# JAEGER-LECOULTRE

# Atmos Classique phases de lune



# Expansion chamber Brass cover Balance spring (counterweight) Small chain Mainspring Pulley

- Return spring
  Balance wheel
  Elinvar® wire\*
  Escapement
- Escapement
  Winding spring

\* The Elinvar brand does not belong to Jaeger-LeCoultre.

#### Introduction

We congratulate you on the purchase of your Atmos clock and thank you for your confidence.

With no battery, electric current or winding, the Atmos clock has been living on fresh air since 1928. Its serene, refined design offers you a window on the workings of its going train, to try to figure out its secret. The perpetual moon phase indication celebrates a horological universe where the presiding constants are absolute precision, balance and transparency. It is so precise that it would take 3821 years for this timepiece to lose just one day.

We invite you to consult the operating instructions and we wish you great pleasure with your Jaeger-LeCoultre clock.

#### A virtually perpetual movement

Leonardo da Vinci had already demonstrated that perpetual motion was not feasible – if only because of the laws of physics. But it would have taken more to discourage the researchers. These researchers included the Neuchâtel engineer Jean-Léon Reutter who, in 1928, designed a completely revolutionary clock drawing its power from variations in the ambient temperature. It took yet a few more years of research by our watchmaking firm to transpose this idea into technical reality and patent it. The result came astoundingly close to perpetual motion : the Atmos clock was born.

Its principle is amazingly simple. In a hermetically closed capsule is a gaseous mixture which expands when the temperature rises and contracts when it falls. Connected to the driving spring, the capsule swells like the bellows of an accordion and winds the clock movement up constantly. Between 15 and 30 degrees Celsius, a temperature fluctuation of a single degree is enough to ensure an operating autonomy of about two days. The Atmos clock is designed so that no excessive resistance opposes this minimum power. The Atmos balance wheel oscillates slowly, its lung breathing in perfect harmony with temperature variations and its heart beating quietly twice a minute, i.e. 60 times less quickly than that of a traditional clock, 240 times less quickly than a wristwatch movement and 1,966,000 times less quickly than a quartz watch movement. To get an idea of the delicacy of this minute energy transfer, consider the fact that 60 million Atmos clocks together would consume no more energy than a weak 15-watt electric light bulb.

All the components of the Atmos clock are incredibly precise and dependable, so that it operates virtually without any wear. It is therefore distinguished by its long service life which

-theoretically -can be as long as 600 years. Because of the current state of air pollution, however, regular checking and service are recommended.

The Atmos clock reconciles lovers of technical performance and those for whom sobriety of shape or feats of craftsmanship are the predominant factors. In this respect, nothing has changed. No Atmos clock can escape the five weeks of checking and final adjustments which complete the work of the Jaeger-LeCoultre master-watchmakers.

A unique gem of horological technology, the Atmos clock is a timekeeper of distinction for Heads of State and numerous sovereigns, because in this country unique in the world for the perfection of its watches, it is a tradition to offer guests of honour this Swiss horological masterpiece. This has been the case for decades now, and the eminent recipients include

J.F. Kennedy,Winston Churchill,General de Gaulle and Charlie Chaplin.

## Unique in the world.

#### Atmos®, the clock that lives on air.

Temperature variations are its source of power. Its balance will oscillate as long as the sun shines.

Rises in temperature dilate the gaseous mixture trapped in the expansion chamber which then compresses the winding spring. In the event of a fall in temperature, the reverse occurs. The gas contracts and the spring relaxes. This imperceptible back-and-forth motion is sufficient to wind the Atmos clock.



No battery, no electrical power, no winding. Precise and silent.

#### An approximately 4,000-year lunar calendar

Living in pace with the rotational movements of the earth,the moon and the cosmos, no other instrument for measuring time was more suited to reflecting with the greatest accuracy the lunar circle in the firmament.This function adorns certain Atmos clocks.

A conventional quartz clock with moon phase indication stays thoroughly accurate for two or three years. The most highly perfected mechanical watches, a field in which Jaeger-LeCoultre excels, deviate by one day in 122 years; the Atmos clock,for its part,is designed to display the moon phases with exceptional accuracy for more than 4,000 years.

On the Atmos clock, the moon phases are indicated according to the real phases of the lunar month, called the synodic period, corresponding to the time elapsing between two full moons.

