - LSL) = 12.66667

Appraiser	Replicati	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10
Danielle	1	150.2	145.32	157.82	157.02	151.69	159.67	153.49	162.61	158.38	150.2
Danielle	2	150.48	145.41	157.47	156.7	152.26	160.25	153.02	162.53	158.28	149.73
Danielle	3	150.45	145.48	158.04	157.07	151.28	159.25	153.43	162.81	158.62	150.36
Zanetta	1	150.9	146.26	157.42	154.45	151.45	159.34	152.81	161.61	158.15	149.28
Zanetta	2	150.86	146.51	157.19	154.13	152.36	159.36	152.36	161.49	158.04	149.04
Zanetta	3	150.91	146.39	157.25	154.02	151.45	159.45	152.98	161.71	158.22	149.73
Mareali	1	151.15	147.82	157.09	154	152.07	159.25	152.24	161.05	158.13	148.69
Mareali	2	151.13	147.59	157.19	153.84	151.58	158.99	152.15	161.02	158.05	148.95
Mareali	3	151.22	147.99	157.02	153.52	152.05	158.8	151.99	160.53	158.04	148.15

## R&R Study Results Using Specifications

Gage number: TGM-918	Done by: Donna Szczepanski
Gage description: Caliper	Part name: 151-01314
Gage type: Caliper	Characteristics: Width
Study name: Anova Gage R & R	Specifications: LSL=22.15 Nominal=23.15 USL=24.15
Study date: 01/26/2018	Number of Distinct Cate 76.27592

Objective:

Comment:

	Interpretation guidelines
< 10%	generally considered to be an acceptable measurement system
10%-30%	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
> 30%	considered to be not acceptable - every effort should be made to improve the measurement system

Results based on specifications

Measurement Unit Analysis	Specification Spread (USL-LSL)/
Repeatability - Equipment Variation (EV) EV = 0.006103516	%EV = 1.831055
Reproducibility - Appraiser Variation (AV) AV = 0.0008380898	%AV = 0.2514269
Repeatability & Reproducibility (R&R) R&R = 0.006160787	%R&R = 1.848236
Part Variation (PV) PV = 0.3332764	%PV = 99.98293
Specification Spread (USL-LSL)/ (USL - LSL) = 0.3333333	

Donna		23.15	23.18	23.23	23.22	23.21	23.22	23.19	23.21	23.19	23.19
Donna	2	23.14	23.17	23.22	23.21	23.19	23.23	23.18	23.22	23.18	23.18
Donna	3	23.15	23.17	23.22	23.22	23.2	23.23	23.18	23.22	23.18	23.18
Taleala	1	23.15	23.17	23.21	23.21	23.21	23.22	23.17	23.22	23.18	23.18
Taleala	2	23.15	23.18	23.2	23.22	23.2	23.23	23.19	23.21	23.18	23.18
Taleala	3	23.14	23.17	23.21	23.21	23.2	23.22	23.19	23.21	23.19	23.18
Rob		23.15	23.17	23.22	23.22	23.21	23.23	23.19	23.21	23.19	23.18
Rob	2	23.16	23.18	23.21	23.22	23.2	23.23	23.19	23.2	23.18	23.18
Rob	3	23.16	23.17	23.22	23.22	23.2	23.21	23.17	23.21	23.19	23.18

## R&R Study Results Using Specifications

Gage number: TGM-760	Done by: QA_Admin
Gage description: Micro-Vu	Part name: T50R0
Gage type: Micro-Vu	Characteristics: Length
Study name: Anova Gage RR	Specifications: LSL=196 Nominal=202 USL=208
Study date: 01/12/2018	Number of Distinct Cate 1633.901

Objective:

Comment:

Interpretation guidelines

<b>&lt; 10%</b>	generally considered to be an acceptable measurement system
<b>10%-30%</b>	may be acceptable based upon importance of application, cost of measurement device, cost of repair etc.
<b>&gt; 30%</b>	considered to be not acceptable - every effort should be made to improve the measurement system

### Results based on specifications

#### Measurement Unit Analysis

#### Specification Spread (USL-LSL)/

#### Repeatability - Equipment Variation (EV)

EV = 0.0009959223

%EV = 0.04979611

#### Reproducibility - Appraiser Variation (AV)

AV = 0.0014096

%AV = 0.07048

#### Repeatability & Reproducibility (R&R)

R&R = 0.00172593

%R&R = 0.08629649

#### Part Variation (PV)

PV = 1.999999

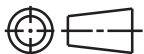
%PV = 99.99996

#### Specification Spread (USL-LSL)/

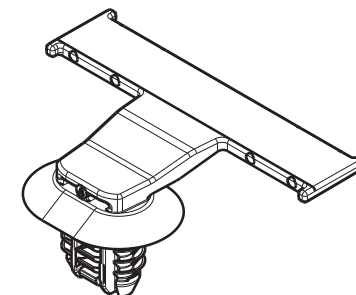
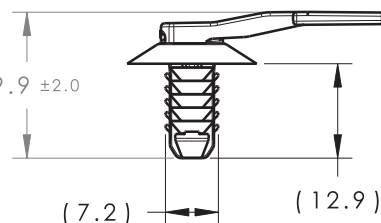
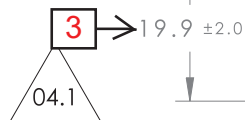
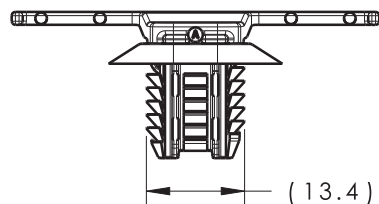
(USL - LSL) / = 2

