

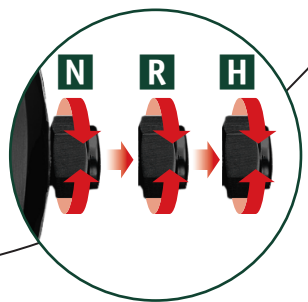


Instructions for use
Mode d'emploi

ROYAL OAK
CONCEPT CARBON
FOURBILLON AND
CHRONOGRAPH

Calibre 2895
Hand-wound Movement

AP
AUDEMARS PIGUET
Le maître de l'horlogerie depuis 1875



ENGLISH

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The Manufacture Audemars Piguet

The Vallée de Joux : cradle of the watchmaker's art

In the heart of the Swiss Jura, around 50 kilometres north of Geneva, nestles a landscape which has retained its natural charm to this day: the Vallée de Joux. Around the mid-18th century, the harsh climate of this mountainous region and soil depletion drove the farming community settled there to seek other sources of income. With their high degree of manual dexterity, inexhaustible creativity and enormous determination, the inhabitants of the valley, known as Combiens, were naturally drawn to watchmaking.

Due to their high quality, the movements they produced acquired great popularity with the Geneva firms which used them to create complete watches.

From 1740 onwards, watchmaking developed into the principal industry of the Vallée de Joux. This region was thus transformed, as an 1881 chronicle put it, "into a land of milk and honey, in which poverty has rapidly disappeared".

Two names for a great adventure

In 1875, two young men passionate about Haute Horlogerie — Jules-Louis Audemars and Edward-August Piguet — decided to pool their skills to design and produce watches with complications in the Vallée de Joux, the cradle of Haute Horlogerie. Determination, imagination and discipline led them to instant success. A branch in Geneva was their next move in about 1885 and new commercial links were forged at the 1889 Paris World Exposition, where they exhibited complication pocket watches. The Audemars Piguet factory continued to expand as the years went by. Its creations represented major milestones in the history of Haute Horlogerie, like the first minute repeater wristwatch in 1892 and the smallest five-minute repeater movement ever made in 1915.

From 1918 onwards, the founders passed the reins of the business onto their sons, who in turn perfected their expertise in manufacturing men's and ladies' wristwatches as well as designing new sophisticated, ultra-thin movements. Perseverance and initiative were the watchwords: while the Wall Street crash in 1929 was a bitter blow, the company directors were soon designing so-called skeleton watches before embarking on chronograph production.



But this new momentum was abruptly interrupted by the Second World War. Re-organisation was necessary in the aftermath of the conflict. The factory focused on creating top-of-the-range items in keeping with its tradition of innovation. A strategy that would prove its worth, especially since it was backed by outstanding creative daring.

Audemars Piguet continued to build on its now international reputation with creative designs. 1972 saw the launch of the *Royal Oak*, the first, immediately successful high-quality sports watch in steel, followed in 1986 by the first ultra-thin tourbillon wristwatch with automatic winding. The creative spirit of the Manufacture has not faltered since, offering aesthetically original timekeepers with outstanding movements. Thus it brought watches with complications back into fashion at the end of the 1980s, launching its extraordinary *Tradition d'Excellence* collection in 1999. All the signs of a bold spirit rooted firmly in tradition and auguring well for the future.

Materials

Forged carbon for the case

The *Tourbillon, Chronograph Royal Oak Concept Carbon* is based on the *Royal Oak Concept* model brought out in 2002 for the 30th anniversary of the *Royal Oak* collection. Aiming for lightness and sturdiness, its designers preferred a very dense carbon (52% fibres) to either titanium or platinum. The nanofibres of this ultra-light material are not woven but compressed with a particular polymer at a temperature of around 240°C and a pressure of 7.5 tons per cm². The product of this technology is a carbon watchcase that is remarkably lightweight, sturdy and hard.

Light yet rigid, the resulting compressed molecular structure makes this material extremely strong mechanically and exceptionally stable in resisting thermal shocks.



