Reference 6105

Caliber 240 C LU CL LCSO

Self-winding wristwatch with sunrise and sunset indications and summer time/winter time correction.
Sky chart, time of meridian passage of Sirius, time of meridian passage of the moon,
angular motion of the moon, moon phases, date.

Reference 6105 is a Celestial watch representing a concentrated blend of horological innovations. The futuristic design of the 47 mm-diameter white gold case displaying an "X" shape decoration inspired by space modules and displayed on the case flanks. The spectacular astronomical watch dial permanently showcases the heavenly canopy over Geneva and all other cities located at the same latitude, emulating the apparent movement of the stars as well as the positions and phases of the moon in the course of a lunar cycle. It is also the first Patek Philippe wristwatch to display sunrise and sunset times and to feature a summer time/winter time correction mechanism. This fascinating celestial ballet is choreographed by the self-winding 240 C LU CL LCSO caliber, a masterpiece of complexity that required five years of development and the filing of six patents.

Celestial mechanics

To implement the fascinating vision of a moving nocturnal sky, Patek Philippe developed a system of superposed disks that rotate at different speeds and convey an amazing impression of depth. The background is provided by a mineral disk in in the form of a wheel with 279 teeth; it tracks the orbital position of the moon. Via a planetary gear system, it also drives a wheel with a small disk that displays the moon phases in a small round aperture. A 356-tooth wheel above it rotates a transparent disk that depicts the sky chart on the front side and a representation of the Milky Way on the opposite side. The three disks, each merely two tenths of a millimeter thick, are protected by the sapphire-crystal glass, which on the inside features an elliptical contour that frames the portion of the heavens that are visible from Geneva and all other places with the same geographical latitude.

Stellar precision

With this unique mechanism, Patek Philippe has achieved a nearly incredible degree of precision in the astronomical depiction of the heavenly canopy. A lunar day is defined by the time that elapses between two consecutive passages of the moon across a given meridian; on average, it lasts 24 hours, 50 minutes, and 28.328 seconds. A lunation (the period of time between two consecutive full moons) has an average duration of 29 days. A sidereal day is defined as the time between two consecutive passages of a fixed star (such as Sirius) across a given meridian; its average duration is 23 hours, 56 minutes, and 4.09892 seconds.

To assure correct displays, these deviations from mean solar time require appropriate step-up and reduction gear ratios in the going train that transmits the force from the spring barrel of the movement to the individual astronomical indications. Some of these ratios rely on the accuracy of the moon-phase display versus the sidereal day, others on the accuracy of the sidereal day versus the orbital position of the moon, etc. Overall, more than 25 billion (25,000,000,000) variations were calculated for the transmission ratio pairings of the going train. From this staggering number of ratios, Patek Philippe picked the optimal set that resulted in the smallest possible deviations for all displays. The outcome of the computations surpassed all expectations:

- The deviation for the lunar day is 0.05 seconds per day, 18.385 seconds per year, or 30 minutes and 38.5 seconds per century.

- For a sidereal day, the deviation is 0.088 seconds per day, 32.139 seconds per year, or 53 minutes and 33.9 seconds per century.

- The moon-phase deviation is 4.203 seconds per lunation.

In step with the seasons

In summer, the Sun travels higher across the sky, lengthening the days with a broader visible arc, it rises further in the northeast and sets further in the northwest. In winter, the Sun's visible path is lower, thus shortening the days. Its visible path is therefore narrower, rising further in the southeast and setting further in the southwest. The combination of these phenomena causes the duration of daylight to change daily, varying by less than one minute per day around the solstices, and by about two to three minutes per day around the equinoxes. Throughout the year, these variations in sunrise and sunset times, and the corresponding changes in the length of the day, are reflected by the indications of the sunrise and sunset hands on the Ref. 6105G-001.

