

Failure mode and effects analysis (FMEA) for product holder

Part	Defect location	possible failure mode	A possible consequence of failure	Possible causes disorders	Conventional control	The current state				Recommended Actions	Deadline	Date of action taken completion	The resulting state			
						Occurrence	Severity	Detection	RPN				Occurrence	Severity	Detection	RPN
prism	screw connection	release the clamping prism	rotating prism	none feasible design prism	calculation and experience designer	2	4	4	32							0
				improper fasteners	calculation and experience designer	1	5	4	20							0
			non-functional clamping	damage of the screw joint	calculation and definition of maximum coupling forces	2	4	5	40							0
pneumatic clamping cylinder	joint	release Festo clamping cylinder	destruction-based component	release fasteners	calculation designer	4	5	4	80							0
				improper fasteners	disregard manufacturer	2	3	6	36							0
			damage clamping prism	damage fasteners	calculation and definition of maximum coupling forces	5	5	3	75							0
clamping cylinder	cylinder	broken FESTO cylinder for clamping part	clamping or non-functional product. Respectively the entire machine	wear cylinder	lifetime according to supplier	5	4	2	40							0
	sensor			malfunctioning sensor clamping	visual inspection during operation	4	6	3	72							0
	cylinder			destruction of the war due to overload	Designer calculation	2	8	4	64							0
rotating cylinder	cylinder	broken FESTO cylinder for positioning with	stop the machine	wear cylinder	supplier life time	5	4	2	40							0
	sensor			release position sensor	visual control during operation	3	2	4	24							0
	cylinder			undersized power	designer calculation	2	6	3	36							0
tube	exposed areas	damage to the air supply	pressure loss in the system	wrong route selection	endurance test	4	5	3	60							0
				wrong tube fixation	visual inspection during operation	3	6	4	72							0
shaft	shaft deposition	deflection of the axle (shaft)	rupture of the shaft	insufficient cross-section of the shaft	Designer calculation	2	9	4	72							0
			shaft deformation	insufficient cross-section of the shaft	Designer calculation	6	5	4	120	Calculation control using FEM	S. El Hajjam	Diameter change of shaft	5	4	4	80
			damage the rotary storage	inappropriately chosen the shaft	Designer calculation	3	6	4	72							0
Clamping desk	desk		deformation fixture	insufficient resistance of the carrier plate	Designer calculation	5	3	4	60							0