




Manufacturing ROV

TASKS	HAZARDS	CONTROLS
Using heavy machinery and hand tools	Eye injury	Wear protective goggles against sparks and pieces that break off from materials.
	Physical injury	Check all tools for any malfunctions. Do not put any part of the body close to working machinery and wear protective gloves
	Respiratory distress	Wear mask to prevent breathing any material's dust.
Housekeeping	Chemical matters	Assign special work area for chemical experiments.
	Fire	Have a fire extinguisher ready at all times.
	Poisoning	Eating and storage of food is allowed only in specific areas.
	Physical Injuring	Have a first aid kit ready.
Soldering circuit board and other electronic components	Skin burn	Make sure soldering iron switched off when not in use. Do not rush your work with the soldering iron.
	Respiratory distress	Wear mask to prevent breathing any toxic fumes.
	Fire hazard	Make sure soldering iron switched off when not in use. Make sure soldering iron's surrounding is clear. Wear protective gloves to prevent the contact any chemicals(epoxy, plastidip, liquid electric tape, grease) with the skin.
Waterproofing circuit boards and wires	Skin Damage	Wear mask to prevent breathing any toxic fumes.
	Respiratory distress	Wear mask to prevent breathing any toxic fumes.

Managing And Operating ROV

TASKS	HAZARDS	CONTROLS
Loading and unloading the ROV and equipment	Back injury from lifting heavy objects	Bend at hips and knees only, while keeping upper back straight and having a small arch in the lower back. Do not lift any heavy objects above the shoulder level. Do not lift alone.
	Hand Injury	Make sure grip is strong and safe. Make sure the fingers are safe while dropping the object.
	Foot injury	Make sure grip is strong and equipment is not falling.
Setting up the power supply	Over Voltage	Check the voltage supplied by the power supply before connect anything to it.
	Wrong Connection	Check the Anderson Connectors polarity. (Positive and Negative must match.)
	Electrocution	Make sure there are no bare wires and check for any damaged wires.
ROV Dry Test	Injury from motor blades	Do not put hands on the motors while in running.
	Damage to manipulator and frame	Make sure ROV securely placed on the ground to prevent any damage to manipulator and frame.
	Electrical Failure	Check all electrical connection to prevent a short circuit and check the fuse.
Setting and Managing the tether	Tangled tether	Wrap the tether properly, and place everything on transportation cart properly when going to or leaving the pool.
	Tripping on the tether	Make sure tether is laid on the floor without tangling. Make sure tether does not block walking path.
Launching and Retrieving the ROV	Injury due to slipping/ falling around pool deck	Make sure deck crew wear life jackets and non-slip footwear.
	Back strain	Bring a team member to assist while launching and retrieving of ROV.
	Injury from motor blades	Do not touch thrusters while launching and retrieving Equip thrusters with meshes to cover the propellers. Plant warning stickers on thrusters.
	Electrocution	Wear non-conductive gloves. Make sure there are no bare wires and check for any damaged wires. Use non-conductive tools.
	Required Personal Protective Equipment (PPE)	Required Training
	Safety Glasses	Proper use of machinery and tools.
	Protective Gloves	Practice launching and retrieving.
	Gas Masks and Respirators	Before launch check procedures.
Life jacket and non-slip shoes (If situation requires it)	Control safety checklist	