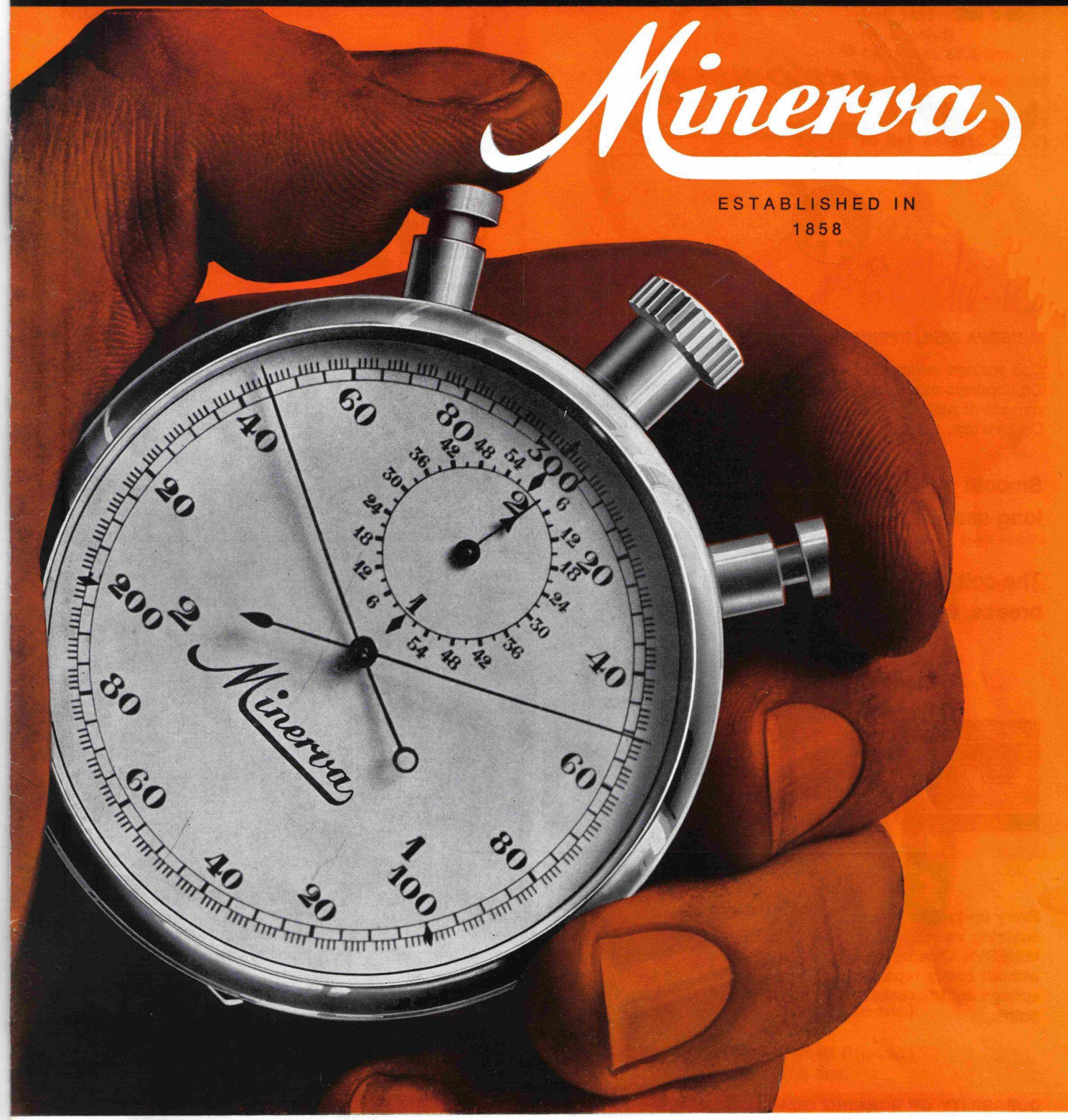
Precision stopwatches and chronographs for time measurements of every kind



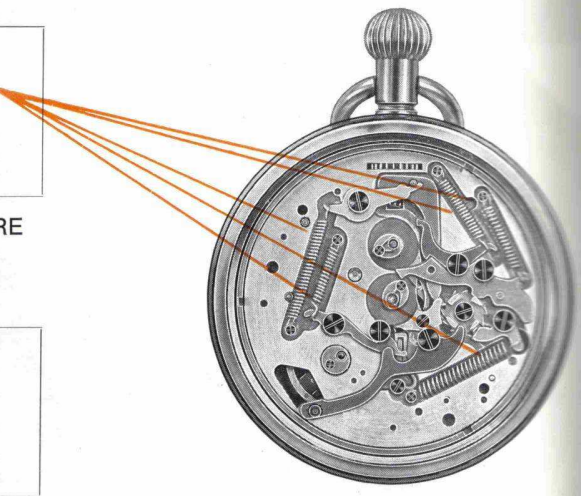
CATALOGUE
No 264

Minerva Sport S. A.
Watch Manufacturing Company
Villeret / Switzerland

Minerva

BEFORE

AFTER



The exclusive MINERVA construction replaces the former «flat» springs by coil springs at all critical «wear» points, as well as in all operating sectors.

