

ChampBot

			dFMEA	
Item/function	Potential Failure Mode	Potential Cause	Potential Effect(s) of Failure	Current Design Controls
Battery	depleted	too small	loss of control/DNF/no dive	Use proper battery. Switching regulators. FET H-Bridge
Fire	no fire	water interferes with ignition	Lost Points	PTFE insulator sheds water
		Wind prevents/stops ignition		Wind guard, Periodic restart sparks
		ignitor fails to spark		HV, Capacitive Discharge
		battery depleted		Using butane with low autoignition point
		does not ignite		Periodic restart sparks
		wet circuit	Lost Points	Sealed. Reservoir beneath circuit
		No fuel		Check level
	Harm	Fires at wrong time	burn	Warning lights, Warning noise and delay, power light, safety switch. Careful coding
jaw	does not open	battery depleted	Lost Points	see above
		wet circuit	Lost Points	Sealed. Reservoir beneath circuit
Drive unit	does not turn	battery depleted	loss of control/DNF/no dive	see above
	Clutch slippage	wrong setting	poor speed/no dive	Locked out
	Lose comm when dive	weak signal	resurfacing/lost points	Using 27 MHz control. Vertical antenna.
	O ring pops out of groove	Too flexible	leak/motordamage	use small diameter ring
	Harm	Rotates at the wrong time	cut/bruse	Warning lights, Power light, Safety switch. Drive cut-out relay
	Prop smashed	wind, waves, rocks	loss of control/DNF	impact resistant material, glass reenforced
	Slow	Too much drag	Lost points	Lots of Thrust. Drag bar to direct thrust to lift hull from water.
	prop falls off	Chuck loosens	loss of control/DNF	ensure it is tight. Safety wire.
Navigation	Off course	wind	Lost points	Lots of thrust. Piruett turning
	Torque reaction	props rotate same direction	Lost points	Counter thrust using shims