

For Ease of Use with the forms, you could enter all relevant information here and then avoid having to retype it.

1	Part Number	5555-05
2	Customer Part No	10127
3	Part Name	Bracket, X/A Arm - C2
4	Drawing Number	t4458-3
5	Rev Level	-
6	Rev Date	2/28/2008
7	Purchase Order Number	P1250
8	Part Weight (kg)	2.00
9	Application	Crossing Arm
10	Supplier Name	Specialty Manufacturing Inc.
11	Supplier Street Address	10200 Pineville Road
12	City	Pineville
13	State	North Carolina
14	Country	USA
15	Zip	28134
16	Supplier Code	105
17	Supplier Reperesentive	John Doe
18	Title	Quality Engineer
19	E-Mail	John.Doe@smiglobal.net
20	Supplier Ph Number	704-333-3333
21	Fax Number	704-333-3334
22	Customer Name	Joe's Welding
23	Division	0
24	Buyer	Tim Grubb
25	Buyer Code	10
26	Lab/Inspection. Facility	SPECMFG
27	Control Plan#	CP0709082
28	FMEA#	PF0709082
29	Key Date	7/9/2008



PPAP Package

Specialty Manufacturing Inc.	105
Organization Name	Code
10200 Pineville Road	
Street Address	
Pineville North Carolina	28134
City State	Zip

Joe's Welding	
Customer Name	
Tim Grubb	10
Customer Contact/Code	
Crossing Arm	
Application	



5555-05	Bracket, X/A Arm - C2	2/28/2008	-
Part Number	Part Name	Revision Date	Revision level



Part Submission Warrant

Part Name <u>Bracket, X/A Arm - C2</u>		Part Number <u>10127</u>		Rev. <u>-</u>	
Safety and/or Government Regulation <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Engineering Drawing Change Level <u>-</u>		Dated <u>2/28/2008</u>	
Additional Engineering Changes _____				Dated _____	
Shown on Drawing Number <u>t4458-3</u>		Purchase Order No. _____		Weight (kg) <u>2.00</u>	
Checking Aid Number _____		Engineering Change Level _____		Dated _____	
ORGANIZATION MANUFACTURING INFORMATION			CUSTOMER SUBMITTAL INFORMATION		
<u>Specialty Manufacturing Inc. 105</u>			<u>Joe's Welding 0</u>		
Organization Name and Code			Customer Name/Division		
<u>10200 Pineville Road</u>			<u>Tim Grubb 10</u>		
Street Address			Customer Contact /Code		
<u>Pineville</u>	<u>North Carolina</u>	<u>28134</u>	<u>Crossing Arm</u>		
City	State	Zip	APPLICATION		
Note: Does this part contain any restricted or reportable substances? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Are plastic parts identified with appropriate ISO marking codes? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
REASON FOR SUBMISSION (Check at least one)					
<input type="checkbox"/> Initial submission		<input type="checkbox"/> Change to Optional Construction or Material			
<input type="checkbox"/> Engineering Change(s)		<input type="checkbox"/> Sub-Supplier or Material Source Change			
<input type="checkbox"/> Tooling: Transfer, Replacement, Refurbishment, or additional		<input checked="" type="checkbox"/> Change in Part Processing			
<input type="checkbox"/> Correction of Discrepancy		<input checked="" type="checkbox"/> Parts produced at Additional Location			
<input type="checkbox"/> Tooling Inactive > than 1 year		<input type="checkbox"/> Other - please specify			
REQUESTED SUBMISSION LEVEL (Check one)					
<input type="checkbox"/> Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.					
<input type="checkbox"/> Level 2 - Warrant with product samples and limited supporting data submitted to customer.					
<input type="checkbox"/> Level 3 - Warrant with product samples and complete supporting data submitted to customer.					
<input checked="" type="checkbox"/> Level 4 - Warrant and other requirements as defined by customer.					
(Check)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	1	2	3	4	5
	6	7	8	9	10
	11	12	13	14	15
	16	17	18	19	
<input type="checkbox"/> Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.					
DECLARATION					
I affirm that the samples represented by this warrant are representative of our parts, have been made to the applicable customer drawings and specifications and are made from specified materials on regular production tooling with no operations other than the regular production process. I also certify that documented evidence of such compliance is on file and available for review.					
EXPLANATION/COMMENTS: _____					
List Molds/Cavities/Production Processes _____					
Organization Authorized Signature _____				Date _____	
Print Name <u>John Doe</u>		Phone No. <u>704-333-3333</u>		Fax <u>704-333-3334</u>	
Title <u>Quality Engineer</u>		E-mail <u>John.Doe@smiglobal.net</u>			
FOR CUSTOMER USE ONLY (IF APPLICABLE)					
Part Warrant Disposition: <input type="checkbox"/> Approved <input type="checkbox"/> Rejected		Comments:			
<input type="checkbox"/> Interim Approval		_____			
Customer Signature _____		Date _____			
Print Name _____		_____			



