

Skills Ontario 2025 Robotics Q and A Document

Updated: March 24th

A. General

A.1- What is this document?

This document is a supplement to the competition scope that answers specific questions teams may have about ambiguities in the scope. This document supersedes the current version of the scope found on www.skillsontario.com.

A.2 – What is the Mail list?

The mail list is the fastest way to receive information about the competition. It is recommended that at least 1 team member or coach should be receiving email updates. Email dan.kurz@dsb1.ca to be added to the mail list.

B. The Court

B1. What are the updated rules on wrapping blocks in duct tape from Skills Canada?

Appendix A has been modified at the national level to allow the duct tape on the blocks to have a single overlap. Tape must still be applied smoothly and preserve the shape of the block. This was changed to prevent the edges of the tape from peeling up during use and to make applying the tape easier.

C. Game Play

C1: Can teams collect balls and then dump them all over just before the buzzer?

Yes.

C2: Can teams block their opponent's shots.

Yes, blocking is permitted. The extent of the blocking is limited by the in-game size restrictions and the walls.

C3: Does “reaching over walls” in 3.2.9 include breaking the interior vertical plane of a wall, but not fully crossing it?

Yes, no part of a team’s entry may break the vertical plane formed by the inside (or outside) edges of any walls.

C4: What happens if a snowfort falls over after the buzzer?

The height of the snowfort will be measured after the end-game buzzer, at its end-game stable height.

The end-game stable height will be the height measured 5 seconds after all legal game pieces have come to rest.

C5: What happens if a snowball is thrown after the end-game buzzer?

This is an illegally thrown snowball, any scored items that it affects will be replaced, and the snowball will be returned to its last legal position. Teams will also be given a warning.

Note for Autonomous Robots: They should be turned off immediately after the buzzer by a non-driving team member.

D. Robot Design

D1: Rule 5.1.3.2 says “Snowballs are the only way a team can interact with their opponent”. How will robots be tested during robot inspection to ensure that they are only interacting with the other team using snowballs?

A snowball will be placed on top the opposite “autonomous-tele-op” barrier. The judge will instruct the team to perform various actions from various positions and orientations that could include dry firing, movement or activating specific systems. If the snowball is knocked off the wall, the test will be considered failed and will not have passed inspection.

Note: Depending on the design of the robot, other tests may be performed by the judge to ensure teams are in compliance with rule 5.1.3.2.

D2. All of the size restrictions are confusing. Can you please clarify?

There are 2 sets of volume restrictions for the tele-op and autonomous entries this year:

1. Starting Configuration Volume Restrictions:

- a. The entire Tele-Op entry must be less than 4 cubic feet. Just like other years.*
- b. **New:** The autonomous bots get their own volume and must be less than 1 cubic foot so $12 \times 12 \times 12 = 1728$ cubic inches.*

2. In-Game Volume Restrictions (After the match starts):

Note: These rules are in place to restrict excessive blocking.

- a. Individual tele-op bots cannot expand beyond a 30" square in the horizontal plane; but they have no height restrictions. This will be tested during inspection by placing individual bots in the starting area and then expanding to their maximum size. Bots must fit within the vertical planes formed by the outside edge of the 30x30 square.*
- b. Autonomous bots must fit within a 24-inch cube. In other words: they can't be more than 24" wide, tall or long.*

D3: Can teams use a wireless system to start their autonomous robots?

Yes. Autonomous bots can be started wirelessly 10s before the start of the match, just like pressing a button on the bot. The remote device must then be placed on the floor beside the court and not touched until the match is over. There can be no communication between the starting device and the autonomous robot during the 4-minute match.

D4: Are commercially available motors that go above 24V in their internal circuitry legal?

Yes. As long as the continuous power rating in the branch (wires) cannot exceed 256W. See section 8.5.2.1. If you are planning on modifying a motor or doing something unconventional, please check with me at dan.kurz@dsb1.ca to make sure it is ok.

D5: Can teams use a flashlight to assist in aiming?

No. (See rule 5.1.3.2)

D6: Can teams use an “air blower system” to move snowballs around on their side of the court, including in or out of the autonomous zone.

Maybe, Technically, this may be permitted, but it would be very difficult for teams to pass the inspection procedure in question D1. Teams opting for a blowing strategy will be subject to further testing to ensure that there cannot be any interaction, intentional or otherwise, with the other team.

E. The Skills Ontario Competition

E1. Do competitors need to wear safety glasses this year?

Yes. Everyone in the robotics area must wear safety glasses at all times during the competition.

E2. Can drivers lean over the fence to get a better view of the snowballs against the back wall?

Yes, drivers are permitted to lean over the back wall of the court for viewing purposes. They are not permitted to lean on the back wall, nor are they permitted to reach over the back wall or into the court.

E3. What happens if balls bounce unintentionally off of a driver/judge and then back into the court?

The ball will remain in play until the end of the match, if the judge determines that the ball made a difference in the overall outcome of the game, the match may be replayed. Note, intentional removal of snowballs from the court is prohibited and covered in section 6.2.2.1.