For the moon seen from the earth to have the same position relative to the sun, it will have to travel a further distance on its orbit. As a result, the lunation period lasts slightly longer than the sidereal period, i.e. on average 29 days, 12 hours, 44 minutes and 2.8 seconds (or 29.530588 days). Now, the mechanism of your Atmos clock is so precise that it completes its travel in 29.530568 days, resulting in a tiny difference for each lunation which will amount to one day in 3,821 years.

### Precautions for operation and transport

The Atmos clock is a very high-precision instrument manufactured with technologies such as only the master-watchmakers of Jaeger-LeCoultre are capable of handling. The power needed for this clock to operate is extremely low, which means that your Atmos clock must be placed on a horizontal support that is completely stable (chest of drawers, console, etc.) to ensure optimum operating conditions. Once it has been started, the clock must not be moved : the cabinet or support must be cleaned without handling or moving the clock.

If, however, your clock had to be moved, it is essential to block the balance. To do so, push the balance blocking lever to the right up to the thrust stop. Perform this essential blocking operation when the balance stops, before starting again in the opposite direction.

For transport, use the complete original packaging. For the Atmos Classique phases de lune only : Tighten the locking screw under the cabinet; as soon as it is in contact with the balance nut, do an additional one-quarter turn while blocking it with your hand.





## Special instructions for unpacking the Atmos Classique Phases de lune Transparente clock

- I.Open the outer cardboard packing box.
- 2 Remove the inner cardboard packing box, taking care with the protective foam.
- 3. Remove the start-up instructions placed in the lower protective foam.
- 4. Remove the internal cardboard packing box (brown).
- 5. Open the Atmos cardboard packing box (bronze).
- 6 Remove all the thermoformed foam packaging from the cardboard box, pulling it by the strap. Make sure to hold the strap firmly fastened and closed.
- 7. Turn over all the thermoformed foam packaging on a stable surface, with the base facing upward.
- 8. Unscrew and withdraw the 2 fixing screws.
- 9. Gently turn all the thermoformed foam packaging over to position it on its base.
- 10. Release and detach the strap.
- II. Remove the thermoformed foam packaging on the front and rear surfaces, sliding them gently aside.
- 12. Remove the Atmos clock from its base packaging and place it on a table.
- 13. Follow the start-up instructions.

#### Important : for any dispatch, use the complete original packaging. If necessary, ask your dealer to replace the necessary parts.

Diagram I



Diagram 2



# Atmos Classique phases de lune and Atmos Classique phases de lune Transparente

Operating precautions

The balance of the Atmos Classique Phases de lune clock, which is suspended from an extremely thin wire, absolutely must be blocked before any transport, even when it is just moved slightly (see section on Precautions for operation and transport), and to perform adjustments.

Atmos Classique phases de lune

The Atmos Classique phases de lune clock has two balance locking systems :

- The first, accessible under the cabinet, should be used for transport.
- The second, accessible after opening the door, is used when the clock is moved slightly.

Unlock the first locking system by completely loosening the screw located under the cabinet.

The second system, consisting of a blocking lever, should be released only after setting the time (see section on Setting the time).



Atmos Classique phases de lune Transparente

The Atmos Classique phases de lune Transparente clock has a balance blocking system, which can be accessed after opening the door and which must be released only after setting the time (see section on Setting the time).

To start the Atmos Classique phases de lune clock, carry out the following operations.

#### Ensuring the clock is level

For your Atmos Classique phases de lune clock to work cor rectly, its base should be perfectly horizontal.

To enable you to stabilise it suitably, it has a spirit level. To ensure correct operation, the bubble must be perfectly centred in the level.

Atmos Classique phases de lune

The Atmos Classique phases de lune clock rests on three feet, one of which is fixed (at the rear) while the other two are adjustable. When you have placed your clock in its final location, you can easily perform level setting by screwing up or unscrewing the two mobile feet.





Spirit level

Height-adjustable feet



Atmos Classique phases de lune Transparente

The Atmos Classique Phases de lune Transparente clock rests on three height-adjustable feet. Level adjustment can be carried out under each of the feet. When you have placed your clock in its final location, you can easily perform level setting by unscrewing each of the feet.



