

Robocon Malaysia 2022

FAQ

This is the compilation of FAQs updated on 1 June 2022.

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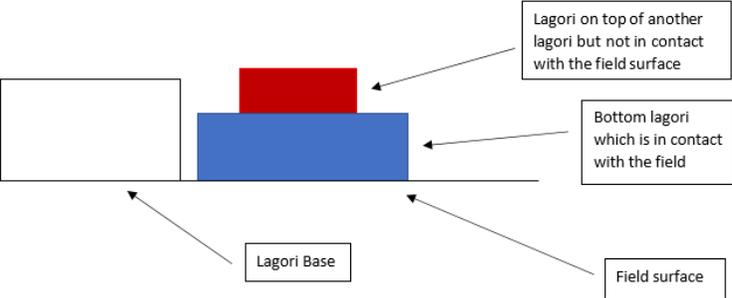
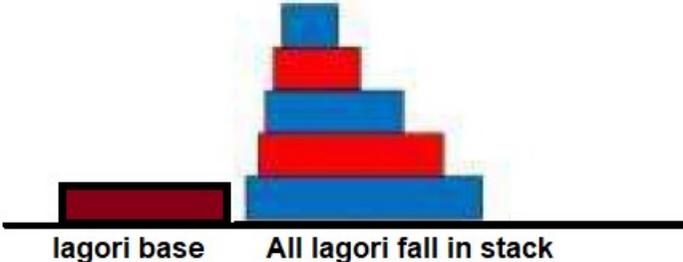
1. Terms and Definitions

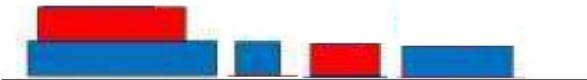
FAQ #	Question	Answer
1.2-1	Robots must be autonomous or manual?	As stated in Section 1.2 of the rule book, the robots can be either manual or automatic.
1.2-2	Is it allowed for R1 to be a static robot? Meaning, no wheels attached to it.	Yes, it is allowed.
1.5-1	Can the BOH move when the Seeker R2 is piling up the lagori discs? For example, spinning around while maintaining its position on top of the pipe and plate?	Yes, as long as the conditions of BOH in Section 1.5 are met. In addition, the plate should be fixed with the robot i.e. no relative motion between the robot and the plate is permissible.
1.5-2	BOH must be placed at the top of the robot's head, can we use any mechanism (suction or a vacuum) under the BOH?	No, it is not allowed.
1.5-3	Since the ABU Robocon will provide pipe and plate for Ball on Head (BH) for uniformity, does Robocon Malaysia 2022 provide the pipe and plate for the BH as well?	No, it is as stated in Section 1.5. The team must prepare the pipe and plate according to the specifications given in the rule book. The colour is blue, as shown in the following figure.

		
1.5-4	<p>If pipe and plate are not provided, what materials are allowed to be used for the pipe and plate? Can PVC or MS be used? Can whole BOH be made just from MS or PVC? Or is it an MS plate and a PVC pipe?</p>	<p>The allowed materials are MS or PVC. The whole plate and pipe to support BOH can be made in combination of the allowed materials.</p>
1.5-5	<p>How much percentage error is acceptable for the thickness and diameter of the materials used for BOH?</p>	<p>±5%, as stated in Section 8.2 of the rule book.</p>
1.5-6	<p>Can the head plate be attached to a moveable platform? It will be at the top of the robot and comply with other rules.</p>	<p>Yes, it is allowed. Refer FAQ1 1.5-1 (ABU ROBOCON)</p>
1.5-7	<p>Can we have any defence system for BOH?</p>	<p>Yes, as long as it complies with all the rules.</p>
1.5-8	<p>It is stated that the allowed materials are PVC pipe and metal steel plate. However, we could not find the exact dimension of the materials, mainly the thickness of PVC pipe could not meet the requirement. What if we used 3D printing with Polylactic Acid (PLA) plastic for both pipe and plate, is it acceptable?</p>	<p>No, it is not allowed. You must use PVC or MS. Any other materials apart from PVC or MS are not allowed.</p>

