

MTL HydroTech Job Safety Analysis

Task	Hazards	Controls
PVC Cutters	Blade may slip from hand and hurt you or others nearby.	Point PVC cutter blade away from body and carefully cut the PVC pipe.
	May accidentally cut own limb(s).	Hold PVC Cutters with a firm grip and be aware of your surroundings.
	Stray pieces of PVC may hit someone if there is ricochet during the process of cutting.	Two people will hold down either side of the PVC pipe, at a distance, to make sure that no pieces ricochet.
Tightening PVC Pipe	Hitting your hand with the mallet.	Make sure that you hit the PVC pipe precisely in the middle.
	Do not overtighten the PVC pipes and connections.	Hit only once or twice with the mallet for a moderately tight fit. Once the ROV is complete, tighten the PVC and connections.
Drilling	The drill could start spinning out along the surface of the control box, potentially breaking something fragile.	Holding the drill exactly at a 90 degree angle, create a small puncture in the surface of the object in order to keep drill in a stationary position.
	Fingers may be hit/potentially cut off.	Keep all hands / fingers at a reasonable distance away from the point of intercept.
Heat Tools (solder iron, heat gun, hot glue gun)	Risk of burning valuable equipment.	Use heat tools at a reasonable distance from equipment and teammates.
	Risk of burning yourself or others nearby.	Be aware of your surroundings and teammates at all times.
Testing Electrical Equipment / Power Connections	Electrocution due to direct contact with exposed wires.	Do not touch any exposed wires with your bare hands unless you're sure there is no power connection.
	Potential fire hazard due to exposed wires.	Check for flammable objects around the area (cloth, paper, etc...)
	Electrical shorts when placed in the water.	Do not drop electrical objects into water.
Testing ROV Functions	Risk of injury due to spinning motors.	Do not put fingers near the motors, unless the power is off. Place yellow duct tape on shrouds to caution people from putting their fingers near the motors.
	Risk of pinching hands between the manipulator arm.	Slowly clasp arms of the manipulator arm together.
3D Printing Technologies	Breathing in dangerous fume emissions.	3D printers should be used in a well ventilated area. Wear proper PPE in the vicinity of the 3D Printer such as a dust mask, gloves and safety goggles.
Soldering Circuit Boards	Risk of burning yourself and others nearby.	Hold control board gently at the corner.
	Risk of frying circuit boards and components.	Ensure that the solder iron does not touch anything except the joints, and only for a short period of time.