PORSCHE DESIGN

Press Release

February 2018

Porsche Design Inspiration Motorsport.

Porsche Design MONOBLOC ACTUATOR. Titanium Chronograph. Next Level.

The Porsche Design Timepieces AG utilized technology transfer from the world of motorsport to develop the technology of the new MONOBLOC ACTUATOR Titanium Chronograph from Porsche Design. Inspired by the functionality of the high-RPM mechanical valve control of the new Porsche 911 RSR, the engineers at Porsche Design Timepieces AG invented an integrated rocker switch, which controls the chronograph's operation entirely from inside the watch's case. This paradigmatic example of performance at the highest level exemplifies precision engineering in the smallest possible space.

What qualities do motorsport and time measurement share in common: Precision, functionality, and performance in every second. Like a racecar, a wristwatch is a typical product of the 20th century, which has repeatedly spurred engineers and technicians to achieve progressively greater feats. Porsche Design is the intersection of these two worlds. Established by Professor Ferdinand Alexander Porsche in 1972, Porsche Design has always drawn its inventive spirit from numerous sources, the foremost being Porsche's unique competence in motorsport. The goal is to create technically inspired products outside the automotive world, yet with the same high standards of aesthetics and function that distinguish Porsche motorcars. Achieving this objective means constantly questioning the status quo, developing innovative technical solutions, and conducting intensive tests to guarantee long-lasting performance. "If you analyse the function of an object, its form often becomes obvious": this leitmotif continues to inspire iconic products from Porsche Design today.

Then as now, the unflagging drive for top performance and precision, combined with a technology transfer from racecar construction to watchmaking – found no-

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

where else in the watch industry! – are the duty and the motivation that continually keep Porsche Design one step ahead.

This ambition helped Porsche achieve its unique reputation and can be traced to the year 1948. Just two weeks after its delivery, the very first Porsche 356 won its first mountain race in Innsbruck. With its significantly better overall package – consisting of low weight, high drivability and strong engine performance – the legendary sportscar bested its competitors and left them far behind. At Porsche, one still describes this today as “Intelligent Performance”. It is readily visible on the racetrack, where victory or defeat is decisive.

Motorsport was the second focal point in the 1960s, alongside the further development of serially manufactured vehicles, of which there was only one series at the time: first the Porsche 356 and afterwards the 911. Under the guidance of F. A. Porsche, who joined the company in 1957 and first took responsibility for its design department in 1962, numerous racing vehicles were developed, which performed with outstanding success in endurance races. More than thirty thousand victories on the world’s most demanding racecourses earned Porsche an outstanding reputation as a highly competent manufacturer of sportscars. The brand’s name became synonymous with the highest level of engineering competence.

This heritage and its associated prestige also characterize Porsche Design today. To develop its new products, Porsche Design enjoys exclusive access to the decades-long experience and expertise of the sportscar manufacturer.

Thanks to this winning combination, Porsche Design has emerged during the past forty years as a powerful source of innovations for high-end mechanical timepieces. In less than half a century, with wristwatches basing their identity and character on technical innovation, functional design and an aesthetic that defines new styles, Porsche Design has repeatedly set new standards in the watch industry.

The Black Revolution

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

Press Release

February 2018

The beginning of this success story coincides with the company's very first wristwatch, the Chronograph I from 1972. With this timepiece, which premiered in an era when watches were primarily worn as jewellery, Porsche Design started a trend that has become an integral feature in the world of watches: the color black. As is true of every product from this house, the design resulted from a thorough re-examination of the underlying function, which, in this instance, is the optimal readability of the dial.

The solution was found in the cockpits of the era's racing vehicles. To reduce glaring reflections, which interfered with the readability of the instruments, and to assure maximum contrast and the quickest possible reading, the dials on cockpit instruments were matte black, above which white indicators were boldly and unmistakably visible. Porsche Design successfully transferred this unbeatable combination onto the dial of its watch. A black face with white markings and hands beneath a scratch-resistant sapphire crystal facilitated instantaneous and intuitive reading of the time display, even in adverse lighting conditions. A sporty icon with instrumental character was born.

Another Innovation: Titanium

The next innovation of Porsche Design followed with the debut of the first all-titanium chronograph in 1980. Here again, motorsport was the mother of this idea. Extremely tough and resistant, yet lighter in weight than stainless steel, titanium had been used by Porsche in the construction of engines for racecars because this corrosion-free material satisfies all of the engineers' technical requirements for resilience, resistance and durability, which it unites with extraordinarily lightweight. Thanks to these specifications, and in combination with titanium's antiallergenic characteristics (an essential aspect in the world of wristwatches), this timepiece again embodied state-of-the-art engineering and impressively reaffirmed the company's innovative power.

The Evolution of the Chronograph: Porsche Design MONOBLOC ACTUATOR

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

PORSCHE DESIGN

Press Release

February 2018

Since its invention in the 19th century, the chronograph has been regarded as the most important horological complication. Thanks to their ability to measure and display the duration of elapsing and elapsed intervals, chronographs have accompanied countless events the fields of science and sports. After the Chronograph I and the Titanium Chronograph, Porsche Design now presents another pioneering achievement: the MONOBLOC ACTUATOR. This model's concept for controlling the chronograph mechanism is not only trailblazing, but also futuristic.

From the Idea to the Realization

Every innovation begins with a concept. In this instance, the idea was conceived many years prior to the product's launch. Whenever a decision is made at Porsche Design Timepieces AG, established in Solothurn in 2014, it is always fundamentally important to uphold the founder's high standards. As in the list of specifications for a new sportscar, here too the developers question the status quo in order to endow the new product with greater innovation and higher capabilities, while simultaneously ensuring that it will deliver lastingly high performance.