1.5-9	For BOH part, can the screw head, functioning as the attaching mechanism between the robot and the plate, protrude the BOH plate?	Yes, it is allowed as long as the protrusion does not give any additional meaning to the functionality of the BOH.
1.5-10	Can we paint the BOH pipe and plate blue instead of buying a blue PVC or blue MS?	Yes, it is allowed.
1.5-11	Are we allowed to use cable ties or bolts and nuts to fix BOH plate on R2 as the fastener used will protrude above the upper surface of BOH plate?	Yes, it is allowed. Refer to 1.5-9.
1.5-12	Can the BOH material made from wood for the plate instead of PVC or MS?	No, it is not allowed. Please refer FAQ 1.5-8.
1.7	From rule 1.7, Only Seeker 2 can enter Lagori Area. Can my Hitter 2 move through the Lagori Area?	No, it is not allowed.
1.12	Can the whole of R1 enter the penalty zone to throw at the lagori discs at the lagori base (lagori break) as long as it does not exceed 10 seconds?	No, it is not allowed. The ground plane of the robot must stay in R1SZ when it is throwing the Seeker balls, however it can extend outside in the space above. Please refer to Section 2.1.10 and Section 2.2.3.
1.13-1 NEW	The Rulebook 1.13 mentions that " <i>Team members will load the Seeker Balls to the Seeker R1 during the setting time. Up to 3 balls can be loaded</i> ". So can we load 1 seeker ball in Seeker R1 and remaining 2 seeker balls in Seeker R2, which, later Seeker R2 will pass it to Seeker R1.?	No, it is not allowed.

<p>1.13-2 NEW</p>	<p>The Rulebook 1.13 mentions that up to 3 balls can be loaded into Seeker R1. When round start, Seeker R1 throw seeker ball one by one to hit the lagori. Let say, the first ball has been thrown, and suddenly due to unexpected error on the seeker R1, the other two balls moving out from the robot and touch the ground. Can the seeker team ask for retry to use the remaining ball to make the remaining throwing attempts?</p>	<p>The seeker team can ask for retry with the remaining balls if the balls were not already in the throwing action.</p>
<p>1.17-1</p>	<p>Since the lagori is made of polyurethane foam which is soft, are we allowed to compress the lagori using R2 as long as it does not permanently deform its shape?</p>	<p>Yes, it is allowed.</p>
<p>1.17-2</p>	<p>If the lagori tears or puncture slightly when it is being held by R2 Seeker, will that be considered as a violation or disqualification?</p>	<p>It is subjected to judge's decision. Any case deemed intentional however, the team will be disqualified.</p>
<p>1.18-1</p>	<p>What if some of the discs are stacked together whilst broken from the pile and may not come into contact with the surface? Will points still be given?</p>	<p>Only lagori that touches or is in contact with field surface is considered broken and will get points.</p>
<p>1.18-2</p>	<p>Here it says that the lagori is considered broken if a part of Lagori disc(s) come in contact with the field surface. If so, what about cases such as when a certain lagori is on top of another lagori, hence being not in contact with the field surface but the lagori beneath it is in contact with the field surface? Does that count as Lagori Break as well?</p>	<p>See answer 1.18-1. With reference to the figure, points are given only for the blue lagori.</p>

		
<p>1.18-3 NEW</p>	<p>During the lagori break, the seeker hit the lagori and the lagori fall from the base in stack like the figure show below:</p>  <p>If the break time is not yet finished and the seeker's team still have remaining balls not in use, can seeker R1 throw the remaining balls to break apart the stack so that all of them come in contact with the field surface?</p>	<p>Yes, it is allowed, as long as it follows all the other rules.</p>
<p>1.18-4 NEW</p>	<p>We have a situation where we did not manage to break all the lagori (some lagori) still intact together while touching the field surface (figure</p>	<p>For lagori break you will get 20 points, and for lagori pile you will get 40 points. One lagori disk</p>

