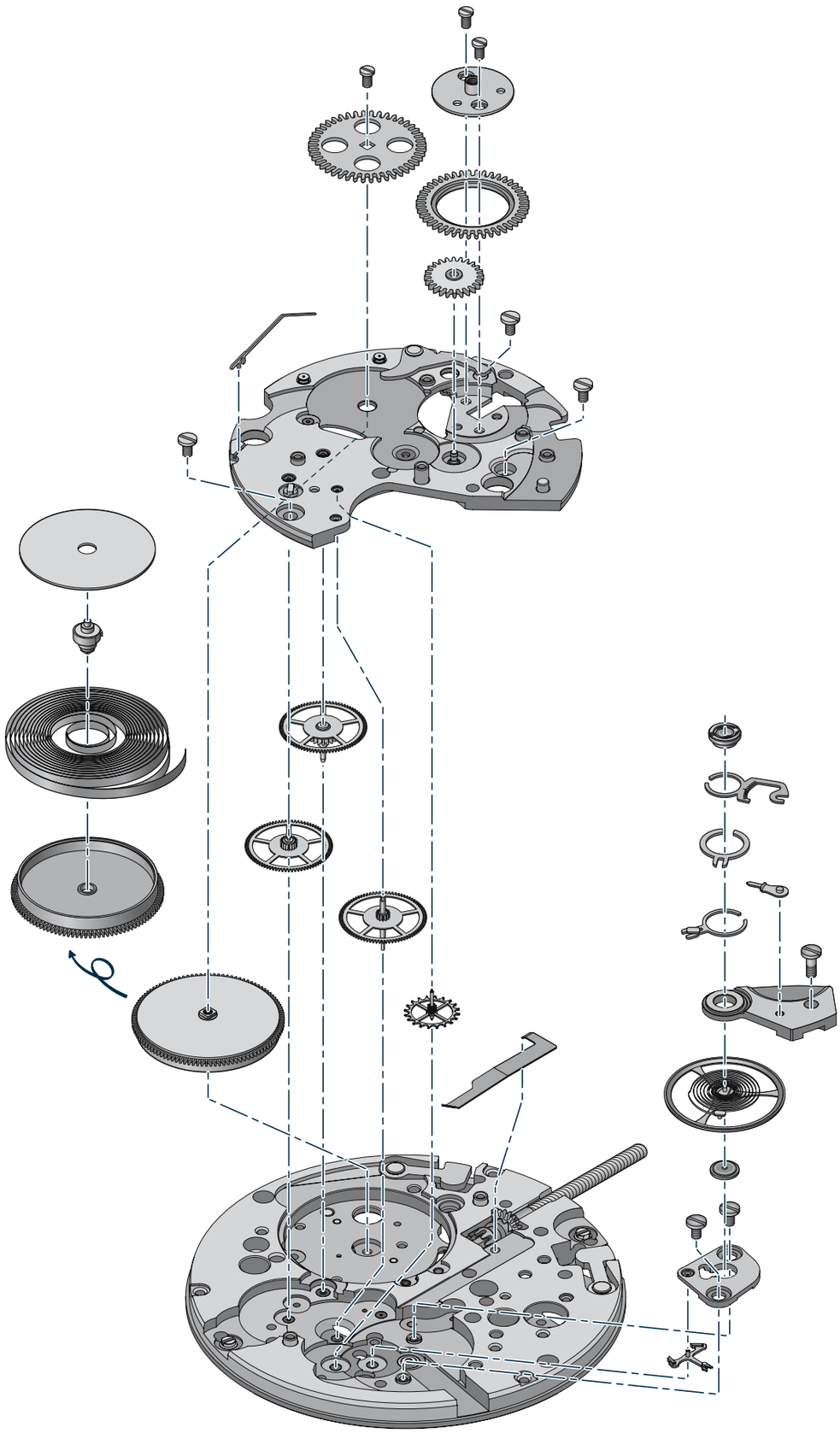
Mechanical Movements



The qualities of mechanical watches and how to preserve them

Why do Longines' watchmakers include watches fitted with a mechanical movement in their collections, sometimes even in preference to more recent technologies?

