

Q&A1_Real

For questions received by November 14, 2020.

Please send your questions after carefully reading the Rulebook and express your meaning as clearly as possible. Thank you in advance for your cooperation.

If you can't find the answers for the question you submitted in ASK page of ABU Robocon official website, these questions may fall into following two situations:

1. The answer to the question can be found directly from the rulebook.
2. They duplicate with other question.

1 Terms and Definitions

Q1-1) Can the whole rack being used for storing the arrows be lifted by the robot?

A: No, it is not allowed. The arrow rack as a game facility is part of the game field and can only be placed in the storage area and may not be moved.

2 Game Procedure and Competition Tasks

2.1 Game Facilities and Score Objects

Q2.1-1) What is the material of the arrow wings?

A: The arrow wings are made of silicone rubber.

Q2.1-2) Our team is having a difficulty in recreating the arrow rack. So could you send us some data with measurements and materials specifications about the arrow rack?

A: Please download the Figures on the GAME RULES page. 05.00 is the drawing of the Arrow Rack.

Q2.1-3) Will the arrow rack be hold to the ground and cannot be moved?

A: The arrow rack itself is heavier and is not fixed to the ground, but it can't be obviously moved out from the storage zone. If the robot strongly impacts the arrow rack, it will be warned.

Q2.1-4) How will the arrow be positioned on the rack?

A: The arrow head is placed downward on the rubber ring of the lower beam, the plume is upward, and the body is leaning against the groove of the upper beam.

Q2.1-5) What is the material and the dimension of the ring shape on the arrow rack?

A: The translucent rubber ring is sized 22.5 mm in outer diameter, 17 mm in inner diameter, and its outer edge has a groove of 1.2 mm in depth.

2.2 Before the Game Starts

Q2.2-1) Can the direction of the arrows on the rack be changed freely? Or is it specified?

A: The arrow on the arrow rack must be head down, plume up, as shown in the video.

2.3 At the start of the game and during the game

Q2.3-1) In Rulebook 2.3, is the direction of the arrow setting in free up and down?

A: No. The Arrow must be arranged in the Arrow Rack in the way as the head is down and the plume is up.

Q2.3-2) Can we use zig to replenish all the arrows on the arrow rack? It means that we will put the 5 arrows on the zig and move the zig to the arrow racks to replenish the arrow.

A: It is allowed to use no powered auxiliary tool for setting arrows on the Arrow Rack, providing that it may not damage the arrow and must be removed out of the game field immediately after replenishing.

2.4 Tasks of Robots

Q2.4-1) Does this condition of TR also apply to DR in Rulebook 2.4.1 b)?

A: Yes, the requirements for TR in rule 2.4.1 b) apply to the DR that throw arrows in its team's outer area.

Q2.4-2) What is the definition of being in the outer area in the Rulebook 2.4.2?

A: Rule 2.4.2 does not contain the phrase "in the Outer Area". If we say that a robot is in the Outer Area, it means that the orthographic projection of its any part on the ground does not exceed the Outer Area.

Q2.4-3) Can DR take arrows from Arrow Rack before using 5 arrows?

A: No, it's not allowed.

Q2.4-4) Can TR shoot arrows without moving nor turning its direction by using the two shooters on a robot aiming at different pots in turn?

A: Yes, it can.

Q2.4-5) When opponent's DR holding type II or type III table and shaking table, can DR catch the table and try to stop it? If it is OK, DR may unintentionally impact opponent's DR trying to stop table. How is the action judged?

A: As you said, this impact was unintentional. There is no need to judge on unintentional conduct, even with consequences.

Q2.4-6) Can DR take arrows from pots of own team in order to shoot the arrow again or use it for blocking opponent's shooting?

A: The arrow in your team's pot has been scored. If you want to give up this score, your DR can take it out, but can't put it back again. If you want to use the removed arrow for other purpose, should be careful not to violate other rules.

Q2.4-7) Can DR use arrow holding in order to change course of our team's arrow?

A: You didn't say where the DR is. If DR is in the inner area, this is equivalent to DR throwing arrow in the inner area.

Q2.4-8) Do I need to make a declaration when replenishing the arrow to Arrow rack?

A: No, you needn't.

Q2.4-9) Which is the responsibility if the handles are damaged while turning the pot table handles to each other?

A: Damage to the game facilities is the responsibility of the team. The referee will decide according to the circumstances.

Q2.4-10) If TR and DR aim at the same spot at the same timing or consecutively in rule book 2.4.2 b ii, does it violate the rule?

A: What you say should be Rule 2.4.1 b) ii. Although this is rare, if it happens, it does not violate the rules, since the subject of Rule 2.4.1 b) ii is TR or DR.

Q2.4-11) 2.4.2 g says that DR can throw the arrows from outer region to the pot if it gives up defensive task, does this mean that it won't be able to shift back to defending after it is done with throwing this arrow?

A: No. as long as DR goes back to its team's inner area completely, it can take on the defensive task again.

Q2.4-12) Can the DR shoot an arrow from above the inner area while in the outer area?