	<p>A). However, we are able to pile all the lagori back in the original order. In this case, how are the points being calculated?</p> <div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>A.</p>  <p>Lagori break</p> </div> <div style="text-align: center;"> <p>B.</p>  <p>Lagori Pile</p> </div> </div> </div>	<p>which is not counted for during the lagori break will not be counted as well for the lagori pile.</p>
1.20-1	<p>During “Lagori Pile”, can the lagori discs be piled up next to the Seeker R2 (or projected into seeker R2 body) before putting the completed pile on the lagori base?</p>	<p>Yes, however, the “Lagori Pile” points will only be awarded when any (if not, all) lagori disc is piled by the seeker R2 on the lagori base according to the pile arrangement depicted in Fig 4 in the rule book.</p>
1.20-2	<p>From rule 1.20 can we pile lagori with fewer disk in decreasing order? As if we can pile lagori discs in the following order as 4-3-2-1 or 3-2-1 or 5-4-3, with 10 points of each lagori piled.</p>	<p>You have to pile the lagori in the original order on top the lagori base (see Figure 4 in game rules book). You get points based of the number of lagori that you pile on the lagori base. Fewer disks still get points if the arrangement is in the correct order.</p>
1.20-3	<p>It is stated that a Lagori disc which has gone out of the Lagori Area cannot be used. For instance, the 3rd Lagori (350mm) has gone out of the Lagori</p>	<p>For this situation, the team will get points for the 3rd lagori during lagori break. However, for</p>

	Area and thus a Perfect Lagori cannot be obtain since the piling is impossible to be achieved as Fig.4, how then would the points be calculated?	the case of lagori pile, no points will be given for the lagori that has gone out of the lagori area.
1.20-4	Also, in cases whereby if the opponent's R1 Hitter intentionally/unintentionally hit one of the lagori that is still on the field surface and not on the lagori base yet and that lagori went out of the Lagori Area which causes R2 Seeker not being able to achieve a Perfect Lagori, how would the points be calculated?	The judge will put back the lagori into lagori area for Seeker R2 to continue piling up on the base. Hitter team must retry.
1.20-5	During Lagori Pile, one of the Lagori discs goes out the Lagori area and that Lagori cannot be used. Can we continue piling the remaining Lagori discs? This is because according to the updated game rule section 1.20 – “However, if there is a lagori disc which has gone out of the Lagori Area and cannot be used, you can continue piling up the Lagori except for that disc.	We use the updated version (7 Feb 2022) for section 1.20 in ABU Robocon 2022, in which, during Lagori Pile, the robot can continue piling except for that disc.

2. Game

FAQ #	Question	Answer
2.1-1	During the 1-minute exchange (Setting time) between seeker role and hitter role, are we allowed to change the robots' batteries and repump gas into the robots?	It is allowed to change the batteries of the robot during the Setting time for Round 2. However, re-pumping the gas using a compressor is not allowed during the time. Instead, the team can change containers filled with compressed air, following the

		guidelines mentioned in Section 3.6.5. The used of spared batteries and compressed air are subjected to terms and conditions stated in the rule book, and they should be checked and approved prior to the start of the game.
2.1-2	Can the Seeker balls for R1 be preloaded before the start of the match?	The balls can be preloaded into R1 during the 1-min setting time.
2.1-3	Can we change the robot's mechanism during the change of role e.g. from being a Seeker to a Hitter?	No, it is not allowed.
2.1-4	According to Section 3.4.4., "the team members are not allowed to enter the 'Lagori Area' and the 'Ball Areas'." Does that mean that the team members are allowed to enter their respective Red and Blue areas?	No, it is not allowed. Kindly refer to Section 2.1.7 in the rule book. Yes, it is allowed. (UPDATED 24 May 2022)
2.1-5	Is there any limit for the speed of the ball thrown by robot R1?	The speed of the ball must be less than 30km/h. * Measured 4m away from the front with a speed gun.
2.1-6	Are we allowed to pump gas into the bottles/containers on our robots and connect batteries to our robots before the setting time? Also, are we allowed to setup up our computer as well before the setting time?	Assuming that the question is referring to the setting time prior to the start of the game, yes, it is allowed.