There's a simple answer: watches fitted with a traditional handwound or selfwinding movement provide all sorts of satisfactions that no other type of timepiece can match.

Of course more accurate time technologies are easy to find, quartz resonators for instance, but nothing beats mechanical watchmaking for pleasure pure and simple. Incorporating countless technical improvements, today's mechanical movements qualify as marvels of inspired ingenuity, born of centuries of fascinating history and the patient workmanship of some of the world's finest craftsmen. You need only observe a movement's intricate mechanism and rhythmically moving parts, the beauty and fineness of its components fashioned in steel as well as in various elaborate alloys and even in gold or platinum, to conclude that you are looking at a shining example of applied intelligence, brought to life by Nature's most versatile tool, the craftsman's hand.

What's more, the handwound or selfwinding mechanical movements fitted in today's Longines timepieces are precise to within a few seconds a week – more than enough for the demands of everyday life.

What is a mechanical movement made of?

Essentially metal – from the most valuable to the most complex. Although the modern watch's earliest ancestor, the steeple clock, was made only of iron, today's wristwatches may contain over a dozen metals, including alloys, spread over hundreds of parts and components.

Less than a millimeter thick for the most part, made in an incredible variety of shapes and sizes, some even finer than a human hair, the parts that make up a watch movement are assembled and adjusted, often simply by friction, with extraordinary skill and painstaking precision. Nevertheless, the more compact the movement and the smaller its parts, the more it is vulnerable to the hazards of everyday life and its various parts exposed to daily wear and tear.

A long and useful life

Today, a competently designed and well built mechanical watch movement can run smoothly and well for decades on end, assuming of course that it is treated with care and provided with regular maintenance. It should be remembered that on the wrist, the movement will be regularly exposed to such things as the negative effects of gravity and of magnetic fields, the repeated expansion and contraction of metal parts caused by sharp variations in temperature, much jarring and occasional hard knocks, the presence of moisture or fine particles (talc, for example) inside the case, and of course the slow but steady deterioration of the movement's special lubricants, potentially causing friction and jamming.

The selfwinding mechanism

By the late 18th century, a few exceptionally inventive watchmakers had devised a mechanism that made it possible for a watch movement to wind itself automatically, simply by harnessing the wearer's body movements. This study in miniaturized horological ingenuity was later adapted to the wristwatch. It works as follows: the normal movements of the forearm impel an oscillating weight, also called "rotor", positioned against the movement, to swing around its axis. The weight rewinds a spring which, in every watch of this type, stores the mechanical energy required to keep it running. Automatic winding thus does away with the need to wind the movement manually by the crown every day.

Hand winding if the watch stops

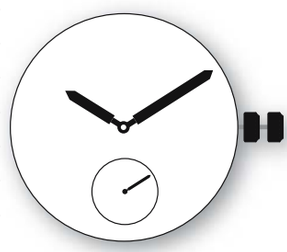
A selfwinding wristwatch normally has a power reserve of over a full day, often some forty hours. But if the watch is not worn for longer than its maximum power reserve, it will stop and will have to be rewound manually before being replaced on the wrist. In such cases, it is best to rotate the crown at least forty times, especially if the watch includes a calendar.

L506

Frequency	21’600 A/h
ø	16½’’’ – 36.60 mm
Height	4.50 mm
Winding	Hand-winding
Power reserve	56 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA 6497
Jewels	17

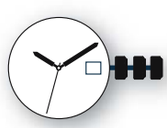
L512

Frequency	21’600 A/h
ø	16½’’’ – 36.60 mm
Height	4.50 mm
Winding	Hand-winding
Power reserve	56 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA 6498/2
Jewels	17



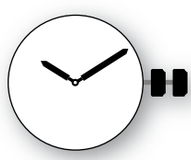
L561

Frequency	28’800 A/h
ø	7¾’’’ – 17.20 mm
Height	4.80 mm
Winding	Automatic
Power reserve	48 hours
Accuracy	–7 +18 sec./day
Base calibre	ETA 2671
Jewels	25