Eloxated aluminium, PVD, amorphous carbon and ceramics

The *Tourbillon, Chronograph Royal Oak Concept Carbon* pioneers in the use of these new materials, widely used in the aviation and motor industries.

The mainplate is made of green aluminium that has been sapphire-blasted and eloxed to prevent direct contact between the chronograph components and the carbon.

The bridges are made of nickel silver with a black PVD coating while the power-reserve cone is clad in amorphous carbon coating that gives the material extraordinarily high resistance to wear.

Research work in another field led to the development of innovative ceramics. For the bezel, crown and pushpieces, Audemars Piguet selected a ceramic material with very specific physical properties. The ceramic has undergone particularly delicate treatments calling on all the knowhow of the Manufacture's engineers and watchmakers. The essential qualities of this technical ceramic are its tremendous resistance to friction and wear and its exceptionally smooth final finish.



Treatments and finishes

Of course, other materials are also used to make the various parts that make up the movement. Yet what makes this watch truly outstanding are the different treatments applied to these visible parts: some are hand-drawn and polished, others are eloxed (an oxidation process to colour and protect aluminium), sapphire-blasted to obtain a smooth surface or coated with black PVD to increase scratch resistance.

These finishes also give *The Tourbillon, Chronograph Royal Oak Concept Carbon* a sporty, contemporary look.

Movement:

- Mainplate made of ISO carbon

Dial side:

- Tourbillon bridges and chronograph counter made of hand-drawn, polished steel
- Crown position indicator bridges and power-reserve bridges made of nickel that has been sapphire-blasted, hand-drawn and coated with black PVD
- Tourbillon carriage bridges and arm made of steel that has been sapphire-blasted and coated with black PVD with polished tips
- Balance coated with black PVD and secured by yellow-gold screws

Caseback side:

- Central chronograph module made of green eloxed aluminium
- Central bridge made of carbon
- Control and coupling levers made of steel that has been sapphire-blasted, hand-drawn and coated with black PVD



Functions

The Audemars Piguet Calibre 2895 qualifies as an extraordinary exploit. With its twin-barrel system ensuring a 10-day power reserve, this hand-wound movement features a tourbillon, a power-reserve indicator and a high-performance chronograph.

The tourbillon

The most outstanding watchmakers have been striving to improve timing accuracy since the second half of the 18th century. The desire to achieve an identical setting for a timepiece in all positions is a major challenge. Under the Earth's pull, the tiniest variations in equilibrium have a negative influence on the regulating part (balance / balance-spring) when positioned vertically, thus causing running differences in the watch.

In 1801 the watchmaker Abraham Louis Breguet thought up a tourbillon regulating system that balanced the running differences in all positions.

The operating principle has remained largely the same to this day: the escapement parts (wheel, pallet and balance) are held in a movable frame rather than being fixed in the movement. By rotating on its axis every minute with the escapement parts, this frame enables all the parts to change position constantly, thereby offsetting the running differences caused by the effects of gravitation.

185 years later, in 1986, Audemars Piguet successfully fitted this system for the first time into a production



wristwatch with an ultra-thin automatic mechanical movement. The Manufacture in Le Brassus has since built on this success by presenting many tourbillon models combined with all watch complications.

The Manufacture, still one of the select few mastering the secrets of this complication, offers more than 25 different tourbillon movements.

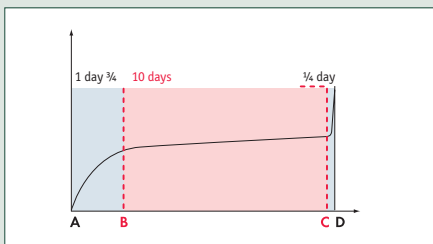
The chronograph

We are often called upon to be able to measure the time separating two events. This makes the chronograph an indispensable instrument. Its invention was the work of a watchmaker in the Vallée de Joux, Henri-Féréol Piguet, who designed and created this system in 1845.