2.1-7	Since each round is 90 seconds, shooting down the Lagori is 30 seconds and piling up the Lagori is 60 seconds. If seeker R1 finishes the task earlier, can the extra time be added to the second section?	Yes, it is allowed. For example, if the Seeker R1 finishes the task in 10 seconds, the remaining time for Lagori pile is 80 seconds (90 seconds – 10 seconds) because the time duration for each round is 90 seconds. Please refer to Section 2.1.11 in the rule book.
2.1-8	After the Lagori Break Shot time is over, will the Seeker Balls that remained on the game field be removed or just left there as it is?	The seeker balls are left there as they are throughout the round.
2.1-9	During the Lagori Pile session, will the lagori which has gone out of the lagori area due to Seeker R2's movement be removed by the judge or just left there as it is? The reason is because the gone out lagori might disturb the path for the Hitter team's robots.	The lagori is left as it is, if it does not interrupt the path and movements of Hitter robots. Otherwise, it will be cleared by the judge.
2.1-10	During the game, are the pit crews allow to verbally communicate with the operators?	Yes, it is allowed.
2.1-11 NEW	After the round start, when exactly the Hitter R1 and R2 can start their action?	Please refer to Section 2.1.12 in the rule book. When all Lagori discs have been broken or the Break Shot Time is finished, after the referee's signal, Hitter's R1 and R2 can start moving to pick up the Hitter Balls.
2.2-1	If the hitter R1 shoots the hitter ball and hits other non-permissible parts of seeker R2 such as the	Seeker R2 can be reset at its places where the BOH is mistakenly shot down. Please refer Section 2.2.18.

	wheels or etc. and the BOH falls down, does the seeker R2 has to return to its SZ to reset the BOH or can it reset from its place where the BOH is mistakenly shot down?	
2.2-2	What does the FAQ 2.2-10 in the ABU Robocon India 2022 exactly mean? What does the term “in orbit” means?	If the Hitter ball thrown by hitter R2 is projecting towards the BOH, pipe and plate, and resulting in the removal of BOH, then the removal of BOH is considered valid under all circumstances. “in orbit” can also mean “in a curved path” or “in a trajectory”.
2.2-3	Can hitter R2 throw the ball in the Ball area to hitter R1?	Yes, provided that it complies with all the rules such that the ball cannot touch the field surface.
2.2-4	After we throw the ball, can we pick the balls in the Ball area simultaneously?	Assuming that “we” is referring to the Hitter team, yes, it is allowed as long as the robot complies with the rules.
2.2-5	Can we still use the ball if the ball happens to be passed out of the game field?	No, it is not allowed.
2.2-6	Can we use any mechanism on the robots including suction for the purpose of throwing/picking up the balls?	Yes, it is allowed.
2.2-7	Is there any specific conditions for the throwing mechanism?	No specific conditions apart from the ones mentioned in the rule book for Seeker and Hitter.

2.2-8	Can we change the role of the robot during the match?	No, it is not allowed. Please refer 2.1-3.
2.2-9	Based on Section 2.2.17, what if the Hitter hits the robot when the robot (Seeker R2) is carrying the lagori discs in a pile and the pile is not yet placed on the base?	When it is judged that the Hitter R1 is aiming at a part of the opponent's robot instead of the BOH, the team will be disqualified (Refer Section 5.2 in the rule book). Otherwise, the team must retry.
2.2-10	If the Seeker R2 has the lagori discs piled up in its body, is it permissible for the Hitter R1 to aim for the lagori pile? What if the Hitter R1 is targeting the BOH but instead, the ball hits the lagori pile inside Seeker R2?	No, it is not allowed (Please refer 2.2-9). If it is deemed accidental, the Hitter team must retry.
2.2-11	Can seeker R2 use pressurized air to deflect the path of the ball thrown by hitter R1 to defend ball on head seeker R2?	No, it is not allowed. Refer FAQ1 2.2-5 (ABU ROBOCON)
2.2-12	If R2 Seeker and NOT the Lagori protrudes outside of the Lagori Area during this session such as into the Ball Area and Opponent's Area, will it be considered a violation?	Yes, it is a violation. The team must retry.
2.2-13	If the Seeker R2 is able to pile back a few fallen lagori [NOT all] back onto the lagori base and its BOH is	The points will be counted based on the number of lagori that have been successfully piled on the lagori base before the BOH is displaced by Hitter R1.