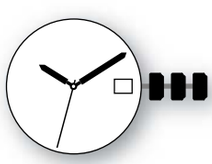
L593

Frequency	28’800 A/h
ø	8¾’’’ – 19.40 mm
Height	3.60 mm
Winding	Automatic
Power reserve	40 hours
Accuracy	–5 +20 sec./day
Base calibre	ETA 2000.1
Jewels	20



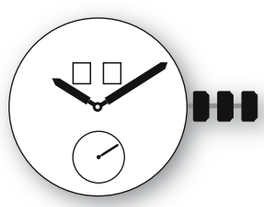
L595

Frequency	28’800 A/h
ø	8¾’’’ – 19.40 mm
Height	3.60 mm
Winding	Automatic
Power reserve	40 hours
Accuracy	–5 +20 sec./day
Base calibre	ETA 2000.1
Jewels	20

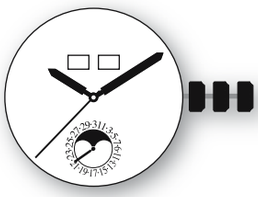


L599

Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	5.35 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	Dubois Dépraz 14500
Jewels	30

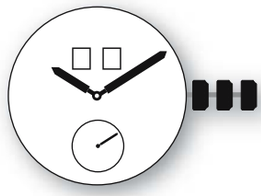


L600



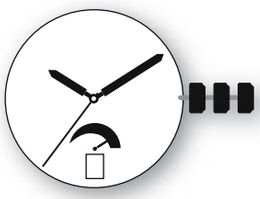
Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	5.35 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	Dubois Dépraz 9310
Jewels	21

L601



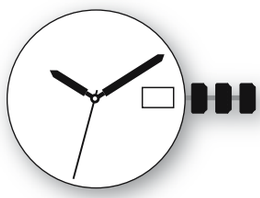
Frequency	28’800 A/h
ø	13¼’’’ – 30 mm
Height	5.35 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	Dubois Dépraz 14000
Jewels	26

L602



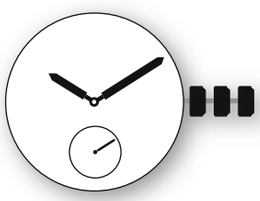
Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	4.95 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2897/5
Jewels	21

L607



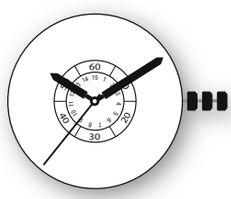
Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	4.85 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2896
Jewels	22

L609



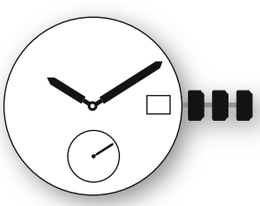
Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	4.50 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA 2895/2
Jewels	27

L614



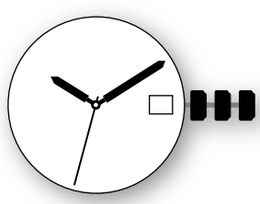
Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	3.75 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2892/A2
Jewels	21

L615



Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	4.50 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA 2895/2
Jewels	27

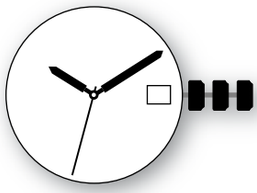
L619



Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	3.75 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2892/A2
Jewels	21

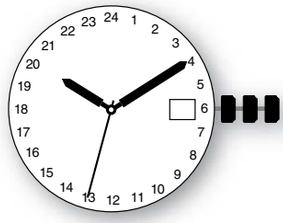
L633

Frequency	28’800 A/h
ø	11½’’’ – 25.60 mm
Height	4.60 mm
Winding	Automatic
Power reserve	38 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2824/2
Jewels	25



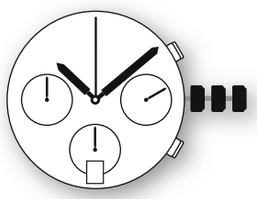
L635

Frequency	28’800 A/h
ø	14¼’’’ – 33 mm
Height	6.55 mm
Winding	Automatic
Power reserve	38 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2824/2
Jewels	33



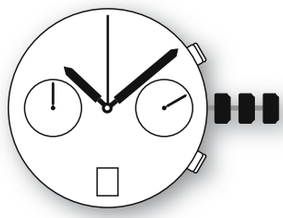
L650

Frequency	28’800 A/h
ø	12½’’’ – 28.60 mm
Height	6.25 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2894/2
Jewels	37



