



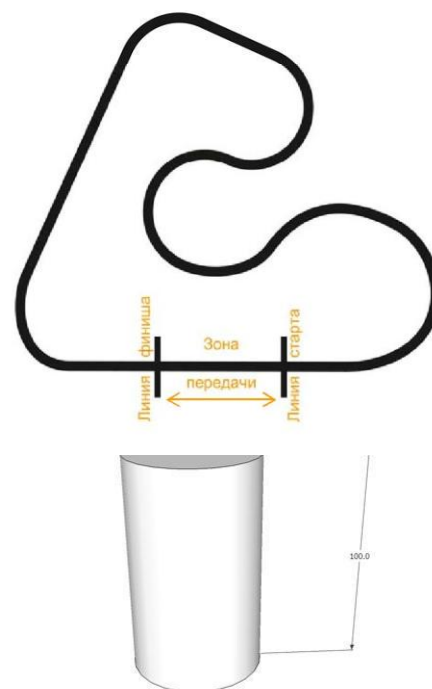
# ROBOFINIST

## Relay Race

### 1. General

#### 1.1. Field

- 1.1.1. Polygon colour – white.
- 1.1.2. Line colour - black, exchange zone line colour
- 1.1.3. Line width - 50 mm, width line limiting the e
- 1.1.4. Line minimum curve radius – 300 mm.
- 1.1.5. Exchange zone length - 600 mm, width - 300
- 1.1.6. The example is shown on the picture. The act
- 1.1.7. There can be some obstacles on the line: борч



#### 1.2. Relay baton

- 1.2.1. White cylinder is used as a relay baton.
- 1.2.2. Relay baton length – 60 - 65 mm.
- 1.2.3. Ten-pin height - 100-135 mm.
- 1.2.4. Side surface material of the relay baton - wood or Whatman.
- 1.2.5. Ten-pin weight - 75 g max.

### 2. Robot requirements

#### 2.1. Basic specifications

- 2.1.1. Two robots participate in relay.
- 2.1.2. When starting robot dimensions shall be 30 x 30 cm max.
- 2.1.3. During the movement robot dimensions shall be constant.
- 2.1.4. Robot's height is not limited.
- 2.1.5. Robot's weight shall be 3 kg max..
- 2.1.6. Robot shall be fully-autonomous.

#### 2.2. Auxiliary specifications

- 2.2.1. Robots shall have mechanisms to pass a baton.

### 3. Game

#### 3.1. Aim of the game

- 3.1.1. During 5 minutes two robots of the same team shall drive the maximum number of laps with a relay baton passing it every time in the exchange zone.

#### 3.2. Start

- 3.2.1. When starting both robots shall be in the exchange zone.
- 3.2.2. When starting the relay baton shall be at the robot that starts to move along the black line first.



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- 3.2.3. Robot shall be switched on or initialized manually at the competition start on referee command, after that it is not allowed to interfere its operation. It is prohibited the remote control or command issuing for robot.
- 3.2.4. After starting up the robot shall drive along the specified black line and having entered the exchange zone pass the relay baton to the next robot.
- 3.2.5. During competition the competitors are not allowed to touch the robot body, ten-pins body or polygon.

### 3.3. Relay baton passing and loosing

- 3.3.1. Relay baton passing is permitted only in the exchange zone.
- 3.3.2. In the exchange zone the relay baton may be any amount of the specified time.
- 3.3.3. The robot passed the relay baton shall stay in the exchange zone.
- 3.3.4. Relay baton loosing can occur only outside the exchange zone.
- 3.3.5. The relay baton is considered to be lost if no part of the robot touches the relay baton for more than 5 seconds and the relay baton is outside the robot's contour.
- 3.3.6. In case of relay baton losing it necessary to restart robots (see details in Paragraph 3.4).

### 3.4. Restart

- 3.4.1. Robot movement stops in the following situations:
  - If the robot loses the relay baton (see details in Paragraph 3.3);
  - If the robot leaves the exchange zone without relay baton;
  - If the operator touches the robot body or the relay baton;
  - If any robot loses the line<sup>1</sup> for more than 5 seconds;
  - If the robot passed the relay baton leaves the exchange zone after the robot received the relay baton.
- 3.4.2. It is permitted restarts within the specified time. For that it is necessary to repeat all action at start (see details in Paragraph 3.2).
- 3.4.3. When restarting referee do not stop the stop-watch.

### 3.5. Finish

- 3.5.1. Heat is ended at the lapse of 5 minutes after the first crossing the start line by the robot or on referee command.
- 3.5.2. By the referee decision the try can be finished in advance.

## 4. Rules of winner definition

- 4.1. The team gets 1 point per each full lap correctly finished by the robots with the relay baton.
- 4.2. The lap is considered to be finished correctly if one robot crosses the start line with the relay baton, passes it to another robot after finish line and the second with the relay baton crosses start line.
- 4.3. If during the heat there were some restarts only one restart is scored with the maximum number of points.

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If robot leaves the line when no part of robot is above the line, it can be possible only tangentially and the distance shall not exceed the length that is equal to three robot bodies. In that case the robot length is considered to be the length of wheel base.



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- 4.4. If there were some heats points are scored per each heat and it is scored the heat with the maximum number of points.
- 4.5. If the number of points is the same the number of successive start is taken into account. If this number is also the same the time of the successful first lap finishing during this heat is taken into account.