



INTERNATIONAL
INGENIEUR
automatic



THE IWC INGENIEUR

- Dial Variations In Vintage (Cal. 85x) Models -

Version 2.0

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INTRODUCTION

It's been 50 years since IWC first introduced the Ingenieur and IWC's first automatic, antimagnetic watch still inspires collectors to sing its praises and search the far corners of the globe in pursuit of a mint or undiscovered piece. As more collectors come under its spell, the mystique grows.



From left, 852 in Rose Gold, 8531, 8541B with military-style dial, 8541B with applied logo.

For many, the magic is in the dial. The Ingenieur is not about complications like multiple hands, subdials or moonphases. Rather, the simple function of accurately telling time (and on some models the date) in a robust and classic design provides the key to attraction. The design itself is timeless -- classic and sporty all at once. As a recent IWC catalog said about the Ingenieur, "understatement is part of the family tradition." Nevertheless, the authors are both amazed and frustrated at the dial variations among vintage Ingenieurs. Rather than attempt to write a definitive treatise on the subtleties of all known variations -- a topic that offers about as much definition as what constitutes beauty in any creation -- we have chosen to offer a visual catalog of the watch's history and all the variations we have discovered. Although we are by no means "experts," some commentary is provided based on vintage IWC catalogs, previously published information, our own experience as collectors, and, most significantly information gathered from IWC aficionados all over the world.

Two early advertisements for the Ingenieur. The one on the left dates from 1958 and states that the Ingenieur is "Ideal for all professional men who require a watch which is fully reliable, accurate and trouble free under all conditions."



A word of caution. It is often difficult (if not impossible) to identify any Ingenieur dial as "original." IWC's extensive records during this time did not include the type of dial affixed to a particular watch. Also, it was not an uncommon practice to replace a dial during servicing. Mostly this work was done in the factory, but with the proliferation of IWC parts, any qualified watchmaker could switch dials or date wheels. Accordingly, the dials shown in the following selection may include dials not originally on the watch when it first left Schaffhausen. Furthermore, with certain dial types presently commanding a premium over others on the vintage market, an incentive exists to switch dials if a more "desirable" dial can be acquired. Indeed, with vintage Ingenieur prices constantly escalating, dealers occasionally present "unusual" piece - which means do your homework before you fall in love.

The History

The Ingenieur's genesis dates from 1944 when IWC hired a new technical director, Albert Pellaton. He was responsible for the creation of IWC's first automatic watch, the calibre 81 (subseconds at 6) and the calibre 85 (central seconds, flat overcoil) in 1950. The next generation, the calibre 852 (central seconds, Breguet overcoil) was the first automatic movement encased under a soft-iron core with the Ingenieur name. The Ingenieur was viewed by IWC as the automatic and civilian version of the famous Mark XI, a hand-wound

antimagnetic classic whose fame and following grew as a modern pilot's watch. The Ingenieur is not a spectacular or sexy watch nor was its introduction in 1955 widely anticipated. Like the Mark XI, the Ingenieur is about function and the name translates literally to "engineer." However, because it was produced for the civilian market, the Ingenieur was offered in a variety of relatively elegant dial styles, as well as in 18kt and mixed (steel and gold) cases. Today the timeless design of the watch puts it in the "classic" category and is testimony that its appeal has outlasted its long reign as the flagship of the IWC line.



(Click on this cover of this Ingenieur Brochure from 1955/56 to view the entire brochure)



The famous Ingenieur logo of the arrow passing through the name is reminiscent of the Swiss thunderbolt icon that warns of an electrical current's presence. In this case, the thunderbolt was chosen to represent the Ingenieur's anti-magnetic properties, *i.e.* the ability of its special soft iron shield construction to protect the watch against magnetic fields. The logo makes the watch easy to identify from other IWC automatics of the period and gives the watch its *joie de vivre*.

The Ingenieur's desirability among today's collectors is difficult to explain, but its status as one of the earliest "tool" watches, combined with its rarity, technically advanced movement, and timeless design, make the Ingenieur something truly unique. The Ingenieur is also quite large for a vintage watch (36.5-37.2mm for pre-Jumbo Ingenieurs) and its heft (due in part to the soft iron casing) makes it quite a presence on the wrist.

