Linefollowing rules

CONTENTS

1. Description
2. Discipline classification
3. Competition rules
4. Robot
5. Arena or track
6. Competition procedure

1. Description

Linefollowing is one of the most popular robotics disciplines. The goal of the competition for the robot is to move fully autonomously from the start to the finish in the shortest time possible. The arena, or track, of this discipline consists of a black line on a white background.

2. Discipline classification

The Linefollowing discipline is divided into two categories:

- LEGO®
- Free construction or electronics

3. Competition rules

3.1. To achieve a result, the robot must successfully complete one full lap during the competition.

3.2. The winner may be determined in the following ways:

- Based on the best track time from X attempts.
- Based on the best average track time from X-2 attempts,
  by discarding the 1 best and the 1 worst time (2 attempts may be DNF).

3.3. The competition organizer determines the competition format and the number of attempts.

3.4. In one attempt, the robot completes 1 lap.

3.5. The technical inspection of the robots takes place when the 1st attempt is made during the competition.
It is not conducted at a separate time.

4. Robot

4.1. The robot's maximum size (width, length, height) and weight:

- LEGO®: 30x30x30 cm; 1 kg.
- Free construction: 25x25x25 cm; 1 kg.

4.2. The robot must be fully autonomous.

4.3. The robot must be capable of following the line under different lighting conditions. Complaints will not be considered.

4.4. The robot must be able to completely block the light beam of the timing system, which has a 2 cm diameter and can be positioned up to 5 cm above the ground.

4.5. The robot's construction is prohibited from using sticky or oily substances or materials that leave stains.

4.6. The robot must not cause any damage to the arena.

4.7. **NB!** The LEGO® robot construction may consist only of parts available in LEGO® kits.

5. Arena or track

5.1. The track line is at least 20 cm away from the edge of the base.

5.2. The minimum distance between two lines at any section is at least 25 cm.

5.3. The track is "infinite", meaning the robot does not need to find a specific finish point.

5.4. The track has a defined starting position.

5.5. The track may include 90-degree intersections.

5.6. The track may have 90-degree turns.

5.7. The black line width is 15 mm.

5.8. The track is equipped with an automatic or semi-automatic time control mechanism.

6. Competition procedure

6.1. The competition takes place in live queue order, unless a duel format is specified.

6.2. When it is the participant's turn, the participant shows the robot's number to the referee.

6.3. After the referee's permission, the participant places the robot at the starting position.
A part of the robot must be on the same level as the starting position.

6.4. The participant is given **1 minute** to start their robot.
If the start is not initiated, the attempt is recorded as DNF [Did Not Finish].

6.5. No more than **3 minutes** are given to complete the track.
If the robot does not complete the track within this time, it must be removed from the track.

6.6. If the robot loses the line, it can return to any point previously covered on the track.
Otherwise, the attempt is recorded as DNF.

6.7. If the robot loses the line for more than 5 seconds, the attempt is recorded as DNF.

6.8. The robot's performance must not be influenced during the attempt.

6.9. Participants are prohibited from stepping on the competition track.

6.10. After the attempt, the participant may leave the discipline area only after the referee's signal.

6.11. **NB!** If the timing system fails to trigger at the **start** of the robot's run, an additional attempt is given.

6.12. **NB!** If the timing system fails to trigger at the **finish** of the robot's run, additional attempt(s) will be allowed until the robot completes the track.