

PROCESS FAILURE MODE AND EFFECTS ANALYSIS

Part or Process Name SLITTING/ SUMTER FM003					Manufactured By Jemison Demsey Metals					FMEA Date 9/2/2011							
Core Team Rick Rowland, Patrick Macias, John Butorac, Darrell Jones, Robert Heinke, Marion Pitts, James Rembert					Prepared By: Patrick Macias					Revision Date/ Revision Level 11/1/2011 1							
#	Process Function Requirements	Potential Failure Mode	Potential Effects of Failure	S e v	C l a s s	Potential Cause(s) Mechanism(s) of Failure	O c c	Current Process Controls	D e t	R P N	Recommended Action(s)	Responsibility & Target Date	Actions Taken	S e v	O c c	D e t	R P N
1 & 2	Coil Identification	Incorrect coil loaded	Mixed Steel	8	K	Operator error	2	Tag compared to production order	1	16							
	Coil Width	Width Under Minimum	Lost trim	7		Coil Variation	3	Tape Measure check compared to W/O	1	21							
	Visual Defects	Handling Damage	Customer Reject, Sorting	6		Handling Damage	1	Visual Inspection compared to W/O requirements	1	6							
3	Rockwell Hardness	Material out of hardness spec	Improper Formability	8		Improper hardness from Mill	3	Hardness test (when required per W/O)	1	24							
	Coil Head Stock	Coil Head Shape	Nonconforming material	7		Operator failure to crop (if needed)	2	Visual	1	14							
4	Material Thickness	Material outside gauge requirement	Customer Reject	8	K	Mill error	3	Gamma Gauger	1	24							
		Material outside gauge requirement	Customer Reject	8	K	Incorrect Parameters on Gamma gauger	2	Manual Micrometer check	2	32							
		Material outside gauge requirement	Customer Reject	8	K	Out of gauge condition not recognized on Gamma Gauge Report	2	Manual Micrometer check	2	32							
5	Mult Width	Mult out of width	Customer Reject, Rework	8	K	Incorrect C.A.S.S. Input	3	Measure with Calipers	1	24							
		Mult out of width	Customer Reject, Rework	8	K	Incorrect Arbor Set Up	3	Measure with Calipers	1	24							
	Camber	Material Outside Customer Spec	Customer Rejects, Oscillating wraps	8		Incorrect Arbor Set Up, mill	3	Tape Measure/ String, Visual	2	48							
	Edge Condition	Rough-Burred Edges	Customer Reject, Rework, Safety Issue	6		Incorrect Arbor Set Up (Improper Clearance, Knife Edge Dull/ Chipped)	4	Clearance Measurement/Knife Inspection, visual	4	96	Operations and Quality will evaluate the need for Clearance chart, Feeler gauge calibration, record of inspection, reduce occurrence and defect	Patrick Macias, Randy Richards, Marion Pitts, James Rembert, 9/26/2011	Audit of 1/3 of the tooling to be performed. Completion date 11/8/2011				
6	Shape	Bends	Customer Reject, Sorting	6	K	Bottoming out in Pit	1	Visual Inspection compared to W/O requirements	1	6							
	Surface Quality	Scratches	Customer Reject, Sorting	6	K	Bottoming out in Pit	1	Visual Inspection compared to W/O requirements	1	6							

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	Material Thickness	Material outside gauge requirement	Customer Reject, Internal Sort	8	K	Mill error	3	Manual Micrometer check	1	24							
		Material outside gauge requirement	Customer Reject, Internal Sort	8	K	Operator misread micrometer	2	Manual Micrometer check compared to W/O requirements	2	32							
7	Surface Quality	Scratches	Customer Reject, Rework	8		Debris in Tension Pad	2	Visual Inspection compared to W/O requirements	2	32							
	Oscillation	Oscillated Coils	Customer Reject, Rework	7		Incorrect tension Pad Set Up	2	Visual Inspection compared to W/O requirements	1	14							
8	Edge Condition	Rough-Burred Edges	Customer Reject, Rework, Safety Issue	6		Rubbing on Separators	2	Visual/ Feel	4	48	Operations and Quality to discuss RPN number	Patrick Macias, Randy Richards, Marion Pitts, James Rembert, 9/26/2011	Reviewed Occurrence criteria, determined Occurrence to be a two. 11/1/2011	6	4	4	96
	Shape	Edge Wave, Center Buckle	Customer Reject, may not feed properly	6		Korflex, mill	1	Visual, Koreflex Adjustment	3	18							
	Shape	Belled coils	Customer Reject, Rework	7		Tension Stand/ Overarm set up	3	Visual	1	21							
	Oscillation	Oscillated Coils	Customer Reject, Rework	5		Tension Stand/ Overarm set up	3	Tape Measure/ Visual per W/O requirements	1	15							
	OD Size	Material outside of OD requirements	Customer Reject, Rework	5		Incorrect Measurement of OD	3	Tape Measure check compared to W/O	1	15							
	Coil Banding	Wrong Size Banding Used	Safety, Rework, Customer Reject	4		Misreading W/O Requirements	2	Visual compare to W/O requirements	1	8							
9	Coil Identification	Mistagged coils	Misidentified coil, Customer Reject, Rework	8		Operator misreads W/O requirement	4	Tag and size compared to production order	1	32							
	Coil Orientation	Coils unwinding in wrong direction	Customer Reject, Rework	5		Operator misreads W/O requirement	3	Compare coil to W/O requirements	2	30							
10	Coil Weight	Misweighed coil, Coil tag misrepresenting coil actual weight	Invoice Error	3		Scale Malfunction, Operator misreads/mis-inputs scale information	3	W/O Reviewed For scrap Percentage	2	18							
	Visual Defects	Mechanical Damage, Inner and outer wrap surface quality	Customer Reject, Rework	6		Handling Damage	4	Visual per W/O Requirements	2	48							
	Tag Material	Mistagged coils	Misidentified coil, Customer Reject, Retag	8		Operator misreads W/O requirement, Misidentifies coils	2	Tag and size compared to W/O Requirements	2	32							
	Package Material	Mispackaged coil	Wrong Packaging, Rework, Customer Reject	7		Operator misreads W/O requirements	3	Visual compare to W/O requirements	1	21							
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