A: No, it is not allowed. Any part of the DR throwing arrow in the outer area may not extend into the inner area and its above.

Q2.4-13) If the other team DR is holding Type II or Type III pot table handle, can my team DR

grab it?

A: Don't recommend you taking this risk, see Q2.4-7).

Q2.4-14) Is it possible for the robot to hold 6 or more arrows during the game?

A: Except the preloaded arrows, the game rules do not limit the number of arrows held by robot.

Q2.4-15) If TR throws an arrow successfully in the first POT and throws the next arrow towards some other POT which is Unsuccessful, Can it now throw the next arrow in the first POT?

A: Yes, it can.

Q2.4-16) In which case can the robot re-aim the pot that it has put an arrow in?

1. when a player aims at another pot and an arrow is placed there
2. When you aim for another pot, regardless of whether the arrow is in

A: After the robot throws an arrow to another pot, whether or not the arrow enters into the pot, the robot can re-throw an arrow to the pot that has already been thrown an arrow into.

Q2.4-17) If the DR throws in an arrow, does the rule in 2.4.1 b of TR apply? The following three patterns of answers are expected to be given to this question.

1. The rule in 2.4.1 b does not apply to DR: DR can throw more than one arrow at a time, or they can throw more than one arrow in a row into a single pot.
2. The rules in 2.4.1 b also apply to DR, and these rules apply to each robot. That is, the DR can throw arrows at the same time as the TR is throwing arrows, and the DR can throw them into the pot that the TR threw them into immediately afterwards
3. The rules in 2.4.1 b also apply to DRs, and these rules apply to teams. That is, the DR cannot throw an arrow at the same time the TR is throwing an arrow, and the DR cannot throw an arrow into a pot thrown in by the TR immediately afterwards.

A: You thought too much. The DR that runs in own Outer Area can be regarded as another TR, that is, it, to be as TR, can complete TR's tasks according to rule 2.4.1, and is also subjected by the restrictions to TR. Also, rule 2.4.1 is for a single TR, whether one or two TR in the outer zone. This answer is closer to the second answer pattern in your question.

Q2.4-18) For 2.4.1c, does the term "used" mean that five arrows were launched from the robot? For example, can't the robot pick up the arrows from the rack while the DR is using its preloaded arrows for jamming?

A: DR's intercepting with preloaded arrows is also considered as "use". That is, if four preloaded arrows have been thrown out by robots, while DR is using a preloaded arrow to intercept the arrow thrown by opponent, at this time, robot can pick up arrows from the arrow rack.

Q2.4-19) "According to Rule 2.4.1b)ii, "if an arrow is thrown into a certain pot, TR must immediately turn to another Pot,"

1. is it right that after one of TR or DR throws an Arrow into a Pot, can the other robot throw another Arrow into the same Pot? It is difficult for a referee to memorize the order in which TR and DR throw arrows.

A: Two robots can throw arrows into the same pot at the same time. You don't have to think about how judges remember.

2. after TR throws an Arrow into a Pot, does this rule prohibit TR from throwing another Arrow into the same Pot? Thus, after TR throws an Arrow into a Pot, is TR allowed to throw another Arrow into the same Pot only after TR throws an Arrow into another Pot or after TR drops an Arrow on the ground? We mean two following situations by the phrase ""TR drops the Arrow on the ground.

Situation 1: TR fails to throw and the Arrow lands on the ground.

Situation 2: TR intentionally throws the Arrow on the ground.

A: As long as the arrow you said is thrown into next pot or falls anywhere whatever the reasons are, TR throws the next arrow into the previous pot again is not considered as continuous entering into the same pot.

3. if TR cannot throw Arrows into the same Pot in series, what penalty is imposed on the team when TR throws an Arrow into a Pot after TR throws another Arrow into the same Pot? We think it is appropriate that a referee returns one Arrow in the Pot to the team in addition to the compulsory retry.

A: Certainly, the compulsory retry is required. The arrow you said stays in the pot, and the referee will make a record. It has no value in scoring and Great Victory.

Q2.4-20) According to Rule 2.4.1c), "Only after the five (5) Arrows preloaded on TR and/or DR are used up, TR can i. pick up the Arrows from its team's Arrow Rack; or ii. pick up the Arrows that landed on the ground of the Outer Area; or iii. directly receive the Arrows delivered by DR,"

1. after the five Arrows in TR or DR during the setting time have been removed from the TR or DR, can TR do the actions described in Rule 2.4.1c).i, ii, and iii? We wonder whether TR or DR can use the five Arrows in any way. For example, we think TR can pick up the Arrows from the Arrow Rack after the DR drops five Arrows on the ground that were loaded in DR during the setting time.

A: In a common sense, the preloaded arrows in this game are used to complete the task and gain score. If you think that throwing an arrow onto the ground is also a valuable use, we do not encourage, but we do not object.

2. do Rule 2.4.1c).i, ii, and iii apply to Arrows other than the five Arrows that were loaded in TR or DR during the setting time?