#### Opening the cabinet

#### Atmos Classique phases de lune

The Atmos Classique Phases de lune clock has a glazed door at the front, which can be released by pressing the door button downward and then pulling it slightly toward you. You can remove it by raising it.

#### Atmos Classique phases de lune Transparente

The Atmos Classique Phases de lune Transparente clock has a glazed door at the front, which can be released by pulling the door button, and is then removed completely when you pull it towards you.

Do not slant the door too much when it is still in the groove of the base, so as to avoid damaging the bottom of the glass pane.



#### Setting the time

To set your Atmos Classique Phases de lune clock to the right time (and also for the summer/winter time change), move the minute hand forward with one finger.

# Note : never turn the minute hand in the opposite direction and never touch the hour hand.

Never perform time setting without first making sure that the balance is blocked.



Atmos Classique phases de lune



Atmos Classique phases de l'une Transparente

#### Starting the clock

Unblock the balance using the blocking lever located at the front of the clock, under the dial. Lower the lever by pressing slightly while moving it to the left. Make sure you do not touch the balance during this operation. Thus released, the balance begins to oscillate slowly.



If the balance remains motionless :

- Check the level setting.
- Delicately rotate the balance half a turn by hand, then leave it to resume its own movement by itself. When the balance is oscillating normally, put the door back in place.

Note : never move an Atmos clock without first blocking the balance.

#### Adjusting the gain and loss

Your Atmos Classique Phases de lune clock has been set in the Jaeger-LeCoultre watchmaking factory located at an altitude of 1000 metres in the heart of the Swiss Jura. If, after about one month's operation (one month is still needed to ensure that the balance is completely stabilised), you observe that it is gaining or losing time slightly, you can correct this using the adjusting lever which is located at the top of the movement.



The table below shows you by how many graduations the adjusting lever must be moved depending on the number of minutes' time loss or gain on your clock. In accordance with the information in the table, to correct for time gain, move the lever to the left towards the «-» sign; to correct for time loss, move the lever to the right towards the «+» sign.

6.Ö.D	Gain or loss observed after 1 month		
G (1)	Minutes per month	Correction by moving the adjusting lever by	
Gain	+ 2,5 min	1/2	graduation(s) to the left
	+ 5 min	I.	
	+ 7,5 min	1,5	
	+ 10 min	2	
	+ 15 min	3	
	+ 20 min	4	
Loss	- 2,5 min	1/2	graduation(s) to the right
	- 5 min	I	
	- 7,5 min	1,5	
	- 10 min	2	
	- 15 min	3	
	- 20 min	4	

Once you have started up your Atmos Classique phases de lune clock, avoid touching it. It will operate without any intervention by you, because the Atmos clock simply lives air:

#### Setting the month and moon phase

Before starting your Atmos Phases de lune clock, you must first set the months and then the moon phase.

To set the months, push in the small tool provided with the Atmos Phases de lune clock, on side A in the aperture located in the centre of the disc indicating the lunations and turn it (in either direction) up to the desired month, knowing that the month appears centred in its aperture on the  $15^{\rm th}$  of the month. The position of the month disc is therefore set approximately depending on whether setting is performed at the start, middle or end of the month. You will have to wait until the start of the month for a precise setting.

You can nevertheless perform time setting (see section on Setting the time).

Once this has been done, you can set the moon phase. To do this, consult a lunar calendar and choose the date of a full moon to fine-tune the setting. Insert the adjustment tool on side B in the centre of the moon disc and turn in clockwise direction until the moon is perfectly centred.

In the event of fine-tuning of the month setting, a further moon setting will also have to be performed.



# International Guarantee

#### This International Guarantee applies to Jaeger-LeCoultre products sold or presented for guarantee repairs in all countries except the United States of America and Canada (for those two countries, see the Limited Warranty).

The manufacturer's International Guarantee applies only to Jaeger-LeCoultre products purchased from authorised Jaeger-LeCoultre retailers. In addition, all maintenance and repair works must be carried out either by an authorised Jaeger-LeCoultre retailer or by an official Jaeger-LeCoultre Service Centre. If these conditions are not met, the manufacturer's guarantee does not apply. For a list of authorised Jaeger-LeCoultre retailers worldwide, please contact Jaeger-LeCoultre or its Distributors.