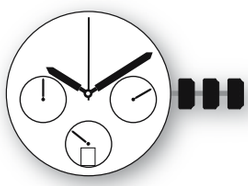
L651

Frequency	28’800 A/h
ø	12½’’’ – 28.60 mm
Height	6.25 mm
Winding	Automatic
Power reserve	42 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2894/1
Jewels	37



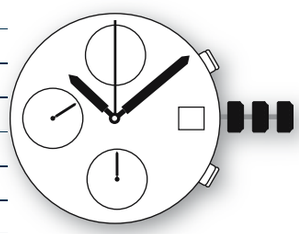
L652

Frequency	28’800 A/h
ø	10½’’’ – 23.90 mm
Height	5.50 mm
Winding	Automatic
Power reserve	37 hours
Accuracy	–6 +14 sec./day
Base calibre	ETA 2094
Jewels	33



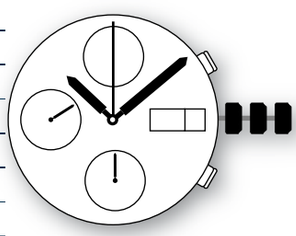
L667

Frequency	28’800 A/h
ø	13¼’’’ – 30.00 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–6 +18 sec./day
Base calibre	Valjoux 7750
Jewels	25



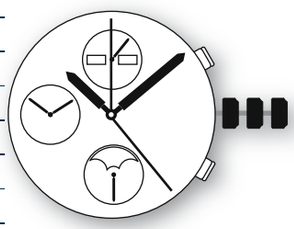
L674

Frequency	28’800 A/h
ø	13¼’’’ – 30.00 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–6 +18 sec./day
Base calibre	Valjoux 7750
Jewels	25



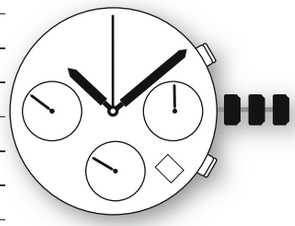
L678

Frequency	28’800 A/h
ø	13¼’’’ – 30 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–6 +18 sec./day
Base calibre	Valjoux 7751
Jewels	25



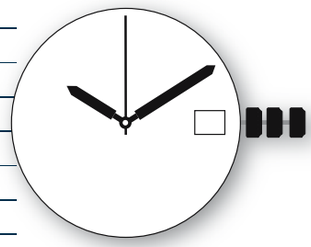
L683

Frequency	28’800 A/h
ø	13¼’’’ – 30 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–6 +18 sec./day
Base calibre	Valjoux 7753
Jewels	27



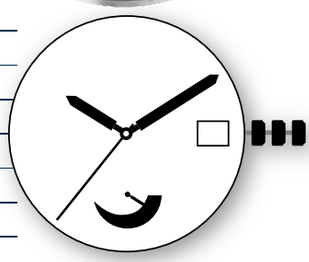
L691

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA A07 111
Jewels	24



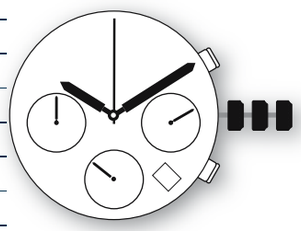
L693

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA A07 161
Jewels	24



L696

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA A07 231
Jewels	25

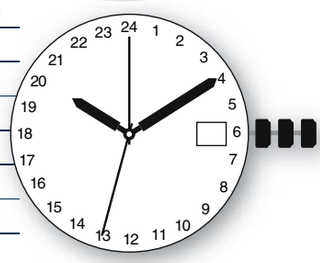


L699

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	–5 +15 sec./day
Base calibre	ETA A07 111
Jewels	24

L704

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	+/– 15 sec./day
Base calibre	ETA A07.171
Jewels	24



L705

Frequency	28’800 A/h
ø	16½’’’ – 36.60 mm
Height	7.90 mm
Winding	Automatic
Power reserve	46 hours
Accuracy	+/– 15 sec./day
Base calibre	ETA A07 231
Jewels	27