Since the end of the 19th century, Audemars Piguet has developed and produced some of the world's most sophisticated timepieces with a dazzling array of features. The Audemars Piguet *Tourbillon, Chronograph Royal Oak Concept Carbon* watch with manual wind, consisting of 384 pieces, works in perfect harmony with this age-old philosophy.

Twin-barrel system - Power reserve

The red power-reserve indicator is located at the top of the dial. The rapid-rotation twin-barrel system – with a maximum number of revolutions restricted to 19.75 – guarantees constant force during the full ten days of autonomy, thus ensuring enhanced efficiency and improved timekeeping. This is because the power reserve actually provided by the twin parallel-mounted barrels is equivalent to twelve days. However, an ingenious locking system – in the zones indicating full (C–D) and low (A–B) charge levels – concentrates the watch operation on the ten days of medium-level running, which are the most regular (B–C), thereby ensuring optimal efficiency.



The 19.75 winding revolutions of each barrel – a well-above-average figure – are facilitated by the use of a particularly thin spring. This specific feature ensures far more flexible and regular transmission of energy to the gearwheels, resulting in higher rating precision and reliability.

The power-reserve indicator of The *Tourbillon, Chronograph Royal Oak Concept Carbon* benefits from

two other developments that guarantee reliable and accurate display thanks to perfect adjustment and permanent winding of the indicator hand.

The power-reserve indicator with double inverted cone transmission was developed by Audemars Piguet. The Manufacture has now adapted this system to a wristwatch format, enabling extremely accurate adjustment of the amplitude of the indicator hand. A beryllium copper cone coated in amorphous carbon moves up and down the barrel-arbor according to the degree of winding of the watch; when the position is low, the barrel is fully wound, and vice versa. In contact with this mobile cone, a second cone, also coated in amorphous carbon, picks up this information to transmit it to the power-reserve indicator hand at 12 o'clock. The planetary differential type gear limits the choice of positioning for the power-reserve hand, while the cone transmission system provides more scope thanks to the lever.



Twin barrel movement with power-reserve cone and locking system

Views of the movement

Calibre 2895

Bridge side



Dial side



Movement technical data

Basic thickness : 10,67 mm

Total diameter : 34,60 mm (15 ⅓ lignes)

Fitting diameter : 33,80 mm

Balance diameter : 9,12 mm

Frequency : 21'600 vibrations / hour (3 Hz)

Number of jewels : 34 rubies

Power reserve : about 10 days

Hand-wound with a disconnecting-gear system
(about 158 turns of the winding stem)

Crown position indicator (positions : Winding,
Neutral, Time-setting)

Variable inertia wheel protected by two shock
absorbers

Balance spring with the Breguet-Phillips curve

Number of parts : 384

Case technical data

Diameter : 44 mm

Total height : 18,76 mm

Case water resistance : 100 m (10 bars)

Forged carbon case middle

Ceramic bezel, crown and pushpieces

Sapphire crystal caseback

Watch indications and functions

(see figure on the inside cover)

- ① Hour hand
 - ② Minute hand
 - ③ Second counter hand
 - ④ Linear minute counter hand (up to 30 minutes)
 - ⑤ Power reserve indicator hand
 - ⑥ Crown position indicator hand
- Ⓒ Pushbutton of the chronograph function
- Push once: start
 - Push again: stop
- Ⓓ Pushbutton to return to zero

Your watch is fitted with a three-position crown:

- N** Winding crown in the neutral position
- R** Crown in manual winding position
- H** Crown in the proper position to set the hour and minutes

Warning: Unscrew the crown before and after use. Carefully screw it back in to ensure water resistance.



Crown position indicator

Your watch features a hand indicating the position of the crown.

The crown starts out in **Neutral (N)** position. It is screwed in and the watch is running normally.