Displays, fonctions and settings

DISPLAYS

1- MEAN SOLAR TIME HOUR HAND
2- MEAN SOLAR TIME MINUTE HAND
3- DATE HAND
4- DATE DISK
5- SUNRISE TIME HAND
6- SUNSET TIME HAND
7- SUNRISE AND SUNSET SCALES
8- SKY VISIBLE ABOVE GENEVA
9- MERIDIAN
10- SKY CHART
11- ANGULAR MOTION OF THE MOON AND MOON PHASES
12- SCALE FOR MOON AND SKY ADJUSTMENTS

CORRECTORS

A- DATE CORRECTION
B- SWITCH TO SUMMER TIME
C- SWITCH TO WINTER TIME

3-POSITION CROWN AT 2 O'CLOCK

I- PUSHED IN: INACTIVE (CLOCKWISE)
I- PUSHED IN AND DISENGAGED: TO SET THE ANNUAL INDEX (COUNTERCLOCKWISE)
II- PULLED OUT: ADJUSTMENT OF THE MOON (CLOCKWISE)
III- PULLED OUT: ADJUSTMENT OF THE SKY (COUNTERCLOCKWISE)

2-POSITION CROWN AT 4 O'CLOCK

I-PUSHED IN: TO WIND THE WATCH
II-PULLED OUT: TO SET THE TIME

Instructions

CROWNS

The crown at 4 o'clock is used to wind the watch (position 1) and to set the time (position 2).

The crown at 2 o'clock is used to adjust the annual index, governing the hands indicating the times of sunrise and sunset. It is also used to set the moon and the sky chart.

Note:

The 2 o'clock crown features a disengageable system: turning it clockwise produces no effect. To put it in position 2, the wearer must first press the crown before rotating it to engage the setting function. Once the adjustment is complete, pressing the crown while rotating it clockwise returns it to its initial position, safely disengaging all correction functions.

WINDING

Your watch has a self-winding movement. The movements of your wrist set a rotor in motion; this tensions the mainspring which stores the energy. Off the wrist, your watch has a minimum power reserve of 38 hours. When it has stopped after depleting the power reserve, it can be rewound by hand until the movement restarts (about 20 clockwise turns of the crown).

The crown at 4 o'clock winds the movement by turning clockwise. Turn the crown gently and uniformly and stop as soon as you feel resistance; if you wind the watch too vigorously, this might damage the movement.

Caution: *Please wind the watch before you put it on. This way, you can avoid lateral pressure on the winding stem which in the course of the years could damage the stem tube.*

SETTING THE TIME

To set the time, pull the crown at 4 o'clock out, and turn it in either direction. Once the correct time is set, press the crown home again.

Caution: *Please set the time before you put the watch on. This prevents lateral pressure on the winding stem. We recommend that you turn the crown only with two fingers and use your fingernails to pull it out.*

DATE CORRECTION

To correct the date, press the corrector at 7 o'clock as often as needed to display the correct date. Every year, the date must be corrected five times – at the end of each month that has fewer than 31 days.

Caution: *The date change mechanism is active between 10 pm and 2 am. During this time, the date should not be adjusted with the aid of the correction push piece.*
Correction push pieces should be actuated exclusively with the correction stylus that was delivered with the watch. The use of any other tool could damage your timepiece.

ASTRONOMICAL INDICATIONS

Note:
If your watch has stopped running, rewind it by hand until the movement restarts (about 20 clockwise turns of the crown) before performing any corrections. Correction push pieces should be actuated exclusively with the correction stylus that was delivered with the watch. The use of any other tool could damage your timepiece.
All adjustments must be performed in the order described below.
For information on adjusting the Ref. 6105 Celestial, please consult our website www.patek.com. COLLECTION › Grand Complications › 6105G-001 and scroll down to the adjustment procedure for the Sunrise and Sunset Celestial.

SETTING ANNUAL INDEX - SUNRISE AND SUNSET

To set the sunrise and sunset times, the wearer must adjust the annual index by first depressing the crown at 2 o'clock while rotating it to engage the setting function. Rotating the crown counterclockwise produces an audible click, enabling precise adjustment of the annual index.

- Counterclockwise rotation adjusts the annual index, which interacts directly with the sunrise and sunset hands.

- To set the annual index, consult the date, time, and nearest city on the dedicated page for your timepiece at Patek.com.

- Position the sunrise / sunset triangle at 12 o'clock by turning the crown counterclockwise. The red triangle is located on the inner edge of the date disc.

- Once at 12 o'clock, advance it by the number of large segments (thick red and black graduations) indicated on the website, then by the number of small segments (fine black graduations) likewise specified. The sunrise and sunset hands will now align on the time reading scale.

- After performing this setting, press the crown at 2 o'clock while rotating it to return it home again.

SETTING THE MOON

To set the moon, the wearer must first depress the crown at 2 o'clock while rotating it, then pull it to position 2 and turn it clockwise.

- To set the moon, consult the dedicated page for your timepiece at Patek.com.

- By turning the crown clockwise, set the full moon to the letter "S" (a small arrow index at the moon simplifies the alignment procedure).