PROCESS FLOW DIAGRAM

PART NUMBER: 5555-05

DATE: 7/9/2008

PART DESCRIPTION: Bracket, X/A Arm - C2

ECL: -

PREPARED BY: John Doe

STEP	Operation MOVE STORE INSPECT	OPERATION DESCRIPTION	ITEM #	PRODUCT AND PROCESS CHARACTERISTICS	ITEM #	CONTROL METHODS
1	◆ ● ▲ ■	Shear parts from sheets	1	Per Print	1	1st Piece Inspection
2	◆ ● ▲ ■	Punch Holes	2	Per Print	2	Calipers
3	◆ ● ▲ ■	Form Bends	3	Per Print	3	Calipers
4	◇ ○ ▲ □		4		4	



POTENTIAL FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA)

Print # 5555-05

Rev. -

FMEA Number: PF0709082

Item: Bracket, X/A Arm - C2

Process Responsibility: Specialty Manufacturing Inc.

Prepared by: John Doe

Model Year(s)/Vehicle(s): Crossing Arm

Key Date 7/9/2008

Date (Orig.) 7/9/2008

Team: Tracy Anderson, Ivory Bushell, Paul Vidri, Matthew Richard

Design FMEA is attached

Date (Rev.) _____

Step	Process Function/Requirements	Potential Failure Mode	Potential Effect(s) of Failure	S e v	C l a s s	Potential Cause(s)/ Mechanism(s) of Failure	O c c u r	Current Process Controls Prevention	Current Process Controls Detection	D e t e c t	R. P. N.	Recommended Actions	Responsibility & Target Date	Action Results				
														Actions Taken	S e v	O c c	D e t	R. P. N.
1	Shear parts from sheets	Wrong Size	hole will be off location	8		Punch holes will be off location	8	Shear stops	Calipers	8	512	None						
		Wrong Angle	Bend will not be even	8		Side will be tapered	5	guide 90 degrees angle to blades	Calipers	8	320							
		Burrs	Poor Operation	2		Part will not set flat and off location of holes	1	clearness of blades	Visual Inspection	2	4							
2	Punch Holes	Wrong Location	Part will not Assemble	8		Part will not Assemble	4	Die	Calipers	4	128	None						
		Size to big	Holes punch oversize	6		Stud will not stay in	2	Die Repair form	Calipers	8	96							
		Size to small	Holes punch undersize	6		Stud will not go on	5	Die Repair form	Calipers	8	240							
		Burrs	Burrs on the back size of part	2		Part will not set flat and off location of holes	2	Die Repair form	Visual Inspection	1	4							
3	Form Bends	Bend too long	Hinge will not fit between ears	8		Hinges will not a line	8	Press back stop	Calipers and new gages	6	384	Thread gages 1/8 NPT						
		Bend too short	Hinge will be loose	8		Hinges will not a line	8	No Control Prevention	Calipers and new gages	6	384							
		More then 90	Hinge will not fit between ears	8		Hinges will not a line	8	No Control Prevention	Calipers and new gages	6	384							
		Less then 90	Hinge will be loose	8		Hinges will not a line	8	No Control Prevention	Calipers and new gages	6	384							
4				0							0	None						
											0							
													0					
													0					



