

Race Categories and Prizes



Evaluation of the race

In 2012 the evaluation of the race will be based on the achieved race standings.

1. Category of creativity of design

The evaluation will start with machine-check, where the teams have to introduce the vehicles and answer the questions of the jury concerning the pneumobiles. The reception of the vehicles is made for two reasons.

1. To decide if the vehicle suits the published requirements of competition and if it can get a permission to take part in the race. To check the safety regulations. If the team does not pass this point, it can be excluded from one of the races
2. To evaluate the technical content of the vehicle and compare it with the other vehicles.

Criteria of the evaluation:

1. Condition of participation on the races:

We are going to check the technical details based on the downloadable check-list, concerning the points 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 of the “Technical specification of task”. In case of deviation, the jury is entitled to exclude the vehicle from one or all of the races.

2. Evaluation of technical details:

- Teams have to introduce the vehicle in motion (one air-bottle will be provided for this task), and have to present the process of planning and building on a poster in max. 5 minutes. Detailed information regarding its content will be published later.
- check, if documentation of design has been sent to Bosch Rexroth in the required form and if the vehicle suits the documentation (see at Technical specification, chapter nr. 14)
- pneumatic circuit
- innovative nature, creative solutions
- applied materials in construction
- volume of human work
- quality of workmanship
- appearance, design
- results of other categories (performance during races – the three awarded vehicles shall achieve at least 15th place in every races, and shall fulfil the minimum requirements of the race categories)
- keeping the deadline regarding documentation submitting

The members of the jury will define a ranking individually based on the above described criteria. The final ranking of this category will be resulted by the summary of the individual rankings. Important! The teams shall appear at the vehicle reception in time because the jury should survey every vehicle for making the judgement.

Teams not arriving in time will be disqualified from this category of the competition.

The first 3 teams will be awarded.

2. Category of long-distance

The vehicles have to make the longest possible distance with one charged pressure bottle. The pressure-reducer will be set on 10 bar. Planned length of the race track is 640 m.

The vehicle shall be driven by all the members of the team in minimum 3 relays. (All 4 members, or at least 2 members one after the other in a relay.) This means that the vehicle shall stop during the race and move on after the change of drivers. First change can happen in the first lap. It is compulsory to pass at least one lap between two changes. The change may happen only on a specified section of the race track. Team members may stay on the race track.

The average velocity shall be more than 12 km/h, including the duration of driver change. The compulsory minimum average speed concerns the total run whole laps. So, achieving the average speed within one lap is not compulsory because the average speed of the total run distance will be considered. The average speed of last, non-complete lap will not be considered, so, it is allowed to run slower if the vehicle does not finish the lap the speed of last lap will not count.

The vehicle shall perform minimum 2 km as achieved distance! – this is the minimum requirement of the race category!

During the run the vehicle might stop and restart, but the standing and restarting time counts in the average speed. When the vehicle stops, only the driver can eliminate the failure, team members are not allowed to help. In case of stop the vehicle should move to the internal side of the track.

In case of not reaching above goals, the result of the team will not be evaluated in this category. There are 6-10 vehicles on the track at the same time in this race. Vehicles shall be removed from the race track with the assistance of team members, so that it hinders other participating vehicles as least as possible. Vehicles can start one after another with time-delay. The achieved distance is measured by the outside points of the front of the vehicle. Communication between the driver and other team members is optional and free. The final result and place of this category will be determined on the basis of the measured distances made by the teams fulfilling above requirements.

The first 3 teams will be awarded.

3. Category of smartness (slalom track)

The vehicle shall run one full round on the speedway in the shortest time with a filled air bottle. The planned length of circuit is about 250-300 m, on which there will be placed some obstacles to make the run more complicated and require smartness from the teams. The pressure-reducer will be set on 10 bar. The competitors shall drive 2 laps continuously, and the summarized time of laps will be measured and evaluated as the result in this category. The vehicle has to speed up before crossing the start-line in order to have comparable lap times.

During the speed-up it is not allowed for the team members to help to accelerate the vehicle (it is not allowed to push the vehicle). The vehicle can stop once during the race but this stop and the speed-up after will be also included in the actual lap time. During the time of the stop, the driver can make adjustments on the settings of vehicle, but the other members of the team are not allowed to help him/her.

If the driver is not able to move on in less than 5 minutes, the vehicle will not be evaluated in this race category.

Team members are not allowed to stay on the race track. Vehicles should pass the finish line by their own energy. There is one vehicle on the track at the same time in this race. The ranking will be made based on the summarized lap times of the teams.

The first 3 teams will be awarded.

4. Category of acceleration

The vehicle shall run a straight track in the shortest time, with a filled air bottle. The planned length of track is about 220 m. The pressure-reducer will be set on 10 bars. Two vehicles will start parallel at the same time from a standing position on the start line. The pairs of teams will be carried out according to the result of the speed-race, backwards (... Nr. 6 against Nr. 5, Nr. 4 against Nr. 3, Nr. 2 against Nr. 1)

- Every vehicle will run only one track.
- Highest speed will be measured as well (last 5 m).
- Signals of the traffic lights are: yellow, green.
- Reaction time counts into the result too.
- Jumping the gun is not allowed (negative reaction time will be checked): who jumps the gun or does not start, will be eliminated from this category.

Ranking will be made based on the achieved time results.

The first 3 teams will be awarded.

5. The Best Pneumobile of Rexroth 2012

The “Best Pneumobile of Rexroth 2012” title will be granted to one of the winners of the race categories by the joint decision of the jury and the management of Bosch Rexroth companies.

6. Extra prizes

Extra prizes can be set out based on sponsors’ offers later.

The difference between the – in the documentation – calculated achievable highest speed/biggest distance and the measured data will be checked, and the team with the smallest difference will be awarded.

7. Preparation for the races

Mounting of the new air bottle on the vehicle is only possible after the total exhaust of the pneumatic system (puffer container, heat-exchanger). This will be checked at start. The engine may run already before the start.

8. Order of race categories

1. Distance race
2. Smartness race
3. Acceleration race

9. Announcement of results

Announcement of results will be organized on site right after the competition.