Aerodynamics: innovations increase efficiency

- **New ŠKODA FABIA has lowest drag coefficient within its segment with a c_d of 0.28**
- **Cooling shutters with active slats regulate air supply in the front bumper's lower air intake**
- **Aerodynamics have largely been developed using virtual fluid dynamics simulations**

Mladá Boleslav, 15 February 2021 – Thanks to a host of ingenious aerodynamic details, ŠKODA has significantly reduced the new FABIA's consumption and emission values. Compared to its predecessor, the FABIA's drag coefficient (c_d) has dropped from 0.32 to 0.28, making it the most aerodynamically efficient small car in its segment.
The aerodynamics have predominately been developed using accurate CFD (Computational Fluid Dynamics) simulations.

Aerodynamics, a sub-field of fluid dynamics, describes the interaction between the air and solid bodies moving through it, and plays an increasingly important role in automotive engineering. The more aerodynamically sophisticated a vehicle is, the lower its drag. The energy required for locomotion is reduced, and fuel consumption and emission levels are lowered. In addition, good aerodynamic properties also have a positive effect on the handling of a vehicle. The aerodynamics have been improved using what is known as CFD simulations. Within approximately three and a half years, the ŠKODA engineers computed more than 3,000 of these fluid dynamics simulations. The result? With a c_d of 0.28, the FABIA has the lowest drag coefficient in its segment.

Cooling shutters save up to 0.2 l of fuel per 100 km at 120 km/h
The addition of a new type of cooling shutter has been an important measure. These shutters are actively adjustable slats in the front bumper's lower air intake. When there is little need for cooling, they close automatically, thereby improving the car's aerodynamics. This results in fuel savings of up to 0.2 l per 100 km when travelling at a constant speed of 120 km/h. To allow for a high level of cooling or to accommodate short stops, the system opens the shutters so that the maximum amount of air can flow in.

Significant reduction of rear drag and large underbody cladding
Approximately one third of a vehicle's overall drag is caused by turbulence at the rear. That is why the new ŠKODA FABIA has a larger roof spoiler and side finlets that optimise the air flow at the rear. These components are made of plastic and can be manufactured very accurately. Specifically designed aerodynamic wing mirror housings reduce drag and direct the air flow to the rear in a targeted manner. At the front, the air is guided to flow through vents in the front bumper, known as air curtains, in a particularly aerodynamic manner close to the side of the body and the wheels. As the wheels alone generate around 25 per cent of the drag, ŠKODA is now also offering wheels with aerodynamically optimised plastic inserts for the FABIA – this is a first for the model. Twelve panels now cover a larger part of the underbody instead of three, especially in the areas that are crucial for aerodynamics, such as the engine bay and the axles.

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ŠKODA AUTO

- is focusing on three priorities with its 'NEXT LEVEL ŠKODA' program for the future: expanding the model portfolio towards entry-level segments, exploring new markets for further growth in the volume segment and making tangible progress in sustainability and diversity.
- currently offers its customers ten passenger-car series: the CITIGO^{e} iV, FABIA, RAPID, SCALA, OCTAVIA and SUPERB as well as the KAMIQ, KAROQ, KODIAQ and ENYAQ iV.
- delivered over one million vehicles to customers around the world in 2020.
- has belonged to the Volkswagen Group for 30 years. The Volkswagen Group is one of the most successful vehicle manufacturers in the world. In association with the Group, ŠKODA AUTO independently develops and manufactures vehicles, as well as components, engines and transmissions.
- operates at three locations in the Czech Republic; manufactures in China, Russia, Slovakia and India mainly through Group partnerships, as well as in Ukraine with a local partner.
- employs approximately 42,000 people globally and is active in more than 100 markets.