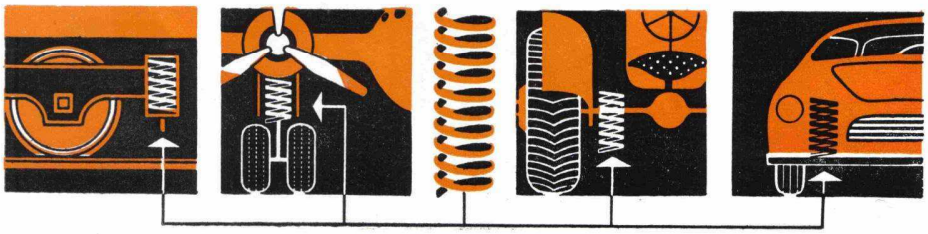
MINERVA COIL SPRINGS (PATENTED)

Coil springs mean durability and longevity.
Coil springs mean less repair work, less replacement of parts.
Coil springs mean :

Smooth running, accurate working, long use, no friction, no wear.

The coil spring mechanism never breaks, never tires.

MINERVA Coil Springs have been tested for eighteen months by means of a weight of 9 ounces ; after the test period they do not show the slightest loss of elasticity, the slightest sign of fatigue. They never break and are never deformed.



Every up-to-date mechanism is now fitted with coil springs shock absorbers, thus ensuring smoother and more durable working. This principle has been adapted to MINERVA Timers ; it guarantees precise adjustment without wear, without friction, without costly repair or regulation work. Only MINERVA has replaced the «flat» springs by unbreakable, shock-absorbing COIL SPRINGS at all critical «wear» points.

Former construction with «flat» springs. In consequence of the stress due to tension and torsion, of the wear and tear produced by functional friction, «flat» springs are in constant danger of breaking.

DURABILITY OF RUNNING GUARANTEED

The new patented MINERVA «Coil Springs» Construction is unbreakable ; it represents the result of twenty years' technical research work. This mechanism guarantees an exceptional safety and durability of utilisation. Among the tests that are being constantly applied in our Works, we may mention that of the timer operated one million times and showing no sign of wear worth mentioning.

REDUCE YOUR REPAIR AND REGULATION COSTS

From now on you may practically forget high-priced repairs and adjustments.

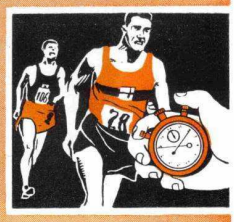
The MINERVA Timer is economic in operation. It has been specially designed to answer in every respect the «heavy duty» requirements in industrial and sporting practice.

This counting mechanism practically excludes every risk of breakage

LEVER MOVEMENT ONLY w/at least 7 JEWELS, ANTIMAGNETIC, NICKEL CHROMED CASE

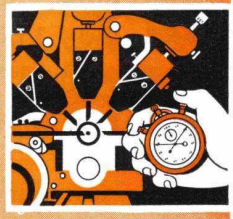
SPORTS

Minerva has many suitable Stopwatch models to provide split second accuracy over short and long periods of operation for swimming, yachting, horse racing, track and every game of sport. They are the choice of famous coaches everywhere.



INDUSTRY

Minerva offers the largest selection of unique, precision Heavy Duty models for every need of industry... split-second timing for Time Studies, Research and for every known requirement... giving every conceivable type of calculation «fit for standardization».

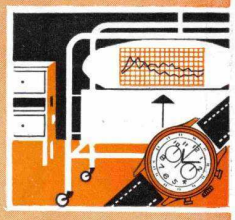


RADIO & T.V.

Minerva features special Filmmeter-T.V. models and other specially designed models for unique application to every radio, television or film-making requirement. Now standard equipment for leading Networks.

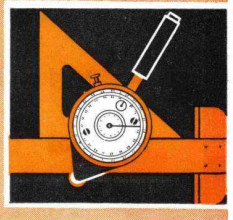
MEDICINE

Minerva is a steady and trustworthy companion of every nurse and doctor, permitting the best diagnosis with the best Chronograph designed especially for medical needs.



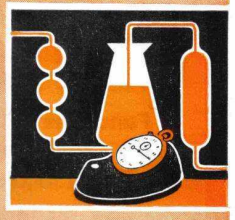
ENGINEERING

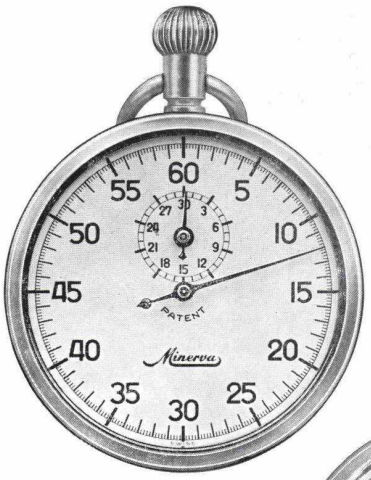
Minerva Curvimeter, the only instrument which can record footage on blueprints up to 2400' and Minerva special timepieces are the respected instruments of every branch of engineering.



RESEARCH

The Rockfeller Institute, among many other brilliant research centers, relies exclusively on Minerva Heavy Duty «coil» Timers and recommend them highly for supreme accuracy and dependability.

