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A MASTER OF AIR: CRAFTING A NEW GENERATION OF ROADSTER DESIGN WITH THE BUGATTI W16 MISTRAL

The Mistral[1]: a unique wind pervading southern France, and a herald for the changing of seasons. Its influence, however, extends beyond its status as a force of nature. Those that experience it are able to draw upon its power, conjuring immersive sensations of adventure, awe, nostalgia, and anticipation for the road ahead. Such an impactful

phenomenon is at one with the spirit of Bugatti — and a fitting inspiration for designing the last in an illustrious line of models powered by the iconic Bugatti W16 engine: the W16 Mistral.

Staying true to Bugatti's long-held ethos of 'form follows performance', the W16 Mistral is defined by the harnessing of air. The truly elemental driving experience is only made possible by a century-born mastery of aerodynamics; both fused together to form an open-air masterpiece — an intense roofless experience at 420 km/h that celebrates design and engineering at its zenith.
For Bugatti's master designers, the quest to perfect the art of aerodynamics began at the very front of the W16 Mistral — with an icon of the Bugatti marque reimagined for pushing the boundaries of innovation. The inimitable Bugatti horseshoe grille was crafted in a new form for the W16 Mistral, widened and equipped with perfectly aligned 3D-printed meshes to channel air into the central radiator — harnessing its power to provide critical cooling for the 1600 PS, quad-turbo W16.

The horseshoe grille channels the ingenuity of Bugatti's design heritage, but the designers of the W16 sought to honor the spirit of the marque's legendary innovation yet further. The role of signature design cues in harnessing the power of the air extends to the front light units — furthering the W16 Mistral's pursuit of form defined by performance. Echoing the Chiron with eight elements, and vertically arranged in homage to other Bugatti masterpieces such as the Divo and La Voiture Noire, the three-dimensional surface of the refined, elegant design reduces aerodynamic drag with grooves guiding the air curtain — evacuating air from the wheel well and enhancing performance.

As air races towards the center of the W16 Mistral, it encounters a new interpretation of a feature that has made Bugatti unique over a century of design innovation: the encapsulating C-line. Raised to a higher position in the drive for maximum performance, the C-line houses intelligent air inlets that serve to further boost the W16 Mistral's incredible levels of dynamic pressure — processing air and pressure at once to provide cooling for the engine, gearbox and rear axle.

Staying true to Bugatti's guiding ethos, the form of the C-line honors the pursuit of performance. Following a seamlessly elegant trajectory through to the windows and windshield, the line evokes the aesthetic of the visor on a racing helmet, while an integrated cross-beam across the windshield smoothens the airflow over the open cockpit — directing air towards the rear wing for maximum downforce.

Where it meets the windows of the W16 Mistral, the C-line flows past exquisitely sculpted air scoops, paying tribute to a lineage of open-top Bugatti icons — from the stunningly beautiful 1934 Type 57 Roadster Grand Raid Usine, to the first modern-era open-air Bugatti, the Veyron 16.4 Grand Sport. Fusing the elegance and performance the sculpted scoops have come to symbolize, the arrangement on the W16 Mistral represents an all-new, highly advanced and entirely bespoke air intake system that's fully integrated into the vehicle's immensely strong carbon-fiber crash structure. From the crafted scoops, air is rammed through air filters into

the four turbochargers of the 8.0-liter 16-cylinder engine, feeding the W16 Mistral's incredible power, acceleration and speed. It is a feast for the senses also imbued with the glorious notes of the W16 engine — amplified by the scoops to give the cabin's occupants an aural experience unmatched in the automotive world.

The hot air that exits the radiators cooling the 16-cylinder engine is channeled through ducts towards the rear — representing one of the most sophisticated areas of design on a holistically complex canvas. Drawn through by negative pressure, the hot air is expelled through the vents within the W16 Mistral's X-taillight arrangement — a stunning display inspired by the Bugatti Bolide that elegantly fuses aesthetic allure with engineering ingenuity. The air's journey from the rear of the vehicle is dramatically accelerated by the enhanced 'ramp'-design diffuser, acting to aid the further removal of hot air and increase the overall downforce that makes the model excel at high speeds.

While majoring on exhilarating performance, the beauty that defines the X-taillight arrangement is echoed throughout the exterior design, down to the finest of touches. Taking inspiration from the Type 57 Roadster Grand Raid Usine's unique symphony of black and yellow that Ettore Bugatti so loved, the W16 Mistral offers a creative canvas for which a plethora of color combinations can be specified — allowing drivers to create a truly individual character for their vehicle, in the same way Ettore did.

"From the very beginning of the design process, it was clear to us that the W16 Mistral represented a thrilling opportunity to make history. This moment was not only an opportunity to look back wistfully at the closing of Bugatti's monumental W16 era, but also to inspire a sense of awe with the next generation of aerodynamic art. Fusing Bugatti's signature performance, luxury and elegance — in a meticulously engineered, safety-driven open-top design that can reach 420 km/h — is an achievement that firmly etches the W16 Mistral into a century-long story of Bugatti masterpieces. Like the evocative wind it is inspired by, the W16 Mistral stirs irresistible emotions of wistfulness, while conjuring an overwhelming sense of adventure for the future. It offers an experience that is quintessentially Bugatti; it is truly incomparable."

FRANK HEYL
BUGATTI DIRECTOR OF DESIGN

[1] W16 Mistral: WLTP fuel consumption, l/100 km: low phase 40.7 / medium phase 21.9 / high phase 18.3 / extra high phase 17.6 / combined 21.8; CO2 emissions combined, g/km: 495; efficiency class: G