CONTROL PLAN

Prototype
 Pre-Launch
 Production

Engineering Change Documents are attached

Control Plan Number CP0709082			Key Contact/Phone John Doe 704-333-3333				Date (Orig.) 7/9/2008	Date (Rev.)				
Part Number/Latest Change Level 5555-05 2/28/2008 -			Core Team Tracy Anderson, Ivory Bushell, Paul Vidri, Matthew Richard				Customer Engineering Approval/Date (If Req'd.)					
Part Name/Description Bracket, X/A Arm - C2			Supplier/Plant Approval/Date 7/9/2008				Customer Quality Approval/Date (If Req'd.)					
Supplier/Plant Specialty Manufacturing Inc.		Supplier Code 105	Other Approval/Date (If Req'd.)				Other Approval/Date (If Req'd.)					
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	SAMPLE		CONTROL METHOD	
1	Shear parts from sheets	Shear			Shearing		Per Print	1st Piece Inspection	5	Run	1st Piece Inspection	Red Tag and segregate for Disposition
2	Punch Holes	Punch Press			Punching holes		Per Print	Calipers	2	per hour	Calipers	Red Tag and segregate for Disposition
3	Form Bends	Press Brake			Form 90		Per Print	Calipers	5%	100%	Calipers	Red Tag and segregate for Disposition
4	0						0 0					

INSERT A PRINT



PRODUCTION PART APPROVAL
DIMENSIONAL RESULTS

Organization: Specialty Manufacturing Inc.	Part Number: 5555-05
Supplier/Vendor Code: 105	Part Name: Bracket, X/A Arm - C2
Inspection Facility: SPECMFG	Design Record Change Level: -
	Engineering Change Documents:

Item	Dimension/Specification	Specification / Limits	Test Date	Qty. Tested	Organization Measurement Results (Data)	Ok	Not Ok
1	1.250	-0.020 0.020	7/9/08	3	1.245 1.245 1.245	X	
2	0.630	-0.030 0.030	7/9/08	3	0.625 0.630 0.635	X	
3	∅ 0.252	0.000 0.005	7/9/08	3	0.257 0.255 0.258		X
4	∅ 0.750	0.000 0.005	7/9/08	3	0.753 0.754 0.754	X	
5	1.500	-0.030 0.030	7/9/08	3	1.502 1.502 1.502	X	
6	1.850	-0.030 0.030	7/9/08	3	1.848 1.846 1.850	X	
7	3.750	-0.030 0.030	7/9/08	3	4.175 4.185 4.165		X
8	9.070	-0.030 0.030	7/9/08	3	9.000 9.000 9.000		X
9	0.250	-0.020 0.020	7/9/08	3	0.250 0.255 0.245	X	
10	1.750	-0.030 0.030	7/9/08	3	1.750 1.750 1.750	X	
11	3.900	-0.030 0.030	7/9/08	3	3.950 3.950 3.950		X
12	2.310	-0.030 0.030	7/9/08	3	2.900 2.900 2.900		X
13	0.520	-0.030 0.030	7/9/08	3	0.520 0.520 0.520	X	
14	2.170	-0.030 0.030	7/8/09	3	2.050 2.030 2.040		X

March 2006

CFG-1003

Blanket statements of conformance are unacceptable for any test results.

