



Inspiration Robotics  
of Northern California

# TCF Antweight Rules & Regulations

Based on: RobotWars World Series Rules V4.3

**\* = Edited 7-18-23 (Adjusted to North American Rules)**

## 1) Definitions

**Roller** – A robot using wheels or similar full rotation capable component contacting the arena to move.

**Non-Roller** – Any robot not fitting the Roller definition including Shufflers, Walkers and Hovercrafts.

**Flier** – Any robot that moves through self sustained flight. This type of robot is NOT allowed.

**Clusterbot** – A robot which consists of two or more parts (e.g. two half sized robots/botlets)

**Arena** – The area robots are intended to fight in. A fully enclosed safety cover surrounds the arena.

**Pit or Dropoff** – Gaps or spaces in the arena floor, normally at the edges, that a robot may fall into.

## 2) Robot Rules

2a) **Weight limits** – using scales that are accurate to at least one gram:

**\*Antweight Roller: 1 lb**

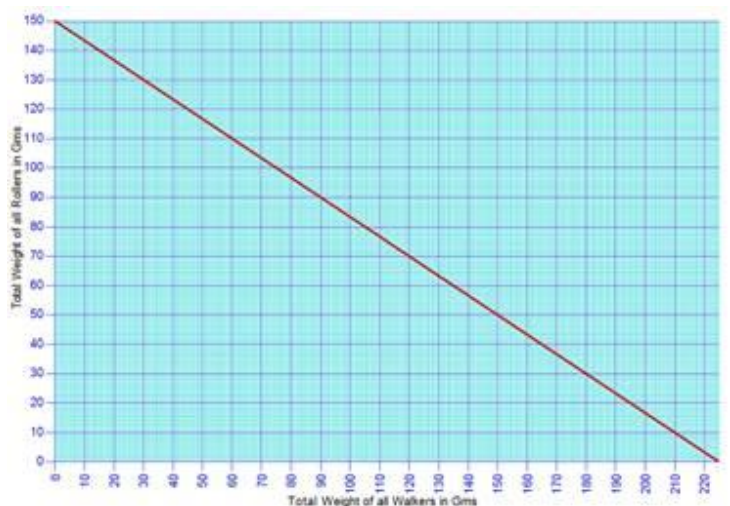
**\*Antweight Non-Roller: 1.5lb**

All parts of a clusterbot must altogether meet the ~~\*size and~~ weight limits of the class in which they are competing. Where a clusterbot is composed of Roller and Non-Roller parts, then the following formula or graph apply:

Total weight of **Rollers** = **Roller Limit** – ((2/3) \*  
Total weight of **Non-Rollers**)

or

Total weight of **Non-Rollers** = 1.5 \* (**Roller Limit**  
– Total weight of **Rollers**)





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\*2b) **Size limits:** robots must fit completely inside a cube of the following dimensions, it does not have to sit flat on the floor of the cube:

———— **Antweight: 4" x 4" x 4"**

**(North American antweight class is only limited by weight, not size)**

~~\*Robots may only expand from their size limit once a fight has begun, and only if the expansion is instigated by remote control (i.e. not just by being springy). If a robot in a clusters expanding is triggered by another cluster part they must start the fight how they fit together in the cube.~~

2c) Robots must have an externally accessible way of being shut down (e.g. a power switch, removable link or battery plug) that can be operated without tools.

2d) Radios may use the following frequencies: 27 MHz, 40 MHz, 418 MHz, 433-434 MHz, 868 MHz and 2.45(often 2.4\*) GHz. All Radios must comply with all relevant rules and regulations.

2e) For safety purposes, all weaponry must have the capability of being deactivated by remote control.

2f) Failsafe – The robot shall cease all motion when the controlling transmitter is switched off.

2g) The following weapon types are not permitted:

- Glue or sticky pad weapons
- Fluid based weapons (treacle guns, etc.)
- String or entanglement weapons
- Flame based weapons
- The use of electricity as a weapon
- Explosive weapons
- Rotating weapons that may shatter (as opposed to breaking off)
- Magnetic/inductive systems

2h) Any system involving the use of pressurized gas or liquid is limited to 100 p.s.i. (7 Bar).

2i) Weapons are not permitted to deliberately detach completely from the robot, but may be partially separated as long as it is connected by a tether of no more than 3 feet (914mm). The tether may not be used as an entanglement weapon.

2j) All sharp edges must have protective covers outside the arena. All protective covers are to be made clearly visible.

2k) Batteries must not contain liquid acid, or electrolyte, or exceed a maximum of 24 volts.