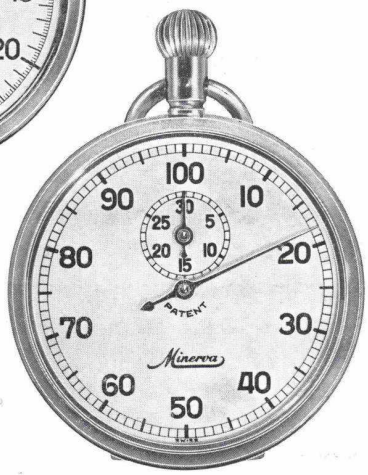




Ref. 1401 Dial 5-60 (1/5-second) Case size 51 mm.

Ref. 1451 Dial 5-60 (1/5-second) Case size 57,5 mm.

Ref. 1471CC Dial 5-60 (1/5-second) Waterproof case (same as Ref. 441871CC, p. 7)



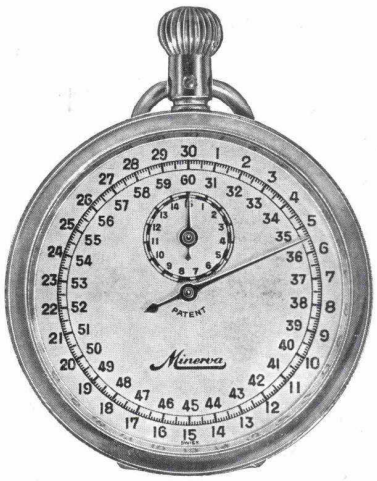
Ref. 1402
Dial 10-100 (decimal)
Case size 51 mm.

Ref. 1452
Dial 10-100 (decimal)
Case size 57,5 mm.

1 turn = 1 minute ; register : 30 minutes.

Functions : Start - Stop - Fly-back to zero by successive depressions of crown.

Use : Efficient model used for sports and industry for every kind of measurements.



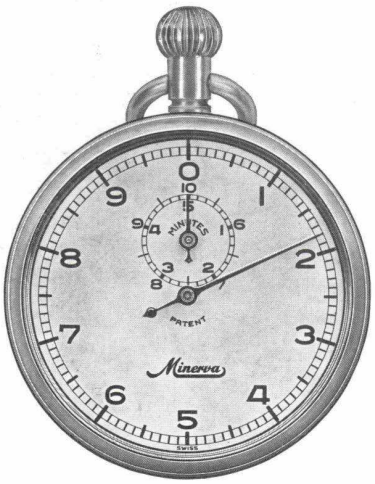
Ref. 1404 Dial 1-30 + 31-60 (1/10-sec.). Case size 51 mm.

Ref. 1454 Dial 1-30 + 31-60 (1/10-sec.). Case size 57,5 mm.

1 turn = 30 seconds ; register : 15 minutes.

Functions : Start - Stop - Fly-back to zero by depressing the crown. The figures 1-30 are black-printed, the figures 31-60 are in red. When the register hand points to a red sector, read the red figures, otherwise the black ones.

Use : Stopwatch destined to track events (close timing) tenth-second and also for industrial time-measurements of various kind.

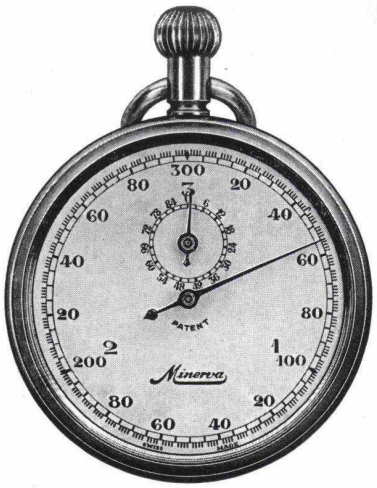


Ref. 1406 Dial 1-10 (1/10-second). Case size 51 mm.
Ref. 1456 Dial 1-10 (1/10-second). Case size 57,5 mm.

1 turn = 10 seconds ; register : 5-10 minutes.

Functions : Start - Stop - Fly-back to zero by successive depressions of crown.

Use : For sports and industry. For master track timer-tenth second and especially for horse and greyhounds races.

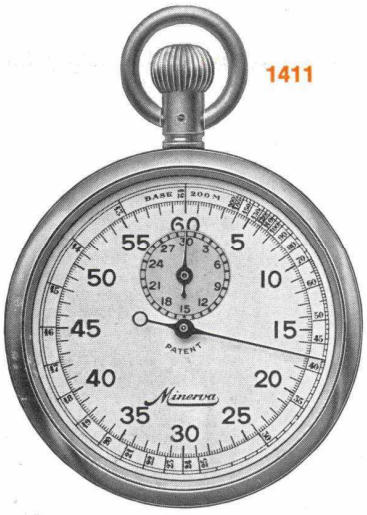


Ref. 1408 Dial 1-3 (1/100 second). Case size 51 mm.
Ref. 1458 Dial 1-3 (1/100 second). Case size 57,5 mm.

