

5th International Exhibition InventCor

04-06.04.2024 - Deva, Romania



| Registration form | |
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| INTERNATIONAL EXHIBITION INVENTCOR Deva, Nucilor street, no. 8, zip code 330069 Hunedoara county, Romania Tel.: +40729304129 inventcordeva@gmail.com http://corneliugroup.ro/inventcor.html https://www.facebook.com/CorneliuGroup/ | REGISTRATION DEADLINE & FEE 15.02.2024 confirmation of participation (number of inventions, projects, etc.) 01.03.2024 registration deadline sending the registration form and the poster/s The participation fee is 100€/project or invention and the transport fees depending on the country |

The **International Exhibition INVENTCOR** will be organized in a hybrid format (on site & online) at the Cultural Center „Drăgan Muntean” from Deva city.

The registration form (in WORD) and the poster (in PPT) will be sent to the following email inventcordeva@gmail.com

Section 1 – Contact information

Name of the institution / Exhibitor’s name: CorneliuGroup association

Address: Nucilor street, no. 8

Post code: 330069 **City:** Deva **Country:** Romania

Telephone: +40729304129 **Email:** corneliugroup@gmail.com

Total number of inventions / projects submitted: 2

Section 2 - Invention / Project

(If the same institution or private inventor has several inventions / projects, only section 2 will be multiplied for each one)

Title: DRIFT super-aspirating air filter

Patent/project number: patent no. 125034/30.07.2013.

Author/s: Corneliu Birtok Baneasa

Institution: Politehnica University of Timisoara, Faculty of Engineering Hunedoara

Category (choose from **Section 3** the category to which the invention/project belongs): K

Description: DRIFT or multifunctional super-aspirated air filters are dedicate for Drift competition cars. In addition to the main air filtration task, the DRIFT super-aspirating air filters perform the following functions: captures air, increase the speed air flow, pre-cool the air.

State of development (product, prototype, concept, virtual idea, scientific paper, research project, student project, PhD thesis, laboratory): product

Contact: www.corneliugroup.ro corneliugroup@gmail.com +40729304129

Presentation link: https://www.youtube.com/watch?v=xRBt4u_COco

Section 3 - InventCor categories:

A - Energy, Protection of the environment, Biotechnology; **B** - Nanotechnology, Advanced materials, Metallurgy, Civil engineering;
C - Computer sciences, Electronics and Electrical engineering; **D** - Automotive, Space science, Aviation, Ships, Mechanics;
E - Teaching methods, Books, History and Cultural studies; **F** - Medicine, Paramedical, Pharmacy, Cosmetics, Hygiene;
G - Agriculture, Veterinary medicine; **H** - Foods, Drinks, Restaurants, Hotels & Spa; **I** - Textiles, Clothing, Fashion, Handmade;
J - Kids Corner, Games, Toys, Sports, Outdoor activities; **K** - Innovative ART, Music, Video, Photography, Publicity

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Title: Development of Experimental Laboratory of Applied Ergonomics

Patent/project number: project no. 13118/23.12.2019

Author/s: Popa Mihaela, Topor Marcel, Dascăl Amalia

Institution: Polytechnic University of Timisoara, Faculty of Engineering Hunedoara

Category (choose from **Section 3** the category to which the invention/project belongs): F

Description: The applied Ergonomics laboratory was made with the support of Philips Orăștie, the first university in Romania, which has this high-performance equipment for measuring human behavior, in interaction with the environment.

Combining the complementarity of sensors and systems with current software solutions, synchronizing and collecting data from multiple sources, can provide students, teachers, researchers interested in information about the psychomotor level, the intensity of people's cognitive, emotional and behavioral reactions to various stimuli, in real time or in a virtual situation.

State of development (product, prototype, concept, virtual idea, scientific paper, research project, student project, PhD thesis, laboratory): research project

Contact: <https://www.fih.upt.ro/v4/> mihaelampopa@yahoo.com

Presentation link: <https://www.youtube.com/channel/UCEYJJKtvN4gPo2412kDafjA/featured>

Poster specifications

The poster must be made in accordance with the InventCOR Model with size 60x90 centimeters and PPT format.

The poster must contain the following elements of identity:

- 1 – Institution
- 2 - Category (top right)
- 3 - The title
- 4 – Patent/project number
- 5 – Author/s
- 6 – Description, pictures & graphics
- 7 - Contact


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YXV super-aspirated air filter

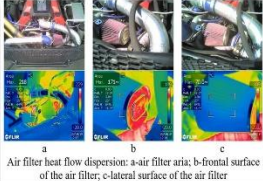
This paper was financially supported by the Project "Network of excellence in applied research and innovation for doctoral and postdoctoral programs / InoHubDoc", project co-funded by the European Social Fund financing agreement no. POCU/993/6/13/153437

Author: Corneliu BIRTOK BANEASA
Mentor: Prof.Dr.Eng.Habil. Virginia Ana SOCALICI

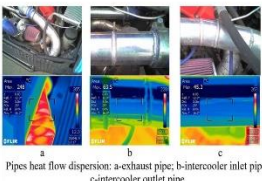
YXV is a super-aspirated air filter dedicated for IC engine. YXV reduce the thermal, the gas and dynamic losses by contributing to the increase of the filling degree of the engine cylinders.

This study presents the influence of the air filter location on the intake system temperature in the case of engines for drifting. The heat flow dispersion map at the engine compartment was determined for four different cases. The measurements were performed with a thermographic camera in the area of the air filter and intake manifold. The results obtained after the test contribute to the efficiency of the thermal management of the engine by reducing the temperature of the intake air.

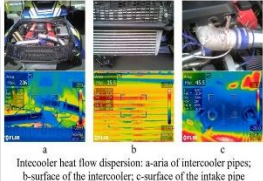
Four Drift engines with an engine displacement between 3.2l and 4.4l were considered for this study: I BMW E36; II Nissan Skyline r32; III BMW E30; IV BMW E36.



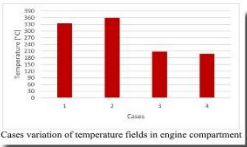
Air filter heat flow dispersion: a-air filter aria; b-frontal surface of the air filter; c-lateral surface of the air filter



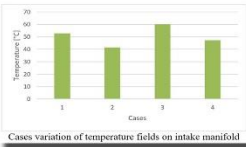
Pipes heat flow dispersion: a-exhaust pipe; b-intercooler inlet pipe; c-intercooler outlet pipe



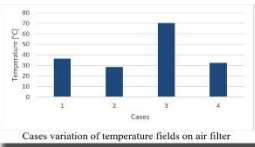
Intercooler heat flow dispersion: a-aria of intercooler pipes; b-surface of the intercooler; c-surface of the intake pipe



Cases variation of temperature fields in engine compartment



Cases variation of temperature fields on intake manifold



Cases variation of temperature fields on air filter

The relatively high values of the temperature recorded on the intake path in the case of the 4 engines studied, mainly case 3 is due to the organization of the supercharging group, the air filter location and the lack of protection in the filter area.

A solution in order to reduce the temperature on the intake system consists in the implementation of an Air by Corneliu system composed of the super-aspiring air filter YXV, dynamic system of air transfer (STDA) and integrated thermal deflector. The researches has shown that temperatures have been reduced by up to 50%.

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