Appraiser	Replicati	Part 1	Part 2	Part 3	Part 4	Part 5	Part 6	Part 7	Part 8	Part 9	Part 10
Barry	1	197.9685	197.9134	197.8128	197.828	197.7084	197.8157	198.0724	197.6714	197.9272	198.0251
Barry	2	197.9657	197.911	197.8131	197.8262	197.7127	197.8153	198.0736	197.6719	197.9272	198.0263
Barry	3	197.9667	197.9111	197.813	197.8269	197.7125	197.8127	198.0763	197.6731	197.9272	198.0271
Donna	1	197.967	197.9108	197.814	197.8282	197.7128	197.812	198.0751	197.6749	197.9277	198.027
Donna	2	197.9677	197.9099	197.8139	197.8273	197.7106	197.812	198.075	197.6779	197.9287	198.0277
Donna	3	197.9681	197.9096	197.8153	197.8279	197.7139	197.8135	198.0746	197.6779	197.9293	198.0279
Taleala	1	197.968	197.9102	197.8166	197.8304	197.7147	197.815	198.0754	197.6788	197.9295	198.028
Taleala	2	197.9682	197.9109	197.8174	197.8319	197.7153	197.8154	198.0754	197.6809	197.9286	198.0289
Taleala	3	197.9692	197.9101	197.818	197.8307	197.7154	197.8145	198.076	197.6801	197.9315	198.0289

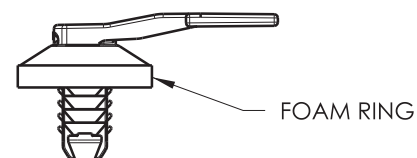
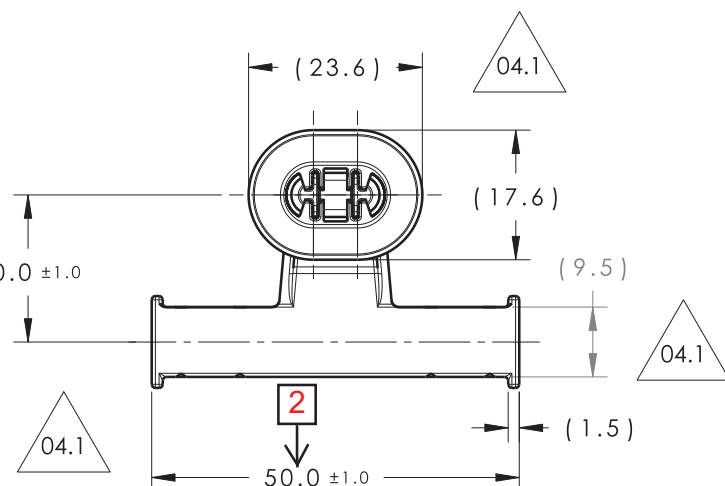
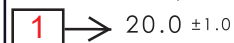
CATIA V5



Revision Level			Revision Record	Changed	Date	Approved	Date
Drawing	State	Part					
04.1	Design Release		SEE ECN# 014043	RJE	09/01/17	EJH	09/01/17



ISOMETRIC VIEW



SIMILAR TO SOC11FTOVAL (NATURAL)  
EXCEPT AS SHOWN

## REFERENCE:

PERFORMANCE REQUIREMENTS AT DRY AS MOLDED:

1. SHEET METAL THICKNESS RANGE: 0.60mm - 6.75mm

2. OVAL HOLE SIZES:

6.2x12.2 +/- 0.2mm

6.5x12.5 +0.2/-0.4mm

6.5x13.0 +/- 0.2mm

7.0x12.0 +/- 0.2mm



FOAM RING	TYPE	MATERIAL	COLOR
NO	SOC11FTOVAL	PA66HIRHS	BLACK
NO	SOC11FTOVAL	PA66HIRHS	NATURAL
YES	SOC11FTOVALMD	PA66HIRHS	NATURAL

Material  SEE CHART  COLOR: SEE CHART	Units <b>millimeters</b>	The copyright of this drawing is reserved by HellermannTyton. It is issued on condition that it is not reproduced, copied or disclosed to a third party, either wholly or in part, without the consent of HellermannTyton.	Drawn	SJA	11/17/10	Article/Type-No      SEE CHART	Scale      1:1
	Tolerance defined on each dimension		Approved	WPT	03/10/11	Title  OVAL HOLE TAPE CLIP - 20mm OFFSET	Project Number  10-0979
			<div>HellermannTyton</div> <div>North America Email: corp@htamericas.com Web: www.hellermann.tyton.com</div>			Drawing-No      PRODUCTION : Phase	Format      AH
						<div>10-0979-001-CSU</div>	