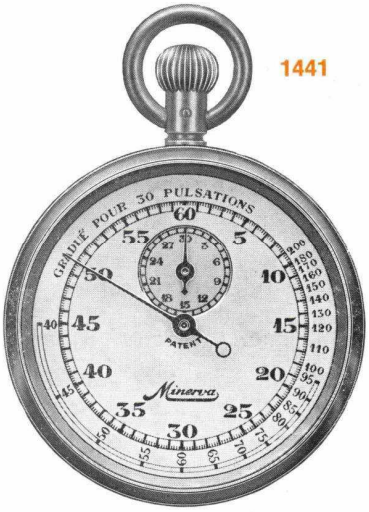
1 turn = 3 seconds ; register : 90 seconds.

Functions : Start - Stop - Fly-back to zero by depressing crown.

Use : Very appreciated for precision timing of short duration.



1411



1441

Ref. 1411 Speedom. dial + 5-60 (1/5 sec.). Case size 51 mm.

1 turn = 60 seconds ; register : 30 minutes.

Functions : Start - Stop - Fly-back to zero by depressing crown.

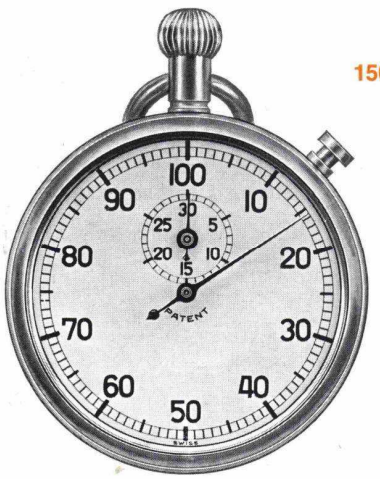
Use : This timer with speedometer (tachometer) is used to measure speeds and times. When the time necessary to cover the standard distance indicated on the dial (200 m.) has been found, the figure on the speedometer scale shows the speed in kilometers per hour.

Ref. 1441 Pulsometer dial + 5-60 (1/5 sec.). Case size 51 mm.

1 turn = 60 seconds ; register : 30 minutes.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : The pulsometer is used by physicians, in hospitals, medical institutions, etc. You measure the time necessary for 30 pulsations and read then on the pulsometer scale the number of pulsations per minute.



1502

Ref. 1501 Dial 5-60 (1/5-second). Case size 51 mm.

Ref. 1502 Dial 10-100 (decimal). Case size 51 mm.

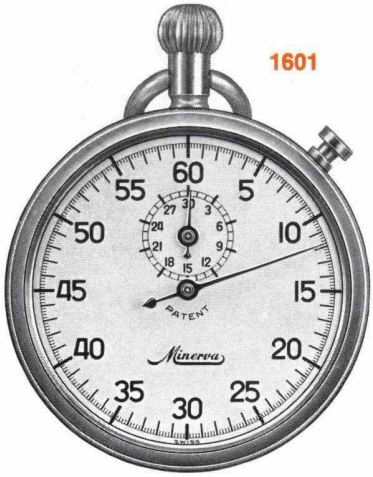
Ref. 1551 Dial 5-60 (1/5-second). Case size 57,5 mm.

Ref. 1552 Dial 10-100 (decimal). Case size 57,5 mm.

1 turn = 1 minute ; register 30 minutes.

Functions : Start - Stop - Start by depressing crown. **Fly-back to zero and simultaneous start** by depressing pin on the side of the case.

Use : For radio and all kind of games such as Football and Basketball. This timer allows the addition of various times following each other.

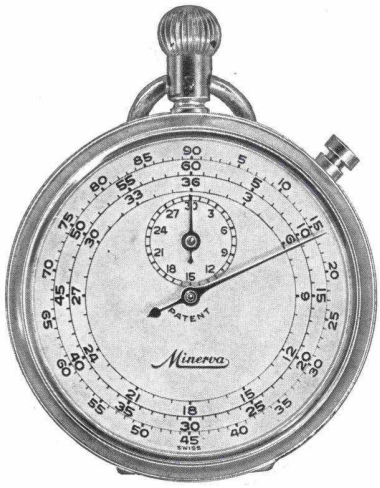


Ref. 1601 **Dial 5-60 (1/5-second).** **Case size 51 mm.**
Ref. 1602 **Dial 10-100 (decimal).** **Case size 51 mm.**
Ref. 1603 **Dial 0,001-0,010 (1/1000 hour).** **Case size 51 mm.**
Ref. 1604 **Dial 1-30 + 31-60 (1/10-sec.).** **Case size 51 mm.**
Ref. 1606 **Dial 1-10 (1/10-second).** **Case size 51 mm.**
Ref. 1608 **Dial 1-3 (1/100-second).** **Case size 51 mm.**

Also available with case size 57,5 mm.

Functions : Start - Stop - Start by crown pressure. Fly-back to zero effected by depression of lateral push-piece, the timer being stopped.

Use : This timer allows **thorougly reliable adding of successive times.**



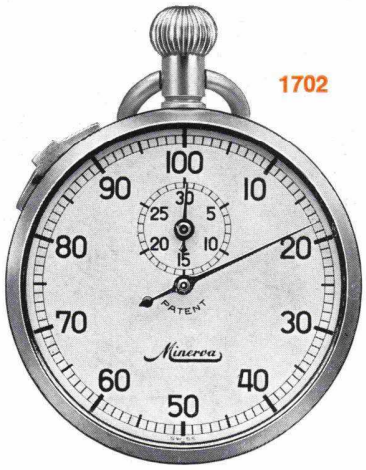
Ref. 1691 **Dial 5-60 + filmmeter scales (1/5-second)**
Case size 51 and 57,5 mm.

