

TRITON ROBOTICS RANGER TEAM JOB SAFETY ANALYSES (JSAs)

Fabrication and Assembly

TASK	HAZARD	PROTOCOL
Power Tools (req. supervision)	Electrical Shock	Check wires; Check for water in workspace.
	Flying Debris	Safety Glasses for all in vicinity; Check material; Material secured down; Notify when starting
	Winding Injuries	Hair tied back; Loose clothing removed
	Direct Injuries	Hands and bodies out of way; Use pushing sticks; Notify all of task before starting
Soldering	Burn injuries	Check soldering iron; Use helping hands; Secure items
	Eye injuries	Safety glasses
	Fumes	Use ventilation. Wear masks as needed; Notify all.
Gluing & ABS Printing	Fumes	Outside; ventilated; wear masks; notify all before starting
	Burns	Use gloves; Wash hands immediately after
	Eye injuries	Safety Glasses; have wash out kit handy

Transporting

TASK	HAZARD	PROTOCOL
Carrying ROV	Heavy lifting	Always lift ROV with a partner. Lift with legs. 2 people to lift ROV; Communicate with partner
	Crushing by toppling	Toolboxes and items stacked can topple; Avoid making stacks too high; Dedicate watcher
	Tripping	Be aware of tether and items on ground; Clear path; Call out items not movable to partners before starting; No running.

ROV Operations

Throughout	Slipping	Watch for water; No running; Call out slippery areas;
	Tripping	Designate walkways; Create specific pathway for tether;
	Heavy Lifting	Always lift ROV with a partner. Lift with legs. 2 people to lift ROV; Communicate with partner
Setup	Pneumatics	Only attach pneumatics if pressure is zero; Visual check of lines before attaching; Do not turn on pneumatics until everyone has responded that they know and are wearing safety glasses
	Electrical	Check wires; Check for water; Ensure GFCI; Ensure all wearing safety glasses;
Operations	Tether	Communicate with tether manager when approaching; Follow designated walkways; No running
	Pinching	Communicate with Pneumatics officer when working around ROV; Do not touch grippers without Pneumatics officer permission; Use Call and Response
	Props	No hands inside ROV when activated. Communicate with Operations and use Call and Response to ensure disarmed.