

POTENTIAL FAILURE MODE & EFFECTS ANALYSIS

Process FMEA - Injection Molding

Page 1 of 1

PART/PROCESS NAME:	GROM-WIR	PART NUMBER:	FU5T-14603-MA	SUPPLIER & PLANT EFFECTED: ParkOhio Industries (Qingdao)					ORIGINAL FMEA	PART	PART REVISION LEVEL:						
MFG RESPONSIBILITY:	ParkOhio Industries (Qingdao)	ao) INTERNAL PART NUMBER:		76746		MODEL YEAR/VEHICLE:			DATE: <u>2022/8/6</u> DRAWING REV. DATE:			:	N/A				
OTHER AREAS INVOLVED: None KEY PRODUCT DATE:				N/A ENGINEERING RELEASE DATE: N/A					-	REVISED FMEA DATE: 2022/8/6							
Process Function Requirements	POTENTIAL FAILURE MODE	POTENTIAL EFFECT(S) OF FAILURE	SEVERITY	POTENTIAL CAUSE(S)/MECHANISM(S) OF FAILURE	OCOUR.	CURRENT PROCESS CONTROLS PREVENTION	CURRENT PROCESS CONTROLS DETECTION	DETECT!	RPN	RECOMMENDED ACTIONS	AREA/INDIVIDUAL RESPONSIBLE & COMPLETION DATE	ACTION TAKEN	ACTION	\ ₈	10		RPN
Raw Material 1 Receive raw compound 2 Move to storage / hold area 3 Laboratory testing 4 Storage of compound 5 Move to pressroom	Missing batch label	Incorrect material used	8	Label not put on Label detached	2		100% lab test/identification	3	48	NONE							
	Wrong material Durometer	Material too hard/soft Functional problems	5	Poor vendor control	4		Vendor certification	3	60	NONE						寸	_
	Physical shipment damage	Functional problems at press	5	Poor vendor control Poor material handling	2		Lab review each carton	3	30	NONE							
	Certificate is not received	No certificate on file	3	Not requested Poor vendor control	4		Review vendor certification	5	60	NONE						\exists	
	Test data not received	No lab results to comparison	3	Not requested Poor vendor control	4		Review vendor certification	5	60	NONE					1	\exists	
Molded Grommet Manufacturing 6 Mold part (injection) 7 Trim part 8 Operator inspect	Missing lot/batch on label	No lot traceability	3	Not on material label Operator error	3		QA final inspection	3	27	NONE							
	Missing information on label	Wrong part identification Incorrect shipment	7	Operator error	3		QA final inspection	3	63	NONE							
	Wrong compound used	Functional problems	8	Operator error Poor material label, bad routing	1	Material sign-off / router	QA final inspection of label	3	24	NONE							
	No routing at press or deflash	Incorrect part molding Missing operations	7	Supervisor did not issue	1	Supervisor set up approval	QA final inspection	3	21	NONE							
	No setup approval	Additional scrap / reject %	7	Set up not approved	1	Supervisor set up approval	QA final inspection	3	21	NONE							
	Part dimensionally incorrect	Difficulty in assembly	7	Tool deterioration	1	Non-abrasive rubber	Quality Auditor inspection	2	14	NONE							
	No final inspection prior to ship	Incorrect part shipped Substance part shipped	8	Hot shipment prior to check	3	100% QA audit		3	72	NONE							
	Mixed part in carton	Customer rejection	7	Partial carton mixed	1	Part mix prevention program, drop it scrap it carton closure	Final inspection	3	21	NONE							
	Mixed part on skid	Incorrect part shipped	7	Poor storage practice	1	Shipper Document Check Awareness training		3	21	NONE							
	Wrong mold setup	Additional mold change time	3	Miscommunication in maintenance department	2	Operator matches with job #	Setup Team w/Quality sign-off	2	12	NONE							
	Incorrect part routing	Additional scrap/reject percent	7	Wrong manufacturing. spec sheet distributed.	1	Bar code scan for labels.	Supervisor issues router to press.	3	21	NONE							
	Wrong part number on label	Incorrect part shipped	7	Operator error	3	Bar code scan for labels.	QA final inspection	3	63	NONE					_	_	
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	Digital visual instruction book (DVS) not at the press	Substandard parts shipped	7	Operator lack of detection	2	Methodology book	QA audit	2	28	NONE							
	Process interruption	Additional <u>scrap/reject</u> Substandard parts shipped	7	Strip stock too wide, non-feed Excess material talc	2	Supplier equipment control Vendor control, label review		2	28 28	NONE NONE					+	\dashv	_
		Substandard parts shipped	7	Too little material talc Non-fills, blisters,excess	2			2	28	NONE					4	_	
	Part splits Substandard parts	Customer reject	7	flash,tears, distortion,	2	in-process, visual inspection	QA audit	3	56 21	NONE NONE					+	<u></u>	
Application of lubricant to part 9 Lubricant application	Missing lubricant	Customer rejection - may impact assembly	5	undercure,poor gates. Operator error	3	Digital visual inspection	Operators visual inspection prior to putting part in carton and visual verification during dock audit		75	NONE					\dagger	1	
	Lubrican in wrong area or not covered in all required areas	Customer rejection - may impact assembly	5	Operator error	3		Operators visual inspection prior to putting part in carton and visual verification during dock audit	5	75	None							
Part shipping,handling and storage	Carton handling damage	Part contamination Additional scrap / reject %	7	Poor material handling	3		Shipper review	4	84	NONE							
 Final inspection, Packing 	Open carton shipped	Part contamination Additional scrap/reject%	7	Operator error	2		Shipper review	4	56	NONE							
11 Move to Shipping	wrong part shipped	Customer complaint	5	Operator error	3		shipper review	4	60	NONE				T	Ī	T	



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Page 1 of 1

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MFG RESPONSIBILITY:	ParkOhio Industries (Qingdao)	INTERNAL PART NUMBER: 76746			MODEL YEAR/VEHICLE: -				D/(12)	DRA	WING REV. DATE:		N/A			
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12 QA final inspection	Wrong shipping location	Customer complaint	5	Wrong address label	2	Job ticket ship address		5	50	NONE						
13 ship to customer	Wrong skid	Lower truck quantity Additional scrap / reject %	3	Poor shipping instruction Operator error	2		Shipper review	4	24	NONE						