In 2013, the specialists at Porsche Design Timepieces AG began an intensive examination of the conventional operation of the chronograph. They questioned the previously typical approach, which involves two push-pieces located on the flank of the case above and below the crown. This exposed position is a weakness because it makes the buttons vulnerable to shock and other environmental influences. This is why the Titanium Chronograph from 1980 had already integrated the buttons and made them flush with the plane of the case. With this approach in mind, the team's members asked themselves: Would it be possible to make the operating buttons disappear entirely? In analogy to motorsport and racecar engines, minimalism is also a winning principle for watches: because a component that is not present at all can never malfunction.

Soon the starting shot was fired for the new project. The beginning was the design phase, in which the fundamental functionality of a new chronograph control needed harmonizing with other requirements for a high-quality wristwatch with regard to

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

Press Release

February 2018

wearing comfort, user-friendliness, readability, and water-resistance. The design engineers pursued an approach, which envisioned a rocker switch fully integrated in the case, which would assure precise control of the chronograph's functions.

To transform this idea into reality, the engineers turned to their colleagues at Porsche Motorsport in Weissach, Baden-Württemberg. The experts began realizing the new concept together with the engineers from Porsche Development Centre, where decades of work has continually improved the performance of Porsche racecars.

High-Tech in Watches' Cases

Inspired by the high-performance concept used in the engine of the new Porsche 911 RSR, Porsche Design transferred the technical principle of valve control via a rocker arm for high-RPM racecar engines to an innovative control mechanism for the MONOBLOC ACTUATOR'S chronograph functions. Instead of the two push-pieces, which trigger the stopwatch functions of a conventional chronograph, the MONOBLOC ACTUATOR'S chronograph functions are set into motion by a single, pressure-operated, doubly borne rocker switch which is integrated into the case on the right-hand side of the entire mechanism.

Similar to the principle of force transmission by a camshaft in an automobile's engine, when the chronograph's rocker switch is operated, it swings toward the centre of the watch's movement. Thanks to the narrow tolerances upheld in the construction, the control pressure is precisely transferred by hardened special tappets, analogous to the constructive principle used for an engine's valve tappets. Specially manufactured high-performance insulators on the tappets assure perfect insulation toward the interior of the movement. This insulating function is guaranteed throughout the operation of the chronograph: here again, the principle is analogous to the one used to insulate the combustion chamber in a racecar's engine.

When activated, the tappets are directly in contact with the mechanical movement so the chronograph's functions are controlled with the utmost precision. A specially developed, doubly borne system for the rocker switch assures that this component

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

Press Release

February 2018

moves in a precise rotary motion. Each time it is activated, the rocker “dips” into the watch’s case and swings across the sapphire crystal, which is outstandingly antireflective and protected by a hard coating. A special spring mechanism with ceramic positioning balls ensures that the tappets and the rocker return precisely to their initial position, even after many years of use.

The greatest challenges, which had to be conquered during the developmental process were:

- To lastingly assure nonabrasive transfer of pressure from the chronograph’s operation by the rocker switch to the movement via rotary gliding motion
- To prevent damage to the surface of the sapphire crystal by precisely guiding the rocker switch across the sapphire crystal and by applying a special hard coating to the sapphire crystal, which undergoes seven successive antireflective treatments
- To accurately define the motion and the precise return of the rocker switch to its zero position
- To hermetically seal the watch’s case against moisture and dirt, also when the rocker switch is operated underwater.

Among other solutions, the engineers at Porsche Design Timepieces AG mastered these challenges via ultramodern, computer-assisted calculations and with the know-how of the materials experts in Weissach. Intensive testing and meticulous analyses, conducted by independent laboratories in Switzerland, subjected the mechanism to test after test to optimize its individual components. For example, the titanium-carbide coating of the watches’ cases, the connection of the wristbands and the construction of the dials were repeatedly optimized. An essential point here was to ensure the case would lastingly resist water pressure up to ten bar – thanks to its hermetic seal, the chronograph control of the MONOBLOC ACTUATOR can be operated underwater. A special testing method was developed to guarantee this capability over the long term.

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse

PORSCHE DESIGN

Press Release

February 2018

With this unconventional chronograph and its innovative operating concept, Porsche Design sets another milestone in its history and again makes a remarkable contribution to the further evolution of high-quality and technically sophisticated wristwatches.

About Porsche Design:

Porsche Design is a premium-lifestyle brand founded in 1972 by Professor Ferdinand Alexander Porsche. His mission was to build a company that takes the principles and spirit of Porsche beyond the automotive world. All Porsche Design products stand for precision and perfection, smart functions, refined functional design and boast an impressive level of technological innovation. Created and engineered by the legendary Studio F. A. Porsche in Austria and brought to life by carefully-selected manufacturers. Porsche Design products are sold worldwide in over 140 Porsche Design stores, high-end department stores, exclusive specialist retailers and the official online store (www.porsche-design.com).

For further information, visit the Porsche Design homepage at www.porsche-design.com.

For regular updates please follow us on:

Facebook: http://facebook.com/PorscheDesignGroup
Instagram: https://instagram.com/PorscheDesignOfficial
Twitter: http://twitter.com/PorscheDesign
YouTube: http://youtube.com/PorscheDesign

Porsche Design Group

Nadine Cornehl

Spokesperson Accessories & Fashion

Tel.: +49 (0)711 911 12919

E-mail: nadine.cornehl@porsche-design.de

Porsche Lizenz- und
Handelsgesellschaft mbH & Co. KG
Press Department
Grönerstrasse 5
71636 Ludwigsburg
Germany

Tel: +49 [0] 711 911 11939
Fax: +49 [0] 711 911 12627
E-mil: presse.porsche-design@porsche.de
www.porsche-design.com/presse