A: In the rulebook, the conditions stated in 2.4.1) c relate only to five arrows preloaded on TR and /or DR.

Q2.4-21) Can the DR continue to rotate a particular Pot or wave Arrows DR have in order to interfere with it that the opponent can't throw or launch Arrows to it at all?

A: Yes, it is allowed.

Q2.4-22) According to the rule book, the DR can stride and jump over the baffle. Is it allowed to touch the top surface of baffle?

A: Yes, it is allowed.

Q2.4-23) How long DR can hold the Handle of Pot? Please specify.

A: It can hold the handle as long as it wants.

Q2.4-24) Can any mechanism mounted on DR body be used to deflect arrows from the other team without using an intercepting arrow or without establishing any physical contact with the arrow?

A: It is not allowed.

2.5 Retry

Q2.5-1) During retry, if the arrow happened to be simultaneously in contact with the robot and the game field, could we adjust the position of the arrow during retry?

A: As per Rule 2.5 d), during retry, the team members can only adjust and change the position of the Arrows carried on the robot.

Q2.5-2) In the Rule 2.5.d), there is "During retry, the team members can adjust and change the position of the Arrows carried on the robot." If TR is in contact with an Arrow on the ground when

a team applies for a retry, can team members load the arrow on the robot during retry, according to Rule 2.5.d)?

A: It is not allowed. The arrow you mentioned is on the ground but not on the robot that needs retry.

Q2.5-3) For the retry after DR access to the Inner zone completely, can we retry DR at DR start zone in Outer zone?

A: Allowing DR to fully enter the inner zone to use its retry zone is a convenience provided for it. If you are willing to give up this convenience, you can certainly retry in the DR start zone.

2.6 Scoring

Q2.6-1) What if the arrow that scored falls down due to rotation of the POT table by DR?

A: For score, only the status at the end of the game is considered. If the arrow scored originally in the Pot is in the no-scored status at the end of the game due to the rotation of the Pot Table, it will not be scored.

Q2.6-2) What if the arrow shown in Rulebook Fig.5-k falls in POT after some time?

A: For score, only the status at the end of the game is considered. If the arrow meets the scoring conditions at the end of the game, it can be scored.

2.7 End of the game

3 Deciding the winner

4 Robot

Q4-1) Can robots use wind power to thrust themselves on the ground?

A: It is not allowed.

Q4-2) Is it okay to stretch an arm or robot connected by a flexible cord from one robot?

A: The robots are allowed to stretch an arm. The two robots connected each other by a flexible cord can't be considered as one robot.

Q4-3) Can we connect 2 batteries in series to have a total voltage of 42 volts with individual batteries being less than 24 V?

A: It is not allowed. As Rule 4.8 c) says, when connecting batteries in series, the total voltage must be 24V or less.

Q4-4) Can we put different parts with completely different functions on the robot for each game? In the other words, is it possible to change the mechanism of the robot for each game?

A: It is not allowed.

5 Violations

Q5-1) Is it a violation, if the nth arrow thrown by our robot enters in the same POT (in which (n-1th) arrow was thrown) due to Interference of the opponent's DR?

A: Yes, it is violation, because these two Arrows are thrown by your robot in succession.

Q5-2) Fence has rules on what surfaces the robot can touch, is there any rules for Baffle as well?

A: The robot can touch any surface of the baffle. But be careful, it can't break other rules at this time.

Q5-3) If DR drops the arrow on the ground in inner zone, is it consider as violation?

A: If DR accidentally drops the arrow on the ground of the inner area or intentionally throw the arrow to the pot but the arrow does not enter into the pot, it is not considered as violation

Q5-4) If opponent DR is spinning the table, can our DR stop the spinning table?

A: Yes, it can. But, be aware that if your robot is damaged when it stops the spinning table, the opponent is not responsible.

Q5-5) Can DR keep spinning only one table from the beginning until the end of the game?

A: During the game of three minutes, DR can turn any pot table. Of course, if you like, it can turn a certain pot table, no matter how long.

Q5-6) If both robot holds the handle of the turning table and the robot which later hold the handle breaks while both robots is trying to turn the table in opposite directions, will the robot which holds the handle first be disqualified or considered as violation?

A: If the opponent's robot holds the handle and turns the pot table first, and your robot tries to touch the rotating pot table, it will be considered as that your robot takes the risk being damaged itself.

Q5-7) If one robot turns the table while the other robot is moving and the turning table hits the robot which is moving, will this be counted as a violation? If yes, is this a violation to the robot which is moving or the robot which is turning the table?

A: The orthographic projection of the rotating pot table sweeps a circular area on the ground. For convenience, it can be called as a forbidden area. If the robot A enters the forbidden area before the robot B holds the handle and start turning the pot table, and the robot A is hit by the rotating table, then the robot B fouls. If the robot A try to enter the forbidden area while the robot B is turning the pot table, and the robot A is hit, then neither robot is foul regardless whether the robot A is damaged or not.

6 Disqualifications

7 Safety

8 Teams

9 Others