SIGNATURE	TITLE	DATE
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APPEARANCE APPROVAL REPORT

PART NUMBER 5555-05		DRAWING NUMBER 5555-05		APPLICATION (VEHICLES) Crossing Arm	
PART NAME Bracket, X/A Arm - C2		BUYER CODE SPECMFG		E/C LEVEL -	
SUPPLIER NAME Specialty Manufacturing Inc.		MANUFACTURING LOCATION 10200 Pineville Road		DATE 1/8/2008	
REASON FOR SUBMISSION <input type="checkbox"/> PART SUBMISSION WARRANT <input type="checkbox"/> PRE TEXTURE		SPECIAL SAMPLE FIRST PRODUCTION SHIPMENT		RE-SUBMISSION ENGINEERING CHANGE	
				SUPPLIER CODE 105	
				OTHER	

APPEARANCE EVALUATION

Organization Sourcing & Texture Information	Pre-Texture Evaluation	Authorized Customer Representative Signature & Date
N/A		
	Correct & Proceed	
	Correct & Resubmit	
	Approved to Texture	

COLOR EVALUATION

COLOR SUFFIX	TRISTIMULUS DATA					MASTER NUMBER	MASTER DATE	MATERIAL TYPE	MATERIAL SOURCE	HUE				VALUE		CHROMA		GLOSS		METALLIC BRILLIANCE		COLOR SHIPPING SUFFIX	PART DISPOSITION
	DL*	Da*	Db*	DE*	CMC					RED	YEL	GRN	BLU	LIGHT	DARK	GRAY	CLEAN	HIGH	LOW	HIGH	LOW		

COMMENTS _____

SUPPLIER	#REF!	PHONE NUMBER	DATE	AUTHORIZED CUSTOMER REPRESENTATIVE SIGNATURE	DATE
SIGNATURE					

FMEA LISTS
Third Edition

Table 6, Page 43: PFMEA Severity Evaluation Criteria

SEVERITY SCALE	Criteria: Severity of Effect	Criteria: Severity of Effect
	(CUSTOMER EFFECT)	(MANUFACTURING/ ASSEMBLY EFFECT)
10 Hazardous - w/o warning	Very high severity ranking when a potential failure mode affects safe vehicle operation and/or involves noncompliance with government regulation without warning.	This ranking results when a potential failure mode results in a final customer and/or a manufacturing/assembly plant defect. The final customer should always be considered first. If both occur, use the higher of the two severities.
9 Hazardous - w/ warning	Very high severity ranking when a potential failure mode affects safe vehicle operation and/or involves noncompliance with government regulation with warning.	This ranking results when a potential failure mode results in a final customer and/or a manufacturing/assembly plant defect. The final customer should always be considered first. If both occur, use the higher of the two severities.
8 Very High	Vehicle/item inoperable (loss of primary function).	Or may endanger operator (machine or assembly) without warning.
7 High	Vehicle/Item operable but at a reduced level of performance. Customer very dissatisfied	Or may endanger operator (machine or assembly) with warning.
6 Moderate	Vehicle/Item operable but Comfort/Convenience item(s) inoperable. Customer dissatisfied.	Or 100% of product may have to be scrapped, or vehicle/item repaired in repair department with a repair time greater than one hour.
5 Low	Vehicle/Item operable but Comfort/Convenience item(s) operable at a reduced level of performance.	Or product may have to be sorted and a portion (less than 100%) scrapped, or vehicle/item repaired in repair department with a repair time between a half-hour and an hour.
4 Very Low	Fit and Finish/Squeak and Rattle item does not conform. Defect noticed by most customers (greater than 75%).	Or a portion (less than 100%) of the product may have to be scrapped with no sorting, or vehicle/item repaired in repair department with a repair time less than a half-hour.
3 Minor	Fit and Finish/Squeak and Rattle item does not conform. Defect noticed by 50% of customers.	Or 100% of product may have to be reworked, or vehicle/item repaired off-line but does not go to repair department.
2 Very Minor	Fit and Finish/Squeak and Rattle item does not conform. Defect noticed by discriminating customers (less than 25%).	Or the product may have to be sorted, with no scrap, and a portion (less than 100%) reworked.
1 None	No discernible effect.	Or a portion (less than 100%) of the product may have to be reworked, with no scrap, on-line but out-of-station.
		Or slight inconvenience to operation or operator, or no effect.