	suddenly displaced by Hitter R1, how will the points be counted?	
2.2-14	Related to Rulebook 2.2.17, Hitter R1 accidentally shoots down the Lagori that is held by Seeker R2. Have the Seeker achieved the task?	No. The seeker team member can stop the robot, enter the game field with judge's permission and put the Lagori back to Seeker R2. The Hitter team must retry.
2.2-15	Can Hitter R1 shoot Lagori on the ground?	No, it is not allowed. It is considered a violation by the hitter team and the team must retry.
2.2-16	Hitter R2 hits my Lagori on my robot and the Lagori falls down. Can the team member pile up the Lagori on the robot at the same spot?	Yes, the team member can immediately stop the robot, enter the gamefield and piles up the Lagori at the same spot under judge's permission. Hitter team must retry.
2.2-17	According to 2.1.14 and 2.2.18, " <i>Hitter will be forced to retry and cannot restart for 15 seconds if the Hitter Ball thrown by Hitter R1 hits any part other than the plate and the pipe of Seeker R2</i> " AND; " <i>the Ball on Head is displaced.</i> " From the statement above, 2 conditions are required to be fulfilled in order for R1 Hitter to force retry. So, if Hitter R1 throws the Hitter Ball and hit any parts	Yes, that is correct. However, if it is deemed intentional, the team is subjected to disqualification. Please refer Section 5.2.

	<p>other than the plate and the pipe of Seeker R2 BUT the Ball on Head is NOT displaced, does this mean that Hitter R1 does not have to be forced to retry? Since only one of the two conditions are met.</p>	
2.2-18	<p>According to faq3 2.2-14 in ABU ROBOCON, it is mentioned that the lagori disc/s which is knocked off Seeker R2's hand by the Hitter Ball should not be manually picked up by the team members but rather by Seeker R2 itself. If so, does this apply in this upcoming national competition as well?</p>	<p>No, it does not apply to ROBOCON Malaysia. The lagori will be picked up by the team and placed at its previous position under judge's permission, whilst Hitter team must retry. This is aligned with FAQ 2.2-16 (ROBOCON Malaysia)</p>
2.2-19	<p>Will Hitter R1 get a violation for unintentionally hitting the opponent's R1 and/or operators? Since the opponent's Seeker R2 might stand in front of its Seeker R1 or operators.</p>	<p>It is up to the judge to decide. If it is deemed as violation, Hitter team must retry.</p>
2.2-20	<p>If part/parts of Seeker R2 breaks after being hit by Hitter R1, will Seeker R2 be disqualified for failing to adhere to safety instructions or will R1 Hitter be disqualified for damaging the opponent's Seeker R2 even though unintentional. Or will the game still continue as usual until the time ends?</p>	<p>Two conditions here. (1) If the broken part/parts of Seeker R2 do not prevent it from functioning, the game will continue. Hitter team must retry. (2) If the broken part/parts of Seeker R2 prevent it from functioning, the game will stop and Hitter team will be disqualified.</p>

2.2-21	Is there any violation if both robots of the same team touch each other?	No, there is not.
2.2.22	Hitter R1 is already in the SZ. Hitter R2 is causing a violation. There should be a forced retry for R2. So R2 should wait 15 secs. What about R1? Should wait or should continue?	According to the rule book, both robots must retry. But it is mentioned in the question that the Hitter R1 is already in the SZ. Hence, only R2 needs to return to its SZ and restart. Both robots do not need to wait for 15 seconds. It is important to note that, the 15-sec waiting time is only applicable to the condition mentioned in Section 2.1.14 and Section 2.2.18.
2.5-1	If one of the robots, R1 or R2 causes a violation, and a retry is needed, is the compulsory retry applicable to both robots or only to the robot causing it?	Both robots in the team, as stated in Sections 2.5.3
2.5-2	According to Section 2.5.8, "the Lagori will be returned to the Lagori area." What does it mean by that? Specifically, where will it be returned to?	Section 2.5.8 is referring to Section 2.5.7 where the team members can touch the Lagori during a retry if, and only if, the robot cannot restart without touching the Lagori. Once the team member(s) touches the Lagori, the Lagori should be returned to the location on the ground where it is taken from in the Lagori area.
2.5-3	If one of the robots, R1 or R2 ask for a self-retry which is NOT due to violation, do both robots, R1 and R2 also need to return to their SZ or just the specific robot?	Both robots.

