

1. WEIGHT CLASSIFICATION, LOCOMOTION BONUSES & MULTIBOT ALLOCATION

Official scale verification includes all modular equipment, internal batteries, weapons, and structural armor. Standard locomotion definitions determine class bonus allowances:

CONFIGURATION	MAX WEIGHT ALLOWANCE	LOCOMOTION CRITERIA & DEFINITIONS
Standard (Rolling)	1.00 lb (453.6 g / 16.0 oz)	Continuous rolling elements in floor contact (standard wheels, tracks, continuous belts, omni/mecanum wheels, or whole-body rolling).
Shuffler (+25%)	1.25 lb (567.0 g / 20.0 oz)	Rotational cam-driven or linkage-driven sliding/skating feet without discrete, independent lift-and-place degrees of freedom.
True Walker (+50%)	1.50 lb (680.4 g / 24.0 oz)	No rolling contact elements and no continuous rolling/cam linkage motion. Discrete linear-actuated or articulated legs with distinct, alternating lift-and-place cycles.
Multibots (Cluster Bots)	Scaled (Max 3 Units)	Strict maximum of three (3) independent units per entry. Nominal base weight must be evenly divided across all units. Locomotion bonuses apply per unit according to individual locomotion type.

MULTIBOT WEIGHT ALLOCATION & BONUS CALCULATION:

Nominal base weight (16.00 oz / 1.00 lb) is divided equally by unit count:

- **2-BOT MULTIBOT:** Nominal base allowance is 8.00 oz (0.50 lb / 226.8 g) per bot.
- **3-BOT MULTIBOT:** Nominal base allowance is 5.33 oz (0.333 lb / 151.2 g) per bot.

Example: A 2-bot multibot enters with Bot A utilizing standard wheels and Bot B utilizing a True Walker mechanism (+50% bonus). Bot A base weight is 8.00 oz (226.8 g). Bot B receives a 50% bonus on its 8.00 oz allocation (8.00 oz x 1.50 = 12.00 oz / 340.2 g). Combined allowable entry weight = 20.00 oz (1.25 lb).

2. PROHIBITED SYSTEMS & HAZARD BOT PRE-APPROVAL

MANDATORY ABSOLUTE WEAPON PROHIBITIONS (NON-FLAME STANDARD):

Strictly barred: open flames, combustible fuels (butane, propane, gas cartridges), pyrotechnics, slow-burning fuses, thermal/heated elements, chemical agents, adhesives, foams, and untethered entanglement devices (nets, cords, mono-filament). In addition, RF jamming equipment, unshielded sparking/electrical weapons, and intentional EMF interference are strictly banned.

HAZARD BOT PRE-APPROVAL REQUIREMENTS

Entries meeting either condition below are classified as **Hazard Bots** and require written technical pre-approval prior to event entry:

- **Pneumatics (<=150 psi):** Permitted strictly if operating pressures remain at or below 150 psi. Builders must submit full documentation (component datasheets for all reservoirs, lines, regulators, and valves, plus schematics demonstrating relief valves and safety pressure factors). All pneumatic systems must incorporate an easily accessible manual bleed/vent valve that vents all stored pressure safely before the robot is handled.
- **High-Mass Inertia Weapons (>50% Bot Weight):** Any bot where total moving/spinning weapon mass exceeds 50% of the robot's actual weight (e.g., >0.50 lb weapon on a 1.00 lb bot). Builders must submit engineering documentation (retention shaft verification, bearing load margins, and FEA/burst containment calculations) proving structural integrity against catastrophic failure at full operational RPM.

