



Slugbotics Jobsite Safety Analysis

Job Step:	Potential Hazards:	Steps for Mitigation
Using DC power supply	Electrocution	<ul style="list-style-type: none">• Set up power supply in clear area of workspace• Cover DC power contacts with electrical tape• Cover AC contacts with flip-down cover• Screw AC wires into power supply before plugging into outlet• Call out “48 volt power on” and wait for acknowledgement before turning on power supply
Powering on ROV	Electrocution	<ul style="list-style-type: none">• Before powering on ROV, visually inspect electronics enclosure• Do not power on ROV if any wires are unconnected or conductors are exposed• Before powering on ROV, loudly ask “OK to power on?”• When confirmation is attained, say “power on” before enabling ROV power

	Injury due to pneumatic components	<ul style="list-style-type: none"> • Do not pressurize pneumatics system until ROV has been turned on • Keep all hands and extremities away from claw and pneumatics while pressurizing • Depressurize system before ROV is turned off
	Injury due to motors	<ul style="list-style-type: none"> • Do not power on ROV motors without motor shrouds installed
Using power outlets in lab	Ground fault (power outlets do not have GFCI circuitry)	<ul style="list-style-type: none"> • Always plug in electrical devices to portable ground fault interrupter -- not directly into wall outlet
	Electrocution	<ul style="list-style-type: none"> • Do not stick foreign objects into electrical outlets • Do not use electrical devices with damaged or frayed power cables --- consult the lab manager
Using air compressor	Explosion, flying shrapnel	<ul style="list-style-type: none"> • Do not allow compressor to be pressurized more than the maximum allowable pressure, labeled on the side of the tank • Never set working pressure higher than 40 PSI • Do not disconnect, tighten, or tamper with pneumatic fittings while the system is pressurized
Soldering	Burns	<ul style="list-style-type: none"> • Do not touch tip of soldering iron • Always return soldering iron to

		stand when not using
	Eye, throat, and lung irritation	<ul style="list-style-type: none"> • Always use carbon filter when soldering
	Fire	<ul style="list-style-type: none"> • Always plug soldering iron into timer -- not directly into wall • If you are done soldering before the timer runs out, set it to zero • Never leave a heated soldering iron unattended
Using Epoxy	Skin irritation	<ul style="list-style-type: none"> • Do not use gloves when applying epoxy • Exercise extreme caution when applying, to not let chemicals contact your skin
	Lung irritation	<ul style="list-style-type: none"> • Always use epoxy in fume hood
Operating power tools	Injury	<ul style="list-style-type: none"> • Always wear safety glasses when operating power tools • Do not operate power tools with loose clothing, loose jewelry, or unsecured long hair • Use additional PPE when required by the Standard Operating Procedure of the tool, found in the lab safety documentation binder • Consult the lab manager if unsure about safety protocols regarding tools • Always have another person in the room, alert to what you are doing

		and ready to help if there is an incident
Operating table top router	Injury	<ul style="list-style-type: none"> • Always wear safety glasses • Always wear hearing protection while spindle is running • Do not operate with loose clothing, loose jewelry, or unsecured long hair • Do not use unless familiar and trained in the Standard Operating Procedure • Always have another person in the room, alert to what you are doing and ready to help if there is an incident • Know the location of all emergency stop buttons
Testing ROV at swimming pool	Falling into water	<ul style="list-style-type: none"> • Unless lowering ROV into water, stay at least 5 feet from the side of the pool • Wear shoes with rubber soles, not flip-flops.
	Electrical shock/electrocution	<ul style="list-style-type: none"> • Do not splash water • If the electronics chamber is open and water comes into contact with the electronics, allow electronics to dry for several hours before turning power on • Ensure no water is pooling inside the electronics chamber

	Dropping something into pool	<ul style="list-style-type: none">• Keep all loose items secured or in boxes• Unless lowering ROV into water, stay at least 5 feet from the side of the pool
Working in the lab	Eye strain, lack of sleep, stress, sloppy work	<ul style="list-style-type: none">• Take regular breaks while working• Do not stay in the lab later than midnight• Do not attempt to work when tired or stressed• Do not eat or drink while in the lab• Do not bring food into the lab