1 turn = 1 minute ; register : 30 minutes.

Functions: Start - Stop - Start by successive depressions of crown. Fly-back to zero by depression of lateral push-piece, the timer being stopped.

Use : Added to the division in seconds 5-60, the two divisions 5-90 blue and 3-36 red give the length in feet of 16 or 32 mm films while projected.

Ref. 1691 in case size 57,5 mm has one scale more 5-20 green for super 8 mm films.



Ref. 1701 **Dial 5-60 (1/5-second).**

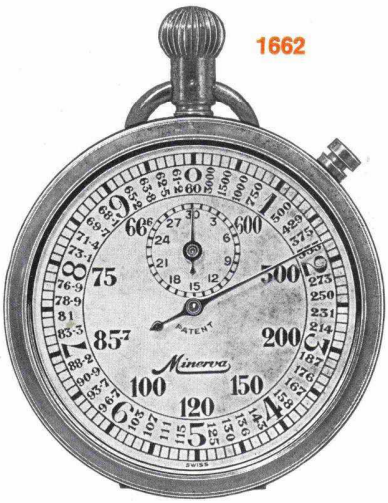
Ref. 1702 **Dial 10-100 (decimal).**
1 turn = 1 minute ; register : 30 min.

Ref. 1703 **Dial 0,001-0,010 (1/1000 hour).**
1 turn = 36 sec. ; register 0,3 hour.

Ref. 1704 **Dial 1-30 + 31-60 (1/10-second).**
1 turn = 30 sec. ; register : 15 min.
Case size 49 mm.

Functions : Start - Stop - Start by moving side slide. Fly-back to zero and simultaneous start by crown pressure.

Use : This stopwatch is used by industrial timers for control of production.

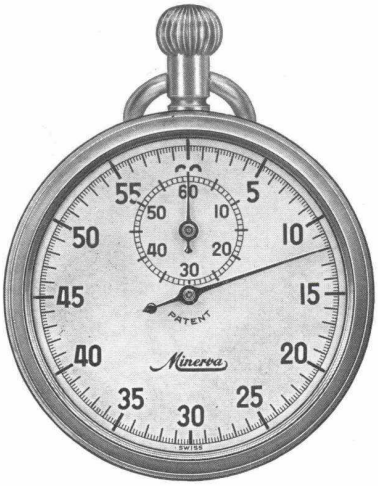


Ref. 1661 **Taylor dial + 5-60 (1/5-sec.).** **Case size 51 mm.**
Ref. 1662 **Taylor dial + 10-100 (decimal).** **Case size 51 mm.**

1 turn = 1 minute ; register : 30 minutes.

Functions : Start - Stop - Start by crown pressure. Fly-back to zero by depression of the lateral push-piece, the timer being stopped.

Use : The Taylor dial is used for controlling hourly production. Having measured the time needed for producting one piece, you may then read on the Taylor scale the corresponding figure, which gives the production per hour for continuous work.



Ref. 4401 **Dial 5-60 (1/5-sec.).** **Case size 51 mm.**
Ref. 4402 **Dial 10-100 (decimal).** **Case size 51 mm.**

1 turn = 1 minute ; **register 60 minutes.**

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : Especially destined for timing of long duration.

Ref. 1703 **Dial 0,001-0,01 (1/1000 hour)** **Case size 49 mm.**

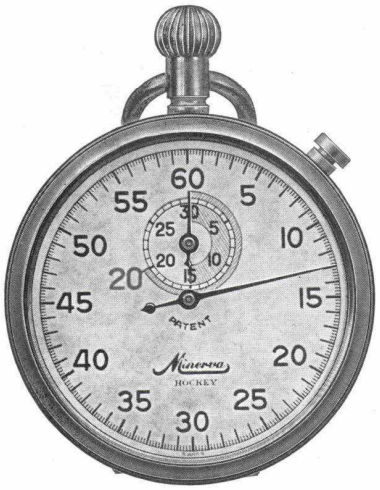
1 turn = 36 seconds ; register = 0,3 hour.

Functions : Start-stop by moving side slide, Fly-back to zero and simultaneous start by crown pressure.

Use : Stopwatch allowing the readings in decimal fractions of an hour.

Example : Calculation of production cost for a piece. The production time for one piece is found to be 0,0145 hour. How much is the cost for 1000 pieces at a salary of 3.60 per hour ?

Answer : 0,0145 x 3.60 x 1000 = 52.20.

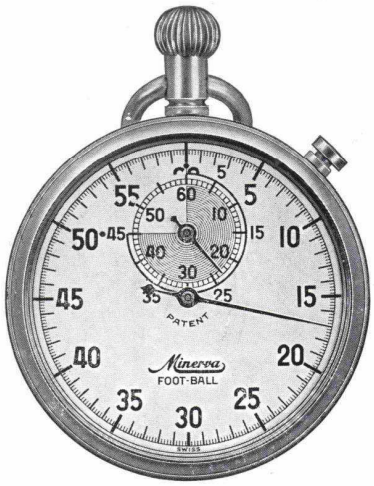


Ref. 1681 **Dial 5-60 (1/5-second).**

Register 30 minutes with sector 15 in blue and sector 20 in red for **Hockey.**

Functions : Start-stop by crown pressure. Fly-back to zero by depressure on side push-piece, the timer being stopped.