3. ELECTRICAL SAFETY, DEACTIVATION & BATTERY LIMITS

VOLTAGE & BATTERY CONSTRUCTION

- **Maximum Voltage:** Strictly capped at 3S High Voltage LiPo (3S LiHV).
- **Absolute Voltage Ceiling:** 13.05 V (4.35 V/cell max). Standard 3S LiPo permitted (11.10 V nominal / 12.60 V peak). Voltages >13.05 V are banned.
- **Chemistry & Integrity:** Factory-sealed LiPo, LiHV, LiFePO₄, or NiMH packs only. Packs must be rigid-mounted (secured to the chassis using screws, bolts, rigid brackets, hard-mounted trays, zip ties, hook-and-loop straps, or foam padding, provided a sufficient amount of the chosen method is used to ensure the battery cannot move); exposed soft cells or damaged/swollen packs fail inspection immediately.

RADIO FAILSAFE STANDARD

- 2.4 GHz digital spread-spectrum systems required.
- Drive and weapon outputs must completely drop to zero within **2.0 seconds** of signal loss or radio deactivation.

MANUAL DISCONNECT & DEACTIVATION TIMING

- **Rapid Cutoff:** The manual mechanical disconnect (screw switch or removable link) must be accessible such that an official or builder can completely de-energize the robot in under 15 seconds without placing limbs near weapons.
- **Multibot Isolation:** Every multibot segment must feature its own independent manual disconnect.
- **Full Deactivation:** 100% of electrical power must be fully severed without chassis disassembly.

WEAPON SPIN-DOWN MANDATE

- Upon switch cutoff or radio failsafe actuation, spinning weapons must coast down or actively brake to a complete, dead stop in **under 60 seconds**.

4. MECHANICAL SAFETY, WEAPON LOCKS & TRANSPORT

- **High-Visibility Weapon Locks:** Moving weapons capable of causing injury (spinners, drums, spring arms, flippers/launchers, crushers, pneumatic or hydraulic weapons, axes, hammers, and saws) must have a physical locking pin or clamp in place at all times outside the cage. Locking pins must be painted in neon orange, neon yellow, or other high-visibility safety colors, or fitted with a high-visibility tag. Locks that are not manufactured in a compliant color may instead be brought into compliance with high-visibility tape wrapped around the pin or clamp; event officials will have tape available at inspection for teams who need it.
- **Elevated Test Stands:** When power is connected outside the combat arena, robots must be placed on elevated test blocks ensuring drive wheels and weapons cannot contact any surface if inadvertently engaged. The weapon must additionally be de-powered, either via its dedicated power switch or by disconnecting the weapon battery/circuit, with the high-visibility locking pin still installed.
- **Blade Covers:** Stationary sharp edges, pick axes, and cutter teeth must remain covered with protective guards in the pit area, with the required weapon locking pin still inserted at the same time.

5. MATCH PROCEDURES & JUDGING MATRIX

MATCH PROCEDURES

- **Match Duration:** 3 minutes (180 seconds) continuous run time.
- **Knockout (KO):** A robot unable to demonstrate translational movement within a 10-second count is declared KO. Demonstrating intentional controlled movement on a single side (crab-walking) is permitted.
- **Tap-Outs & Pins:** Drivers may forfeit at any time. Pins are limited to 10 seconds, after which the pinning bot must release and retreat to a safe distance set by event officials based on the arena's size (minimum 2 feet in a standard cage).
- **Team Size:** Each entry is limited to its robot controller(s) plus one (1) additional support member at the table, for a maximum of four (4) people total.

JUDGING MATRIX (11-POINT SYSTEM)

Matches not ending in a KO or tap-out are scored by 3 judges using the official 11-point criteria:

- **Damage (5 Points):** Cumulative functional degradation and structural damage inflicted on the opponent (drivetrain loss, weapon failure, chassis deformation). For multibot entries, any unit left immobile or non-functional by the end of the match weighs heavily toward this score in the opponent's favor.
- **Control (3 Points):** Dictating engagement pace, steering opponents into hazards or poor angles, and defensive deflection.
- **Aggression (3 Points):** Frequency, severity, and intentionality of offensive attacks executed with active weapons or deliberate forward driving.