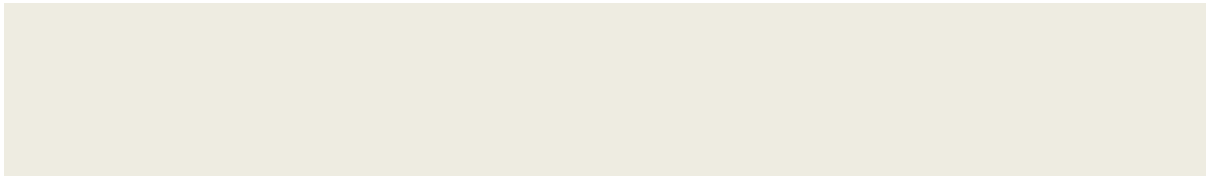
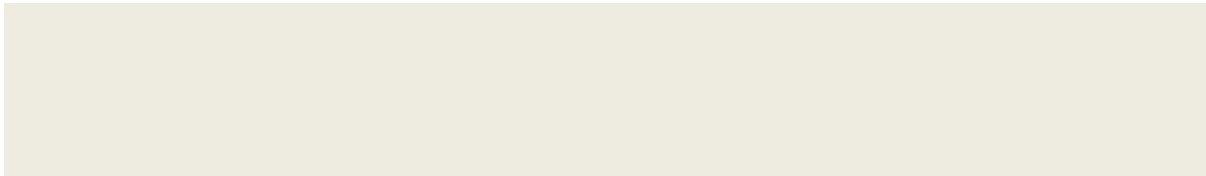


Description of component, subsystem, or function	Symptom (what?)	Effect (so what)	Failure mode (why?)	Probability of failure	Severity of effect	Risk priority
Actuator	Refuses to move	Device Binds and will not open and close	Issue with electrical connections or motor is burned out	1	3	3
Frame	Breaks or refuses to move	device could bind or warp out of shape	foreign objects could bind the slides that allow frame to move	2	3	6
needle	bent/broken	Device will lose accuracy	Needle warps with use on cornstalks	3	2	6
Frame	Pinch Operator hands	Pain	has their hands in between the U	2	2	4
Stalk Holder	Binds and will not move	Corn may not be held as steady	the holder catches on the shaft that it moves along and sticks	3	1	3



		Very				
		Probable	Probable	Occasional	Remote	Improbable
		5	4	3	2	1
Catastrophic	4	20	16	12	8	4
Critical	3	15	12	9	6	3
Marginal	2	10	8	6	4	2
Negligible	1	5	4	3	2	1

Severity of Effect

- Catastrophic** The failure causes substantial damage to the product itself or related items (including people), requiring repair.
- Critical** The failure causes significant damage to the product itself or related items, requiring repair.
- Marginal** The failure causes some damage to the product itself or related items, potentially requiring repair.
- Negligible** The failure causes no significant damage.

Probability of Failure

- Very**
- Probable** Every time
- Probable** Most times
- Occasional** Observed multiple times during the project.

Remote Might be possible during the project.

Improbable Maybe observed once during the project or predicted to happen after hand c

Remedial action

Try and prevent loosening of wires or foreign objects from entering

Create a barrier over slides to prevent foreign matter entry

Use a shorter needle or a shorter load cell

Move handles or cover pinch point

Use a different material to build stalk holders or smooth the holder shaft

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