To learn more about the history and evolution the Ingenieur, the best place to start is with Michael Friedberg's defining piece, [IWC's Ingenieur: An Incomplete History](#).

The Cal. 85x Movements

Much has already been written about the improvements that the Ingenieur passed through as the 85x movement evolved from 852 to 853 and later to the nearly perfect, and much revered, 854 series. The best resource for learning about one of the great automatic movements ever produced is Michael Friedberg's [article on the history of the "Calibre 85 Family](#)," as well as the accompanying [chart](#) on the evolution of the movement. (*Permission to directly link to this article is granted by its copyright owner - The International Watch Company.*)



Cal. 853

Pellaton winding ratcheted system clearly visible.



Cal. 8541B with its soft iron inner casing.

Reference Numbers

Historically, IWC's reference numbering schemes are sometimes difficult to understand, especially since IWC changed the system during first half of the seventies. [This Flyer](#) was evidently printed by IWC to inform dealers of the new reference numbers.

The old, pre1970's numbering system was based on the case type, with the result that more than one model could be represented by the same number if a case was used with different calibres. The subsequent numbering scheme was premised on the movement calibre instead of case type and may have been a consequence IWC's new practice of outsourcing the production of some movements. Since all watches still in production at the time of the change got a new number, the same model may be represented by two reference numbers. In both schemes, mens models with solid gold bracelets got references numbers in the 9000 range. The various Ingenieur models covered in this article had the following reference numbers:

1st generation: ref. 666 and relatives with calibre 852x/853x:

Ref. No	Calibre	Catalogued	Movement	Description
666 A	852	1955-1958/59	automatic	SS with strap or SS bracelet
	853	1958/59-1967		18 kt. gold with strap
666 AD	8521	1955-1958/59	automatic calendar	SS with strap or SS bracelet
	8531	1958/59-1967		18 kt. gold with strap
766 A	852	1955-1958/59	automatic	14 kt. gold with SS back
	853	1958/59-1967		
766 AD	8521	1955-1958/59	automatic calendar	14 kt. gold with SS back
	8531	1958/59-1967		
9033 AD	8531	ca. 1963-1967	automatic calendar	18 kt. gold with gold bracelet
9386 A	853	around 1960	automatic	18 kt. gold with gold bracelet
9386 AD	8531	around 1960	automatic calendar	18 kt. gold with gold bracelet

2nd generation: ref. 866 and relatives with calibre 854x:

Ref. No	New Scheme	Calibre	Catalogued	Movement	Description
866 A	1908	854	1967-1970	automatic	SS with strap or SS bracelet
		854B ?	1970-1976		18 kt. gold with strap
866 AD	1808	8541	1967-1970	automatic calendar	SS with strap or SS bracelet
		8541B	1970-1976		18 kt. gold with strap
9120 A	N/A	854	1967-1969	automatic	18 kt. gold with gold bracelet
9120 AD	N/A	8541	1967-1969	automatic calendar	18 kt. gold with gold bracelet

3rd generation: Ingenieur "Jumbo" SL with cal. 854x ES or quartz movement:

Ref. No	Calibre	Catalogued	Movement	Description
1832	8541ES	1976-1982/83	automatic calendar	SS with SS bracelet
				Mixte with mixte bracelet
3003	2405	1977-1979/80	quartz calendar	SS with SS bracelet
				Mixte with mixte bracelet
3303	2250	1980-1984/85	quartz calendar	SS with SS bracelet
				Mixte with mixte bracelet
9232	8541ES	1977-1982/83	automatic calendar	18 kt. YG with YG bracelet
9503	2405	1977-1979	quartz calendar	18 kt. YG with YG bracelet
9701	2250	1980-1983/84	quartz calendar	18 kt. YG with YG bracelet
9720	2250	1980-1985	quartz calendar	18 kt. YG with YG bracelet and diamonds

For a list of all Ingenieur models (including later generations) see [this web page](#).