Use: Stopwatch for sport, especially for **Hockey**



Ref. 441601 **Dial 5-60 (1/5-second).** **Case size 51 mm.**

1 turn = 1 minute ; **register : 60 min. with red 45 minutes sector.**

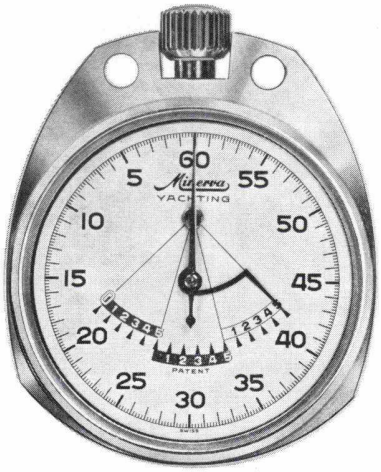
Functions : Start - Stop - Start by crown pressure. Fly-back to zero by depression of the lateral push-piece, the stopwatch being first stopped.

Use : For sports performances in general and especially for **football.**

Ref. 20732 **Wrist chronograph with 45 minutes register**

Lever movement 17 jewels incabloc, waterproof, stainless steel case.

The chronograph with 45 minutes register is especially appreciated for the timing of football matches.



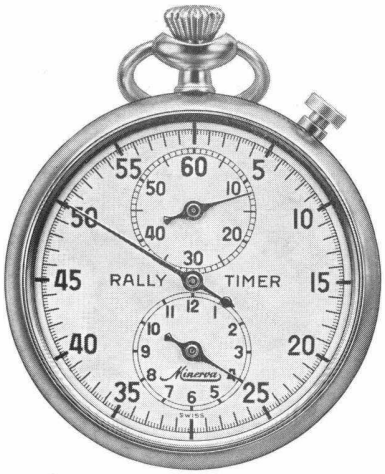
Ref. 441871CC **Dial 60-5, inv. num. (1/5-second). WATERPROOF case size 51 mm.**
1 turn = 1 minute ; **register 3 x 5 minutes.**

Ref. 441801 **Dial 60-5, inv. num. (1/5-second). Case size 51 mm.**
1 turn = 1 minute ; **register 3 x 5 minutes.**

Ref. 1801 **Dial 60-5, inv. num. (1/5-second). Case size 51 mm.**
1 turn = 1 minute ; register 5 minutes.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : These stopwatches are excellent for **Yachting** and timing closing minutes of play for basketball etc.
Also available with Rubber protection.

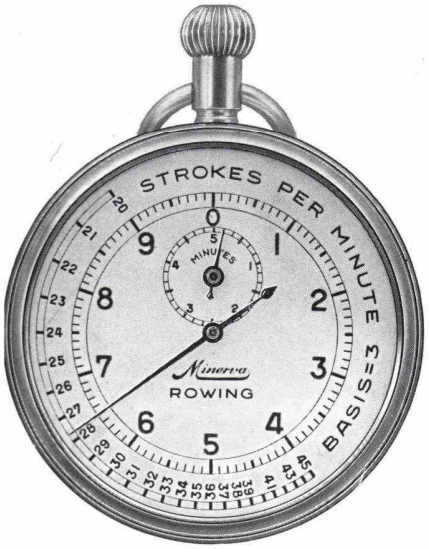


Ref. 5501 **Dial 5-60 (1/5-second).** **Case size 51 mm.**
Ref. 5502 **Dial 10-100 (decimal).** **Case size 51 mm.**

1 turn of the sweepsecond hand = 1 minute
1 turn of the minute register = 60 minutes
1 turn of the hour register = 12 hours

Functions : Start - Stop - Start by crown pressure. Fly-back to zero by depression of pin on side of case, the timer being stopped.

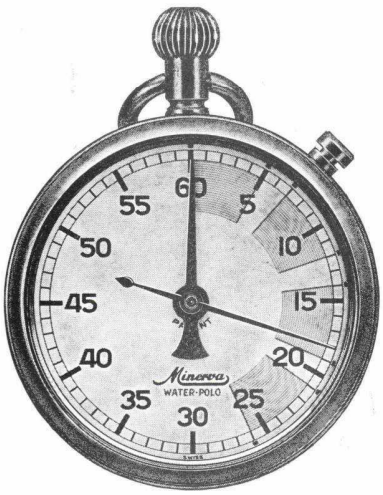
Use : This stopwatch allows the safe adding of successive times up to 12 hours.
For Auto-rallies very appreciated.



Ref. 5356 **Dial 1-10 (1/10-second).** **Case size 57,5 mm.**
1 turn = 10 seconds ; register = 5 minutes.

Functions : Stop - Fly-back to zero and immediate restart

Use : This stopwatch is especially designed for **Rowing,** but is also a useful 1/10-th second recorder for other sports. The automatic fly-back to zero and immediate restart after reading the number of rowing strokes allows the timing of as many as three crews within 18 seconds or over a distance of approximately 100 meters. The dial has a range of 20 to 45 strokes per minute and readings are made on a basis of 3 strokes.