OCCURRENCE SCALE		
10 >= 100/1000 pieces - Very High		Persistent Failures
9 50/1000 pieces - Very High		Persistent Failures
8 20/1000 pieces - High		Frequent Failures
7 10/1000 pieces - High		Frequent Failures
6 5/1000 pieces - Moderate		Occasional Failures
5 2/1000 pieces - Moderate		Occasional Failures
4 1/1000 pieces - Moderate		Occasional Failures
3 .5/1000 pieces - Low		Relatively Few Failures
2 .1/1000 pieces - Low		Relatively Few Failures
1 </= .01/1000 pieces - Remote		Failure is Unlikely

Table 8, Pg. 53: PFMEA Detection Evaluation Criteria

DETECTION SCALE	Criteria	Inspection Types	Suggested Range of Detection Methods
10 Almost Impossible	Absolute certainty of non-detection.	Manual Inspection	Cannot detect or is not checked.
9 Very Remote	Controls will probably not detect.	Manual Inspection	Control is achieved with in direct or random checks only.
8 Remote	Controls have poor chance of detection.	Manual Inspection	Control is achieved with visual inspection only.
7 Very Low	Controls have poor chance of detection.	Manual Inspection	Control is achieved with double visual inspection only.
6 Low	Controls may detect.	Gauging and Manual Inspection	Control is achieved with charting methods, such as SPC (Statistical Process Control).
5 Moderate	Controls may detect.	Gauging	Control is based on variable gauging after parts have left the station, or GO/No Go gauging performed on 100% of the parts after parts have left the station.
4 Moderately High	Controls have a good chance to detect.	Error-proofed and gauging	Error detection in subsequent operations, OR gauging performed on setup and first-piece check (for set-up causes only).
3 High	Controls have a good chance to detect.	Error-proofed and gauging	Error detection in-station, or error detection in subsequent operations by multiple layers of acceptance: supply, select, install, verify. Cannot accept discrepant part.
2 Very High	Controls almost certain to detect.	Error-proofed and gauging	Error detection in-station (automatic gauging with automatic stop feature). Cannot pass discrepant part.
1 Very High	Controls certain to detect.	Error-proofed	Discrepant parts cannot be made because item has been error-proofed by process/product design.

Retention/Submission Requirements Table
(Normative)

[NOTE: table 4.2 lists submission and retention requirements. Mandatory and applicable requirements for a PPAP record are defined in the PPAP manual and by the customer.]

Requirements	Level 1	Level 2	Level 3	Level 4	Level 5
1 Design Record	R	S	S	*	R
for proprietary components/details	R	R	R	*	R
for all other components/details	R	S	S	*	R
2 Engineering Change Documents, if any	R	S	S	*	R
3 Customer Engineering approval, if required	R	R	S	*	R
4 Design FMEA	R	R	S	*	R
5 Process Flow Diagrams	R	R	S	*	R
6 Process FMEA	R	R	S	*	R
7 Control Plan	R	R	S	*	R
8 Measurement System Analysis Studies	R	R	S	*	R
9 Dimensional Results	R	S	S	*	R
10 Material, Performance Test Results	R	S	S	*	R
11 Initial Process Studies	R	R	S	*	R
12 Qualified Laboratory Documentation	R	S	S	*	R
13 Appearance Approval Report (AAR), if applicable	S	S	S	*	R
14 Sample Product	R	S	S	*	R
15 Master Sample	R	R	R	*	R
16 Checking Aids	R	R	S	*	R
17 Records of Compliance with Customer-Specific requirements	R	R	S	*	R
18 Part Submission Warrant (PSW)	S	S	S	S	R
19 Bulk Material Checklist	S	S	S	S	R

S = The organization shall submit to the customer and retain a copy of records or documentation items at appropriate locations.

R = The organization shall retain at appropriate locations and make available to the customer upon request.

* = The organization shall retain at appropriate locations and submit to the customer upon request.