

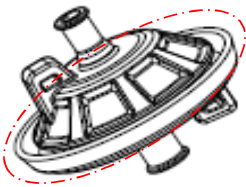
# Control Plan

Prototype	
Pre-Serie	
Series	X

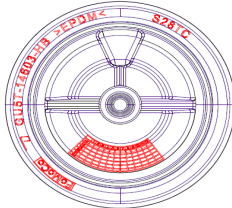

Control Plan Nb:	CP_S002816B_SP_00	Prepared by:	S. Correia	Date (Orig.):	11-07-2018	Date (Rev.):	
Part Nb:	S0002816B	Team	CT;SC;TC;AS;HM;MN;EO;MR;CR	CP Approval in workstation (by customer if req.):			
Part designation:	Grommet	Supplier (if req.):					
Drawing:	GU5T-14603-HB	ES Plant:	ESP				
Engineering level:	20170428						

Pictures/Scheme

Out of Flashes and imeperfections that affect funtion the of the parts.



Engraving

hardness checking

N. Op	Operation/ Process Designation	Characteristic	PRD	PRC	SC	Product / Process / Specification / Tolerance	Control Method	Sample		Control Instruction	Responsible	Records	Reaction Mode
								Size	Frequency				
5 / 10	Incoming material	05_PC_Geral_Compostos_PS											
25	Vulcanization	25_PC_Geral_Vulcanização_PS											
25	Vulcanization	Hardness	x	--	--	Material (50 ± 5 Sh. A)	Analog durometer	3 parts	1x/ shift (after cooling of the parts)	IT.QES.009_utilização do durometro analogico	Process controller	Informatic system (In case of failure ESP-QES-051 (Registo de expansao e dureza)	Retain produced parts; Analyze deviation and give disposition according to the analysis made by the Plant Quality (Acc P_ESP_09 Não conformidades)
25	Vulcanization	Marking	--	--	N	FoMoCo GUST - 14603 - HB >EPDM< production date S28TC ES Symbol Cavity	Visual	one complete cycle of each core	Setup/ end of production	IT.PR.D.005_Inicio e fim de produção	Shift leader/ process controller	Approved cycle label and ESP_PRD_10 (Verificação do arranque de moldes na produção)	Retain produced parts; Analyze deviation and give According to the analysis made by the quality plant and process Engineering
25	Vulcanization	Burr	--	x	--	(length * tickness)/ (Comprimento * espessura)  (0,1*1mm)max in the parting line	Visual	All parts	All cycles	-----	Operator	-----	Retain produced parts; Analyze deviation and give According to the analysis made by the quality plant and process Engineering
							Profile projector	Doubt parts	-----	IT_LAB_014 (It do equipamento do RMM)	Laboratory technician	ES_SQM_024 Relatório dimensional	
25	Vulcanization	Dimensional control	--	--	--	Dimensão:  8,3± 0,2 mm  CpK ≥ 1,33	Profile projector	125 random parts	Acc layout inspection	IT_LAB_014	Laboratory technician	ES_SQM_026 Estudo de capacidade do processo	It should be analyzed by the laboratory, quality and process eng. Provision given in accordance with the result of the analysis.

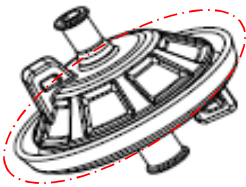
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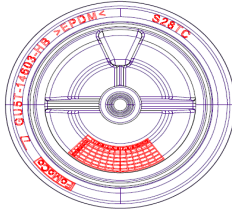

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Engraving

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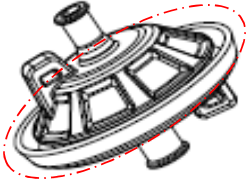
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								Size	Frequence				
25	Vulcanization	Expansion	x	--	--	400% expansion according to IT.QES.002_Ensaio de expansao	Expansion machine/ gauge	5 Parts: 4 parts from extremities and one from center of the mould	It must be carried out at the setup and restart of the machine in all shifts, after the parts rest for 6 hours.	IT_QES_044 Utilização de Calibres/ IT_QES_047 Utilização da máquina de expansão	Process controller	Informatic system (In case of failure ESP-QES-051 (Registo de expansao e dureza)	Retain produced parts; Analyze deviation and give disposition according to the analysis made by the Plant Quality (Acc P_ESP_09 Não conformidades)
----	Requalification / Layout Inspection	dimensional control	x	---		drawing	Profile projector	all cavities	Anual	IT_LAB_014	Laboratory technician	ES_SQM_024	Alert quality; act according to NC: P-ESP_09 - Não Conformidades
----	Requalification / Layout Inspection	Material Hardmess, Tensile strenght, Elongation  Change in elongation, Hardness and tensile strenght after aging resistance test (70h/100°C)  compression set method B (22h/70°C)	x	---		Acc to material report specification	Visual	1 relatório	Anual	product specification	Laboratory technician	Supplier layout inspection	It should be analyzed by the laboratory, quality; act according to NC: P-ESP_09 - Não Conformidades
----	Requalification / Layout Inspection	Water test	x	---		No leakage detected	water test machine (relax water 18°C 30min/150mm)	12 Parts	each 3 years	IT_LAB_070	Laboratory technician	ESP_LAB_014	Alert quality; act according to NC: P-ESP_09 - Não Conformidades

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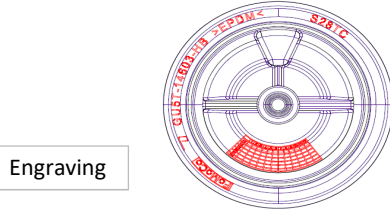
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								Size	Frequency				
50	Packaging	50_PC_Geral_Embalagem_PS											
60	Expedition	60_PC_Geral_Expedição_PS											

<b>LEGEND:</b>	<b>Notes:</b>
CC = Critical Characteristic; SC = Special Characteristic ; ES = Elastomer Solutions; CP = Control Plan Nb Op = Number of Operation identified in Process Flow Diagram;	Control Plan Revision is mandatory after PFMEA revision Validation at Workstation to be done for each revision

## REVISION HISTORY

REVISION N.	DATE	REASON FOR REVISION
0	11-07-2018	First Edition