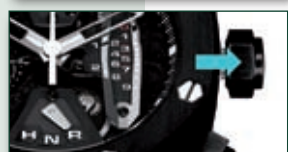
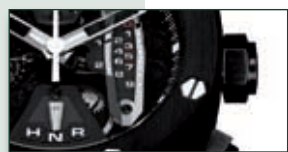
Unscrew the crown. Then:

Pull the crown into Position **R**: the crown position indicator hand will move into the **Rewinding** position. This is the proper position for rewinding your watch.

Pull the crown into Position **H**: the crown position indicator hand will move into the **Time-setting** position. This is the proper position for setting the time.

Push the crown into Position **N**: the crown position indicator hand will move into the **Neutral** position. This will disconnect the crown.

To ensure that your watch will run properly, the crown must be returned to **Neutral (N)** position once the proper adjustments have been completed. You must also screw the crown back in to ensure the watch's water resistance.



Setting the time

When the crown selection indicator is in position **H**, you can set your watch by moving its hands forward or backward without risk of damage to the mechanism.

The linear minute counter

How do you read the linear minute counter?

This minute counter consists of a dedicated indicator hand mounted on the counter spindle. This hand takes 30 minutes to make one full rotation. It also has a double vertical scale (tens of minutes from 1 to 2; minute units from 0 to 9). The elapsed minutes in the chronograph mode are read off through dedicated openings on the counter bridge. The elapsed time is indicated by these openings shifting from white to black.

For instance:

0 or 30 minutes

19 minutes

25 minutes



Operation of chronograph

Start

Press pushbutton **C**, which starts the second counter hand **3** and the minute counter hand **4**.



Stop

Press pushbutton **C** once again to stop the chronograph.



To read the time taken for an event, consult the following:

- The minute counter hand **4** which indicates the number of minutes taken,
- The second counter hand **3** which indicates the number of seconds taken.

Returning to zero

To return the hands to zero, check that the chronograph is stopped, press pushbutton **D**.



To continue timing an event:

After the first stop (**C**), the chronograph can be restarted and stopped (**C**) at will without first requiring you to return it to zero. This means you can obtain a total time by adding the second time to the first and so on.

Important: the chronograph is designed to measure intervals of elapsed time and not to run continuously. In addition, never press push-pieces **C** and **D** at the same time: this might seriously damage the mechanism.



Winding the watch

To rewind the watch, make sure that the selection indicator hand is in position **R**.

The simplest method is to rewind the watch completely every 7 days (do not allow more than 9 days to elapse) by turning the crown clockwise. This will prevent the watch from stopping on the last day.



Power reserve – "full"

Approximate position of the hand after the watch has been completely rewound, with a power reserve of about 10 days.

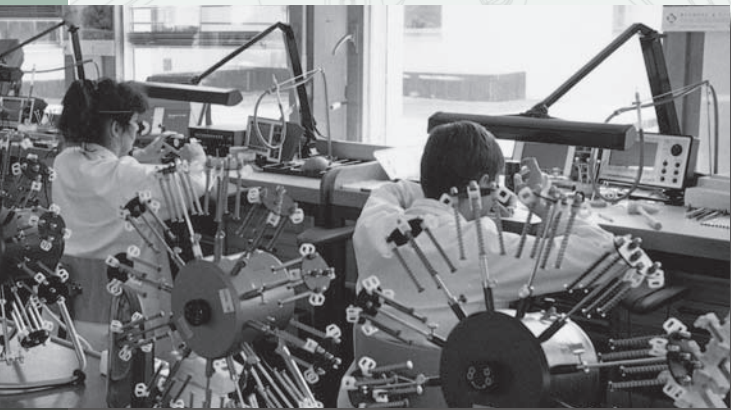


Power reserve – "medium"

Approximate position of the hand after the watch has run for about 7 days. We advise rewinding the watch to maintain optimal operating accuracy.

Power reserve – "empty"

Position of the hand when the watch has stopped. If the chronograph has been running and consuming more energy than usual, the watch will stop sooner.



Guarantee and care

All details concerning the guarantee and instructions on caring for your watch are provided in the enclosed certificate of origin and guarantee.