Footnote: Just before the mid-1960s, when the cal. 853x was in use, IWC attempted to implement a referencing scheme with extended numbers (five or six digits). In brief, this scheme was the same as the traditional one but extended the numbers by a digit at the beginning and end. The new last digit signified whether the model had a date or not (with a "1" replacing the AD and "2" replacing A), and the first digit stood for the case material and – again – the movement type as shown below:

- gold case with leather strap: "2" (non-date, cal. 853), "3" (date, cal. 8531)
- steel case with leather strap or steel bracelet: "5" (non-date, cal. 853), "6" (date, cal. 8531)
- gold case with steel back: "7" (non-date, cal. 853), "8" (date, cal. 8531)
- gold case with gold bracelet: "9"

Thus a ref. 666 A with steel case became a 56662, while a ref. 9386AD turned into a 993861. See these catalog pages [here](#) and [here](#). Needless to say, the new scheme was difficult to read and understand and IWC gave up this numbering scheme by, at the latest, 1966. As previously discussed, another referencing scheme was implemented around 1970/71.

1955-1958: Cal. 852/8521

Most original dials in the c.852x series have single hour "slashes" in the Calatrava style with luminous dots. In fact, these hour markers are the classic style for both the 852x and 853x series. The most common dial colors were silver or white (with a milky, silverish tint). Black dials were also used and are not uncommon. Most Ingenieurs with the "classic" style have a double slash at 12, which sometimes had a space between them (see catalog picture below) and sometimes not. There were also 852 Ingenieurs with Arabic numerals and those with "pie pan" dials (that is, with the center raised above the outer chapter of the dial).

Most known original hands were dauphine-style (triangular) filled with tritium. It is possible that the earliest models had radium treated dials as explained in the [Ingenieur brochure from 1955/56](#). Some early models may also have had baton hands as evidenced by recent IWC catalogs (right). Some models were equipped with indices (i.e., hour markers) in white or yellow gold. According to the catalogues, all models except the non-date versions in stainless steel (ref. 666 A) or in mixte (ref. 766 A) received gold indices.



An early Ingenieur as depicted in recent IWC catalogs.

Another distinguishing characteristic of the 852x and 853x's Ingenieurs is their watch cases carried their 7-digit case number engraved between the 6 o'clock (bottom) lugs. The c.8541 series did not have this feature and instead had their case numbers inscribed either on the inside or outside of the 12-sided screwbacks.



Catalog Page from 1955



Catalog Page from 1957

Most cases were produced in stainless steel, although 18kt and mixed versions (14kt with stainless steel back) were also available. The 18kt versions were primarily yellow-gold, although pink and white gold examples were produced.

All regular production dials of the Ingenieur carried the logotype of "International Watch Co" in script with Schaffhausen in a slanted block type underneath. Some examples of the 853x models also include either an applied or printed "IWC" logo above this script. If these dials are not the result of a later replacement, they might indicate a transition to the 2nd Ingenieur generation. Depending on who created the dial, there are other very subtle differences among Ingenieur dials that are visible when comparing pieces side-by-side. For example the lettering and spacing of SWISS (and later T-SWISS-T) at the bottom of the dial. These more subtle variations are

presumably the consequence of the fact that IWC's dials and hands were produced at different times by different suppliers in relatively small lots.



No space between the double slash at 12.



An early Ingenieur from 1955 with a space between the double slash markers.



Pie-pan dial.



C. 8521 with Arabic numerals at 12 and 6, like that pictured on the catalog page above. Stainless steel case with applied gold markers.



Arrowheads hour markers with tritium dots enclosed in the wings and Arabics on the corners of this 8521. Minute chapter is embedded dots. Tritium filled dauphine hands



Similar to watch at left but with date. Unusual script for IWC since "Schaffhausen" is large and not slanted. [Another view here.](#)



Ref. 766A from 1956, cal 852 with Pie Pan dial, with embedded minute chapter on the edge of the pie pan.



Silver-dialed 852 with pie-pan dial, gold hands and markers. Arabics on the corners, retailed by Tiffany. A very unusual and unique early Ingenieur.



A rare 18kt caliber 852. Gold Ingenieurs are more rare than the sportier stainless steel models. Dauphine hands with tritium inserts. 18kt hour markers and tritium dots. "Schaffhausen" is smaller on this dial.



Very rare 852. ref. 666 with red gold case.



An 18kt gold cal. 8521. No space between the double-dash at 12.



Picture of dial style at left from an IWC catalog.



From a store-front in Zurich. Silver dialed Ingenieur with prolonged, rectangular shaped (narrow) hour markers. This variation is not seen in any of the catalogs. Dial also displays the Türler name. The watch was originally sold to China in 1957.



Unusually thick hour markers on this c. 852

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