The program indicates how many revolutions of the dial are necessary to display the correct moon phase for the current date. (For instance, the number "5" means that you need to rotate the arrow-shaped moon index past the letter "S" five times.)

Note: *This adjustment may require up to 28 revolutions of the dial!*

- To set the moon phase to the current time of day, look up the "Moon adjustments" line to find the correct number of "Large divisions" and "Small divisions" on the scale, then advance the moon index by that many large and small divisions by turning the crown at 2 o'clock.

- After performing these settings, press the crown while rotating it to return it home again.

SETTING THE SKY CHART

To set the sky chart, the wearer must first depress the crown at 2 o'clock while rotating it. Then pull it to position 3 and turn it counterlockwise.

To set the skychart, consult the dedicated page for your timepiece at Patek.com.

- Align the sky index (small arrow in the Milky Way) with the letter "S".

- In the program, look up the "Sky adjustments" line to find the correct number of "Large divisions" and "small Divisions" on the scale, then advance the sky index by that many large and small divisions by turning the crown at 4 o'clock. The scale is located on the outermost periphery of the dial.

- After performing these settings, press the crown while rotating it to return it home again.

CORRECTING SUMMER TIME / WINTER TIME

By displaying the times of sunrise and sunset, the watch naturally invites a subtle and easy adjustment of the daylight saving time, not only of the current time, but also of the times of sunrise and sunset.

For this purpose, two correctors are positioned at 9 and 10 o'clock.

Pressing the corrector at 9 o'clock advances the time by one hour to switch to summer time, while pressing the corrector at 10 o'clock subtracts one hour to return to winter time.

Movement features

Self-winding mechanical movement

Caliber 240 C LU CL LCSO

CELESTIAL. SUNRISE AND SUNSET.

DIAMETER	38 MM
HEIGHT	7.93 MM
NUMBER OF PARTS	426
NUMBER OF JEWELS	51
POWER RESERVE	MIN. 38 HOURS, MAX. 48 HOURS
WINDING ROTOR	OFF-CENTER MINIROTOR IN 22K GOLD, UNIDIRECTIONAL WINDING
BALANCE	GYROMAX ®
FREQUENCY	21,600 SEMI-OSCILLATIONS/HOUR (3 HZ)
BALANCE SPRING	BREGUET
HALLMARK	PATEK PHILIPPE SEAL

Care and maintenance

PATEK PHILIPPE SEAL

The Patek Philippe Seal applies to the entire watch, including the movement, case, dial, hands, pushers, strap, and clasp as well as to all other facets that contribute to the precision and aesthetic perfection of the timepiece. It covers the technical, functional, and aesthetic factors, but also rate accuracy, dependability, and customer service quality. Additionally, it reflects the maker's know-how and all other assets needed for the development, production, and long-term maintenance of an extraordinary timekeeping instrument.

QUALITY CONTROL

The movements and completely assembled watches are subject to a series of technical tests and visual inspections to verify their rate accuracy, winding speed, power reserve, reliability, water resistance, and overall appearance. After it was assembled, your self-winding watch will already have run for about 14 to 30 days before leaving the workshops; it fully complies with the stringent criteria of the Patek Philippe Seal.

WATER RESISTANCE

Your watch is fitted with different types of seals to protect the movement against the ingress of dust and moisture and to prevent damage if it is immersed in water. However, if your watch receives a blow to the crown or the crystal, its water resistance may be impaired. Never pull out the crown or activate the pushers or the correctors in a humid environment or underwater, as the water resistance of your watch would no longer be guaranteed under these conditions.

SERVICE

We recommend that you have your watch serviced every 8 to 10 years. The best way to do this is to bring your watch to an Authorized Patek Philippe Retailer who will be happy to forward it to our workshops for you. You can then be assured that your watch will be inspected and overhauled by a qualified master watchmaker at Patek Philippe headquarters in Geneva. The watchmaker will completely disassemble the movement and then inspect, clean, and lubricate all the individual parts prior to reassembly. All functions of the watch will also be tested in detail and the escapement regulated if necessary. Finally, its rate accuracy will be monitored and precision-adjusted for a further period of at least two weeks. The entire process may take several weeks because each watch must undergo a complete series of tests to fulfill the strict quality criteria of Patek Philippe.

If you have any questions regarding the maintenance of your watch, contact the Authorized Patek Philippe Retailer nearest you or our International Customer Service department in Geneva, or visit www.patek.com