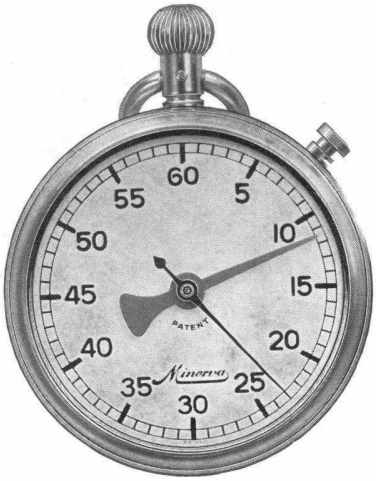


Ref. 541601 WP **Dial 5-60 (1/5-second). Case size 51 mm.**

1 turn = 1 minute ; center register = 60 minutes.
Red minute hand ; 4 sectors each of 5 minutes in red.

Functions : As Ref. 541601 (see next page).

Use : Stopwatch for sport, especially for **Water-Polo.**



Ref. 541601 **Dial 5-60 (1/5-sec.).** **Case size 51 mm.**
Ref. 541651 **Dial 5-60 (1/5-sec.).** **Case size 57,5 mm.**

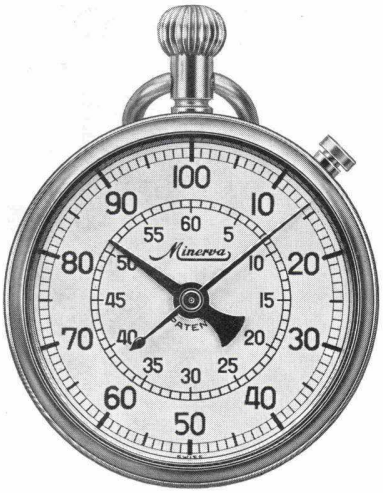
1 turn = 1 minute ; **center register for 60 minutes.**

Functions : Start - Stop - Start by crown pressure. Fly-back to zero by depressing pin on the side of case, timer being stopped.

Use : Excellent for sport timing, for timing program segments etc. The 60' register placed in the center of dial gives a greater visibility, even at distance, allowing an easier reading of the time.

Ref. 5401 **Dial 5-60 (1/5-second).** **Case size 51 mm.**
Ref. 5402 **Dial 10-100 (decimal).** **Case size 51 mm.**

Similar to Ref. 541601-541602, but Start - Stop - Fly-back to zero by successive depressions of crown.

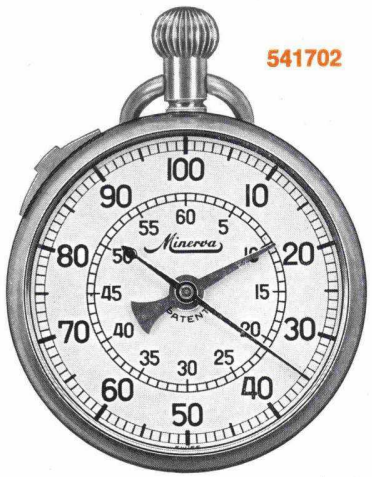


Ref. 541602 **Dial 10-100 (decimal)** **Case size 51 mm.**

Center minutes register 5-60 and hand in red.

Functions : as Ref. 541601.

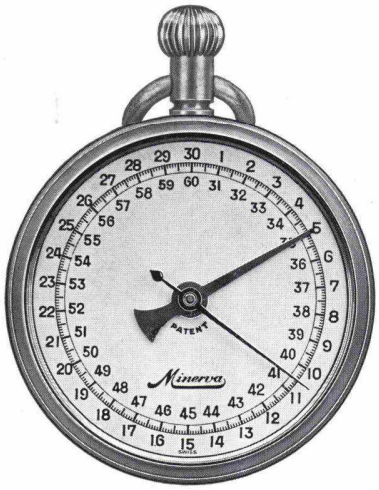
Use : Especially for industry and scientifical purposes.



541702

Ref. 541701 **Dial 5-60 (1/5-second).** **Case size 49 mm.**
Ref. 541702 **Dial 10-100 (decimal).** **Case size 49 mm.**

Same stopwatch as Ref. 541601-541602, but with fly-back to zero and simultaneous start by crown pressure ; Start and stop by moving the side slide.



Ref. 5404 **Dial 1-30 + 31-60 (1/10 S.)** **Case size 51 mm.**
Ref. 5454 **Dial 1-30 + 31-60 (1/10 S.)** **Case size 57,5 mm.**

1 turn = 30 seconds ; register = 30 minutes.
Dial in 2 colours. Minutes hand red.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : Excellent for sport timing, for timing program segments etc. The 30' register placed in the center of dial gives a greater visibility, even at distance, allowing an easier reading of the time.

Ref. 5701 **Dial 5-60 (1/5 second)**
Ref. 5702 **Dial 10-100 (1/100 minute)**
Ref. 2504 **Dial 1-30 + 31-60 (1/10 second)**

Lever movement 11 jewels, nickel chromium case.

