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| <University, College name> <Name of the faculity> |
| Technical documentation |
| <Race number> |
| <Team name> |
| XII. International Aventics Pneumobile Competition 2019 – powered by Emerson |

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# Technical data sheet

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| **AVENTICS PNEUMOBIL 2019 TECHNICAL DATA SHEET** |
| **START NUMBER:** |   |
| **NAME OF TEAM:** |   |
| **NAME OF UNIVERSITY:** |   |
| **TEAM-MEMBERS** | **Year/class:** |
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |
|   |   |
| **NAME OF SUPPORTING INSTRUCTOR:** |   |
|   |
| **YEAR OF THE VEHICLE WAS BUILT** |  |  |   |   |
|  |  |  |  |  |   |
| **VEHICLE VERSION** | NEW/REBUILT |  |  |   |   |
|   |
| **PLANNED TOP SPEED** |   | km/h |
| **PLANNED OPERATIONAL DISTANCE** |   | m |
|  |
| **MAIN FEATURES OF THE PNEUMOBILE** |   |   |
|   | LENGTH |  |   |   | mm |
|   | WIDTH |  |   |   | mm |
|   | MASS |  |   |   | kg |
|   | AXLE-BASE |  |   |   | mm |
|   | TRACK WIDTH |  |   |   | mm |
|   | NUMBER OF WHEELS |   |   | pcs |
|   | DIAMETER OF STEERED WHEEL(S |   | mm |
|   | DIAMETER OF DRIVEN WHEELS |   |   | mm |
|   | NUMBER OF DRIVEN WHEELS |   |   | db |
|   |
| **ENGINE-CONSTRUCTION** |   |
|  |   |   |   |   |   |
| **CONTROL SYSTEM** |   |
|   |  |  |  |  |   |
| **FEATURES OF THE PNEU-ENGINE** |  |  |  |   |
|   | NUMBER OF CYLINDERS IN THE ENGINE  |   | db |
|   | CYLINDER DIAMETER |  |   | mm |
|   | STROKE |  |  |   | mm |
|   | DISPLACEMENT |  |  |   | cm3 |
|   | RPM OF THE ENGINE-AXLE |  |   | 1/min |
|   | TORQUE OF THE ENGINE  |  |   | Nm |
|   |   |   |   |   |   |

# Safety regualations

### Accenpting the general safety rules

Undersigned teacher, from the University/College, as supporter teacher, declare that I have checked the technical documentation of the vehicle. Our team is committed to paying particular attention to the following guidelines when designing and constructing a vehicle. By submitting the technical documentation, we accept that non-compliance with the points of section 2 of the design documentation may result in disqualification.

Additionally I declare that the members of team have made the technical documentation.

 , 2019.

signature

1. Wearing a head protection helmet is obligatory.
2. If the helmet does not have plexi to protect the face, it is obligatory to wear goggles.
3. Drivers have to wear closed shoes and gloves.
4. Drivers should wear long sleeve clothing (tops/shirts) and long trouseres during all races
5. All the safety functions need to be in the driver’s reach.
6. Driver should sit in a seat equipped with a four fixing position belt, that is able to fasten the driver so that the shifting is prevented.
7. Drivers have to be able to leave the car within 15 seconds and they have to be able cut off the voltage and compresed air supply of the vehicle.
8. Vehicle must be equipped with two rear-view mirrors
9. The vechicle must be equipped with an electrical safety switch, which can be operated from the outside.
10. The electrical emergency swith must be marked with red-white triangle (red frame, white inside).
11. Using of the predesigned pneumatic safety circuit is obligatory.
12. Safety circuit should be mounted on red plate and placed in such place that allows easy access to it for driver and from outside of vehicle.
13. The frame must protect the driver’s leg.
14. The battery must be placed in an IP54 protection class casing, which prevents the batteries from moving.

Signature of Team Members

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### Presentation of the dimension-related rules (Drawing is mandatory)

### Mounting and protection of pressure tank (Drawing is mandatory)

### Mounting and protection of buffer tank (Drawing is mandatory)

### Engine placement (Drawing is mandatory)

### Brakes

### Turning Radius (Drawing is mandatory)

# Presentation of vehicle

### 3.1 General information about the Pneumobile

### 3.2 3D model of the vechicle

### 3.3 Dimensions

### 3.4 Chassis, CAD model

### 3.5 Design of body, starting plates

# Engine and drive chain

### 4.1 Engine construction

### 4.2 Drive Chain

### 4.3 Calculation

# Control system

### 5.1 Pneumatic scheme

### 5.2 BOM of Pneumatic scheme

### 5.3 Electronic scheme

### 5.4 Details of the control system

# Suspension, brake and steering system

### 6.1 Front wheels

### 6.2 Rear wheels

### 6.3 Steering system

# Innovation