## The Jaeger-LeCoultre Atmos clocks

### The terms and conditions of the Jaeger-LeCoultre International Guarantee

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Your Jaeger-LeCoultre Atmos clock is guaranteed against all manufacturing defects for three years from the date of purchase, subject to the following conditions.

Any part found by our technical services to be defective as a result of a manufacturing defect will be, at the sole discretion of Jaeger-LeCoultre, repaired or replaced free of charge.

The Jaeger-LeCoultre International Guarantee is valid only if the guarantee certificate enclosed with this booklet has been duly completed, dated, stamped and signed by the authorised Jaeger-LeCoultre retailer who sold your Atmos clock.

This international guarantee does not cover defects resulting from accidents, mishandling, incorrect or abusive use (for example, knocks, dents, crushing, excessive temperatures, powerful magnetic fields), unauthorised alteration or repair or the consequences of normal wear and ageing.

The Atmos clock operates without batteries, electricity or winding. It is accurate and silent but very sensitive, as it requires only an extremely low amount of energy to operate.

To ensure that your Atmos clock functions properly, you must place it on an absolutely stable horizontal surface (chest of drawers, console table, mantelpiece, etc). We advise you to keep your Atmos clock away from any magnetic fields (computer, television, etc), as these may interfere with its functioning.

The Atmos clock must not be moved once it has been started. Should you have to transport your Atmos clock, do not forget to lock the balance beforehand (this operation must be carried out just as the balance stops and before it starts moving again in the opposite direction).

In order to use your Atmos clock correctly, please refer carefully to the attached instructions, in particular before starting the clock or transporting it.

#### As a consumer, you may have legal rights under applicable national legislation governing the sale of consumer goods; those rights are not affected by this guarantee.

Customer service at Jaeger-LeCoultre

The characteristic feature of the Atmos clock is its long operating life. It functions with virtually no wear and requires no particular maintenance or lubrication. It may, however, need cleaning, because of air pollution. Should your Atmos clock need servicing or repairs, please send it, together with its guarantee certificate, to the authorised Jaeger-LeCoultre retailer who sold it to you.

Alternatively, you may send it to one of the official Jaeger-LeCoultre Service Centres listed at the end of this booklet, or to any authorised Jaeger-LeCoultre retailer of which a list is available on the «www.jaeger-lecoultre.com» website.

Our official Service Centres employ watchmakers trained at the Jaeger-LeCoultre Manufacture and possess the tools and parts necessary to repair and maintain all Jaeger-LeCoultre watches and clocks.

In certain cases, especially for operations requiring special tools and parts, the Service Centre will send your Atmos clock to the Jaeger-LeCoultre Manufacture in Switzerland to have the necessary work carried out.

In any case or if you live in a country which is not indicated in our lists, please do not hesitate to contact directly Manufacture Jaeger-LeCoultre, Switzerland, Rue de la Golisse 8, 1347 Le Sentier, telephone +41 21 845 02 02, fax +41 21 845 05 50, which will inform you of the procedure to follow. We also invite you to visit our website «www.jaeger-lecoultre.com» for an updated list of official Jaeger-LeCoultre Service Centres.

We will need to keep your Atmos clock for between 6 and 8 weeks, for servicing or repair. This includes the same 5 week testing and inspection procedure that new Atmos clocks undergo before they are offered for sale.

# Limited Warranty

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In order to use your Atmos clock correctly, please refer carefully to the attached instructions, in particular before starting the clock or transporting it. Except insofar as prohibited by applicable law, this limited warranty shall be the exclusive manufacturer warranty. Neither this limited warranty nor any other warranties, wether express or implied, including, but not limited to, any implied warranty of merchantability or of fitness for any particular purpose, shall extend beyond the period of three years from the date of purchase.

The liability of Jaeger-LeCoultre is limited solely and exclusively to repair or replacement under the terms and conditions stated herein. Jaeger-LeCoultre shall not be liable, by virtue of this limited warranty or otherwise, for any loss or damage arising out of the use of or inability to use this Atmos clock nor for any incidental or consequential damages relating in any way to this clock. Some States, Provinces and Territories do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages so the above limitations or exclusions may not apply to you.

This limited warranty grants you specific legal rights, in addition to which you may have other legal rights which vary from one Country, State, Province or Territory to another.

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