### 3) Arena Rules

3a) All battles must take place in an arena, regardless of weapons being used in the battle. Arena doors must be closed before any fight begins, regardless of weapon type.

3b) An arena's safety enclosure must fully enclose the arena during fights. 4mm polycarbonate is the minimum recommended thickness for an arena safety enclosure. Small sacrificial kick plates are recommended where the arena fighting surface and external walls meet.

3c) The arena will be a raised platform with a recommended area of at least 30 inches (762mm) square.

3d) It is recommended that at least 25% of the edge of the arena must be un-walled, to allow robots to drop directly into the pit or dropoff that surrounds the arena.

3e) The minimum recommended gap in the arena floor for pits and dropoffs is 140mm.

### 4) Combat Rules

4a) Battles will last for a maximum of three minutes. The judges will decide the winner of any battle that has not ended after the time limit.

4b) A robot that falls off the arena and touches the bottom of the pit or dropoff has lost. If a robot bounces into and out of the pit or dropoff without touching the bottom (Or robot that has lost within the pit or dropoff) the fight may continue.

4c) When any robot is immobile or lacks controlled motion then a judge will start a 10 second countdown after which the robot will have lost if it is unable to restore controlled motion. Contact between an immobile robot and an opponent will reset the count. If a robot is counted out the immobilization is retrospectively considered to have applied at the start of the count (*For cases where a robot may leave the arena while their opponent is being counted out*).

4d) At any time in a fight, a robot may surrender, if so they will have lost (The roboteer may clearly shout stop).

4e) Robots may hold or pin each other for a maximum of 20 seconds. The judge will give a verbal warning for the contestants to disengage. If they are unable to do so the battle will be paused and the robots separated where they are. The battle will then recommence immediately.

4f) Outside manipulation is not permitted during the contest (they may be manipulated by a judge during a pause in the battle, as described in the previous rule).



4g) A Clusterbot will have lost when all of its botlets have been eliminated

4h) If a robot leaves the arena after the battle has started but before the robots have made contact the battle is to be restarted. A maximum of 2 restarts is allowed per robot.

4i) The Aggressor Rule – If two robots fall into a pit or dropoff at the same time ending the fight, where one bot can be clearly identified as the aggressor to this action, the aggressor is judged to have won. Otherwise consider under rule 4j. *Normally this occurs where one robot is pushing the other, reactions from spinning weaponry hits are not considered under 4i.*

4j) If opposing robots have left the arena simultaneously (and cannot be decided under rule 4i) then the fight will be paused, the robots involved placed immediately back in their start positions (Without repairs) and the fight restarted. If a robot is unable to continue it will be judged to have lost, if both robots are unable to continue the judges will decide the winner.

4k) Common Sense Winner – If a robot damages another robot, rendering it completely incapable of continuing to fight in any manner (Such as loss of power or no method of any movement), but the damaging robot falls into a pit or dropoff as a result of the attack, as long as the damaging robot is capable of continuing to fight, then the judges may award the damaging robot the win at their discretion.

## 5) Competition Guidelines

5a) Contestants must obey the event organizer at all times, or be disqualified. Event organizers have final say on any issues raised at an event.

5b) There shall be 3 neutral judges identified before each battle. If a contestant has an objection to one or more of the judges then they shall make it clear before the match begins. The event organizers will then decide if the complaint is valid.

5c) Before competition commences, each robot will be checked by the event organizers to ensure that a minimum of the following rules are complied with before being allowed to compete: weight, size, power link/switch, failsafe, sharp edges.

5d) All teams must be self-contained in terms of driver, transmitter, robots and battery packs, i.e. these cannot be shared with another team. Clusterbots may use additional drivers from other teams but must comply with all other parts of this rule.

5e) Robots should only be handled by the robots' team or event organizers. It is the drivers responsibility to ensure their robot is safe and all weapons are inactive before retrieval.



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5f) A robot must be placed in the arena when called to fight within five minutes of being called by the event organizer (this is a maximum limit, contestants are encouraged to be ready to fight as soon as possible). Robots failing to be ready within this time may be judged to have lost the fight.

g) LiPos must be charged in LiPo bags or a similarly suitable container.

5h) Robots must only be operated inside the arena or normal testing for functionality on a bench. Spinning or otherwise dangerous weaponry may not be used at all outside of an arena with the doors closed.

5i) Non-combatants must not touch the arena and keep back from it during battles.

5j) A LiPo bag or similarly suitable container must be readily available by the arena during each fight.

5k) A team may enter a maximum of four robots of which three may be Rollers and one Non-Roller or Cluster (Where robot numbers require limiting it is recommended that the number of Rollers a team may enter is reduced first over Non-Rollers or Clusters).