2.5-4	Since it is only mentioned that both robots have to retry together, is it therefore allowed for both the robots to start individually. Meaning that, each robot does not have to wait for the other in order to continue its task.	Both robots are allowed to start individually.
2.5-5	When does the retry process start? Is it when the operator asks for a retry or when the robot return to its SZ, only then the retry process starts?	Once the retry request is allowed by the judge, the retry process starts.
2.5-6	Do both robots have to start retry process together?	Please refer to FAQ 2.5-4.

3. Robots

FAQ #	Question	Answer
3-1	Is there a limit for the number of robot controllers?	No, as long as it complies with all the rules.
3-2	Can we use vacuum technology for this year Robocon?	Yes, it is allowed but the robots are not allowed to stick on the game field. (With reference to faq2_30jan2022, FAQ 1-5 in ABU Robocon 2022)
3-3	Can we use RC?	No, it is not allowed. Please refer to Section 3.7.2
3-4	Can we use two controllers for one robot?	Yes, it is allowed.

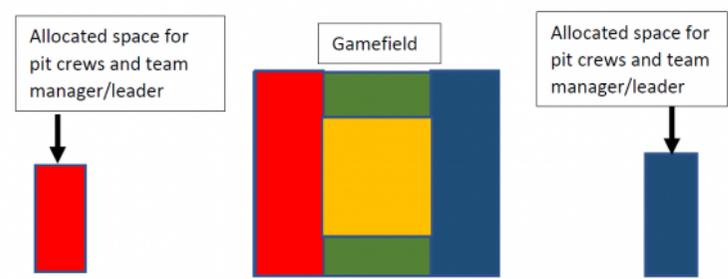
3-5	How many circuits are allowed for one robot?	There is no limit, as long as the voltage requirements mentioned in Section 3.6 of the rule book are not exceeded.
3.4-1	Are there any rules regarding the dimension of the robots?	Please refer to Section 3.4 in the rule book.
3.6-1	Maximum voltage is the total voltage for the whole robot?	Total voltage for the battery (or batteries, for the series-connected case) is 24 V or less. Please refer to Sections 3.6.3 and 3.6.4 for further details.
3.7	Can we use a PS2 controller with 2.4-GHz radio frequency?	Yes, it is allowed.

6. Safety

FAQ #	Question	Answer
6.1	What if the robot unintentionally collides with another robot and causes damage (or worse, broken)?	The team will be disqualified as the robot does not follow the safety instructions and warnings issued by the organization.

7. Teams

FAQ #	Question	Answer
7-1	We have 6 team members, 1 team leader dan 1 manager. Can the team leader be in the field during competition?	Only 3 team members can be in the game field during the competition. Pit crews can only participate in setting of the robots (refer to rule 7.2). For Robocon Malaysia, 7 persons are allowed

		<p>to participate in the Robot Test and the Competition. They are team manager OR Team Leader, 3 team members and 3 pit crews.</p> <p>Positions of pit crews and team leader/manager during the game</p> 
7-2	Should there be any team members who can't participate during the competition for emergency medical reason, can other team member take their spot?	Yes, as long as the mentioned team member is a registered member.
7-3	What is the maximum number of people allowed in the pit area?	Seven registered members i.e. three operators, three pit crews and one team manager OR team leader.
7-4	Can the team manager swap roles with the team leader? For example, the team manager stay in the pit area instead of the team leader?	Yes, it is allowed. As long as it follows FAQ 7-3.