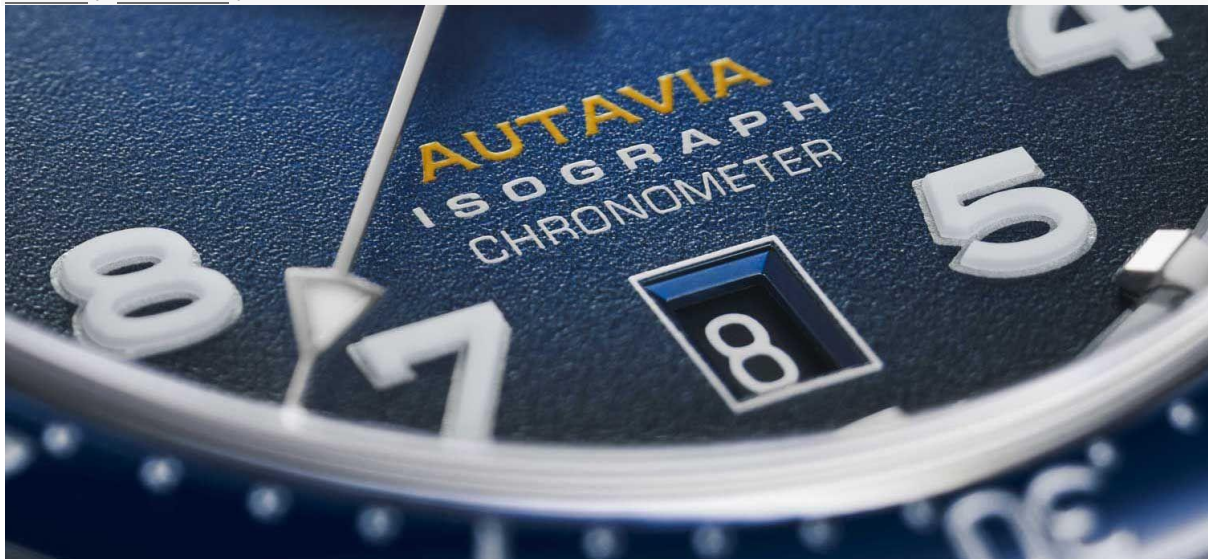


# REVOLUTION

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## The Watch Face: Numerals

TECHNICAL

By [Adrian Hailwood](#)

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Delve into the history of dial design and the elements that make up some of the most famous watch faces of our time. In part 3: numerals.

Numerals are not essential for a watch dial, time may be indicated by hour markers, a single mark at 12, or nothing at all, with only the relative position of the hands as guidance, but given that so many watches carry numerals on their dial, let us delve into the story of their development.

## Numbers from Scratch

The first marks to indicate quantity were tallies, made by scratching or notching wood, bone, stone or some other durable substance. They date back at least 30,000 years but cannot be considered as numerals as each mark has no different meaning to the next, only the total has significance. The first true numerals come from the Sumerians, located

in modern-day Iraq. While their symbols, either archaic or cuneiform have not survived to grace our dials, an important part of their mathematics has – in the form of their sexagesimal number system. Based on the 60, the Sumerian, and later Babylonian form of counting is why we have 60 seconds in a minute, 60 minutes in an hour and 360 degrees in a circle.

1	∩	11	∩ ∩	21	∩ ∩ ∩	31	∩ ∩ ∩ ∩	41	∩ ∩ ∩ ∩ ∩	51	∩ ∩ ∩ ∩ ∩ ∩
2	∩∩	12	∩ ∩∩	22	∩ ∩∩∩	32	∩ ∩∩∩∩	42	∩ ∩∩∩∩ ∩	52	∩ ∩∩∩∩ ∩∩
3	∩∩∩	13	∩ ∩∩∩	23	∩ ∩∩∩∩	33	∩ ∩∩∩∩ ∩	43	∩ ∩∩∩∩ ∩∩	53	∩ ∩∩∩∩ ∩∩∩
4	∩∩∩∩	14	∩ ∩∩∩∩	24	∩ ∩∩∩∩ ∩	34	∩ ∩∩∩∩ ∩∩	44	∩ ∩∩∩∩ ∩∩∩	54	∩ ∩∩∩∩ ∩∩∩∩
5	∩∩∩∩∩	15	∩ ∩∩∩∩∩	25	∩ ∩∩∩∩ ∩∩	35	∩ ∩∩∩∩ ∩∩∩	45	∩ ∩∩∩∩ ∩∩∩∩	55	∩ ∩∩∩∩ ∩∩∩∩∩
6	∩∩∩∩∩∩	16	∩ ∩∩∩∩∩∩	26	∩ ∩∩∩∩ ∩∩∩	36	∩ ∩∩∩∩ ∩∩∩∩	46	∩ ∩∩∩∩ ∩∩∩∩∩	56	∩ ∩∩∩∩ ∩∩∩∩∩∩
7	∩∩∩∩∩∩∩	17	∩ ∩∩∩∩∩∩∩	27	∩ ∩∩∩∩ ∩∩∩∩	37	∩ ∩∩∩∩ ∩∩∩∩∩	47	∩ ∩∩∩∩ ∩∩∩∩∩∩	57	∩ ∩∩∩∩ ∩∩∩∩∩∩∩
8	∩∩∩∩∩∩∩∩	18	∩ ∩∩∩∩∩∩∩∩	28	∩ ∩∩∩∩ ∩∩∩∩∩	38	∩ ∩∩∩∩ ∩∩∩∩∩∩	48	∩ ∩∩∩∩ ∩∩∩∩∩∩∩	58	∩ ∩∩∩∩ ∩∩∩∩∩∩∩∩
9	∩∩∩∩∩∩∩∩∩	19	∩ ∩∩∩∩∩∩∩∩∩	29	∩ ∩∩∩∩ ∩∩∩∩∩∩	39	∩ ∩∩∩∩ ∩∩∩∩∩∩∩	49	∩ ∩∩∩∩ ∩∩∩∩∩∩∩∩	59	∩ ∩∩∩∩ ∩∩∩∩∩∩∩∩∩
10	∩	20	∩∩	30	∩∩∩	40	∩∩∩∩	50	∩∩∩∩∩		

Babylonian numerals... there's a pattern here...

