

Race Categories and Prizes

Evaluation of the race

In 2010 the evaluation of the race will be based on the achieved race standings.

1. Category of creativity of design

The machine-check will be held on the eve of the competition. 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. At first to decide if the vehicle suits the published requirements of competition and if it can get a permission to take part in the race. At second the technical evaluation of the vehicle and the comparison with other competing vehicles.

Criteria of the evaluation:

- meeting the prescribed conditions – the teams present the vehicles while running (shortly, in max. 5 minutes) – the teams receive one bottle for this task
- check, if documentation of design has been sent to Bosch Rexroth in the required form (see at Technical specification, chapter nr. 15)
- pneumatic circuit
- innovative nature, creative solutions
- applied materials in construction
- volume of human work
- quality of workmanship
- appearance, design

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 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 minimum achieved distance is 2 km. During the run the vehicle must not stop and restart. (except for the driver shifts or because of external objections). In case of stop (e.g. breakdown) during the run the distance reached until the stop-point will be evaluated as final result. If the vehicle stops due to another vehicle, it will not be considered as a stop, but it counts in

the average speed. 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 speed

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 300-350 m. The pressure-reducer will be set on 10 bar. The competitors shall drive 3 laps continuously, and the time of each lap will be measured. The shortest lap time will be 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 for max. 1 minute during the 3 laps of the race but this stop 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. During the stop vehicles should move to the internal side of the track. The driver shall continue the race in less than one minute. If the driver is not able to move on in one minute then the shortest performed lap time will be registered as his final result of this category. Team members are not allowed to stay on the race track. Vehicles should get back to the pit by their own energy. There are 2-3 vehicles on the track at the same time in this race. Vehicles can start one after another with a time-gap. Racing vehicles should pay attention to each other so that they do not hinder others overtaking should be made carefully. The ranking will be made based on the best 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 bar. 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

The "Best Pneumobile of Rexroth" 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). The engine may run already before the start.

8. Order of race categories

1. Distance race
2. Speed race
3. Acceleration race

9. Announcement of results

On site right after the competition