## What have the Romans ever done for us?

The earliest form of numerals found on watch dials is Roman, dating from the around the 9th century BC. There are two theories as to their origin, one is that they are a development of the old tally marks, the other that they are from counting on fingers, hence their grouping into 5s. Despite the difficulty in using them for arithmetic, Roman numerals remained in wide use until the 15th century. Imparting a certain classicism to a dial, Roman numerals are still a popular choice. A well-known oddity concerning their use on dials is the form of the number 4, usually written as IV but most commonly found on watch and clock dials as IIII.



Medium 2018 Cartier Santos in pink gold

Several reasons for this are given and we cannot be sure which is true, some say that IV was an ancient abbreviation for Jove or Jupiter and that clockmakers didn't want to put the most senior God in 4th place. It's hard to see how this would have been limited to just clock dials and why IV wasn't banned altogether. A more sensible suggestion is aesthetic balance, the 4 being compared to the 8 directly across the dial. Most Roman numerals are written with the Vs and Xs made up of a thin and a thick line, as from a chisel pen nib. The Roman 8 has 4 bold lines and one fine one, while a true Roman 4 would have only 2 bold lines and one fine one. Swapping in the IIII balances things nicely. The suggestion that it is stylistic is borne out by the fact that it varies. London's Big Ben

has Roman numerals with equal weight strokes and opts for the classic IV... just don't tell Jupiter.

## Indian Origins

Arabic numerals are the most widely used around the world, even in countries which do not use a conventional alphabet. Their success is largely due to the decimal mathematics that they support but their origin is not Islamic, but Hindu. The source of these numbers, the Brahmi numerals, goes back to around 300 BC but these were not the decimal, positional numbers that we now know, those did not evolve until 400 AD. The invention of zero by Brahmagupta in 628AD was a pivotal development in mathematics and gave the Hindu number system its power and durability. Hindu numbers naturally drifted westwards along the Silk Road, but their adoption was super-charged by the work of scholars such as Al-Khwarizmi and Al-Kindi who spread them throughout the Arab world. The style and formation of the numerals developed into two distinct styles, the Arabic numerals that we know and use today, or 'Western Arabic Numerals' and the ones used in modern Arabic script or 'Eastern Arabic Numerals'.



Eastern Arabic numerals on a clockface

Geographic proximity brought the western style to Medieval Europe along with the scholarly works that explained their use and by the mid-16th century they had replaced Roman numerals in common usage. (The Latin translation of Al-Khwarizmi is the source of the mathematical term algorithm.)

Eastern Arabic numerals, or 'Hindi' numerals as they are sometimes known have made something of a comeback in recent years as watchmakers cater for specific market tastes, most notably the Rolex ref. M228206-0025 platinum Day-Date from 2016. With this watch Rolex is referencing older Day-Date models produced from the late

1950s to the end of the 1970s with first the day in Arabic script, then the date and finally the hour markers too. Their presence on earlier watches is very rare, although the chevron shaped markers found on pocket watches produced for the Turkish (Ottoman) market are, in fact, highly stylised versions of Eastern Arabic numerals.



Rolex ref. 228206

Perhaps the most widely used style of Arabic numerals are, in fact, French. Breguet numerals grace the dials of brands from Patek Philippe to Seiko and, of course, Breguet themselves. Designed around 1790 we have no clue as to their inspiration other than Breguet's own naturally cursive handwriting, as evidenced by his signature. They combine

artistic flair with legibility in way that has appealed to dial designers for well over 200 years.



Breguet numerals on the Breguet Classique Tourbillon Extra-Plat Automatique

## Other Alphabets

There are many more numerals in use around the world than just Arabic and Roman, but rarely do any make it to a watch dial. The reason is two-fold, the historic production of watches has been centred in Western Europe where these two dominate and by the time watchmaking spread to other regions, Arabic numerals had been adopted for general use locally.

Cyrillic numbers were largely abandoned in 18th Russia under the reforms of Peter the Great and while Cyrillics can be found on more modern Russian-made watches, they are far more likely to be letters rather than numbers, spelling out a patriotic message.

Arabic numerals reached both China and Japan in advance of watchmaking although the dials of Bovet's watches, one of the first Swiss brands to target the Chinese market, usually featured Roman numerals. Bovet was one of the few makers to use Chinese characters

as hour markers, but these formed a small portion of their output. In common with Rolex, a number of modern brands have produced dials with Hanzi and Kanji dials, for China and Japan. These tend to be limited editions to celebrate cultural events rather than regular production pieces. Nomos produced a Kanji version of their Tangente for Japan's Cultural Day, and both Bovet and Graham have released Hanzi dial models.



Graham Chronofighter

With the profusion of possibilities when it comes to hour markers, it is surprising that numerals are used as frequently as they are, but numerals are firmly rooted in our cultural psyche and the choice of Roman or Arabic and the font they are rendered in is one of the easiest ways to express the character of the watch and for us to express our character through it.



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