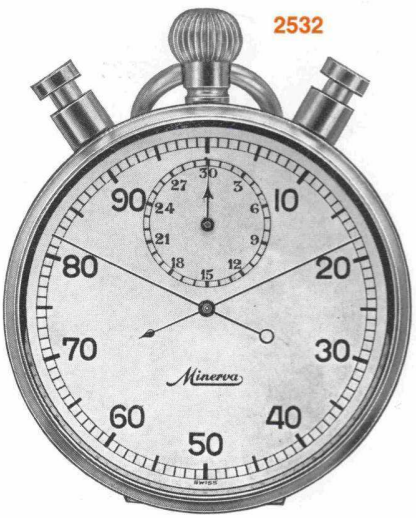
Split-second stopwatch, permanent running.

Functions : Start - Stop - Fly-back to zero by successive depressions of crown. Split second hand stops - catches up to the other hand on depression of side push-piece.

Use : Timing of various and successive times without stopping the sweepsecond hand. Example : Timing of successive arrivals in races.

2531-2

2532



Ref. 2531 **Dial 5-60 (1/5 second)**
Ref. 2532 **Dial 10-100 (1/100 minute)**
Ref. 2531-2 **Dial 5-60 + 10-100 (1/5 second and 1/100 minute)**
Ref. 2534 **Dial 1-30 + 31-60 (1/10 second)**
Ref. 2538 **Dial 1 turn in 3 seconds (1/100 second)**

Lever movement 11 jewels, nickel chromium **case 57,5 mm.**

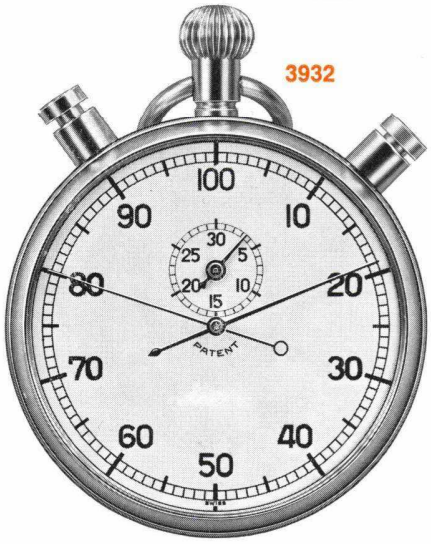
Split-second stopwatch, permanent running.

Functions : Start - Stop - Start by depression of the right push piece. Fly-back to zero by crown pressure. Stopping of the split second hand and running to other hand by successive depressions of push piece at left side of case.

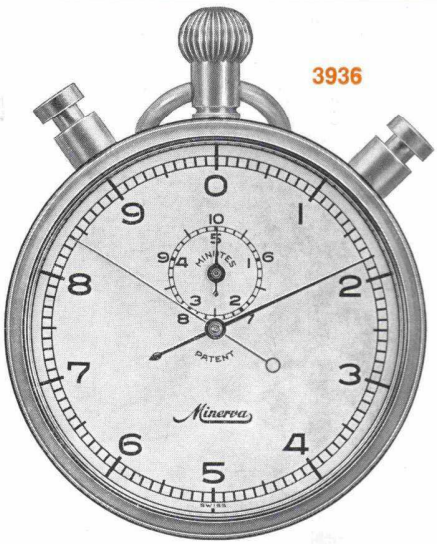
Use : This stopwatch allows adding times or measuring of several times successively, without stopping the sweep-second.
Example : Controlling of successive arrivals in races.

3934

3932



3936



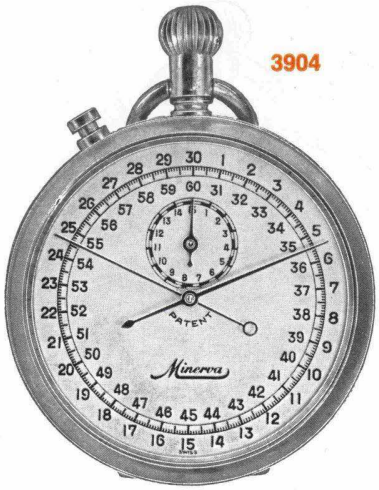
Ref. 3931 **Dial 5-60 (1/5-second).**
Ref. 3932 **Dial 10-100 (decimal).**
Ref. 3931 + 2 **Dial 5-60 + 10-100 (1/5-second and decimal).**
Case size 57,5 mm.

Ref. 3934 **Dial 1-30 + 31-60 (1/10-second).**
Ref. 3936 **Dial 1-10 (1/10-second).**
Ref. 3938 **Dial 1 turn in 3 second (1/100-second).**

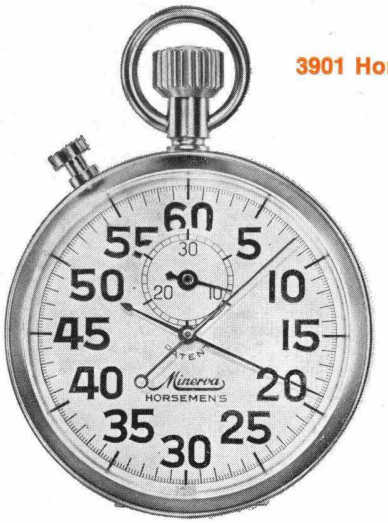
Lever movement 9 jewels, nickel chromium case. **Split-second stopwatch,** no permanent running.

Functions : Start - Stop - Start by depressing the crown. Fly-back to zero by depressing button on right side of case, only when stopped. Button on left side controls split hand.

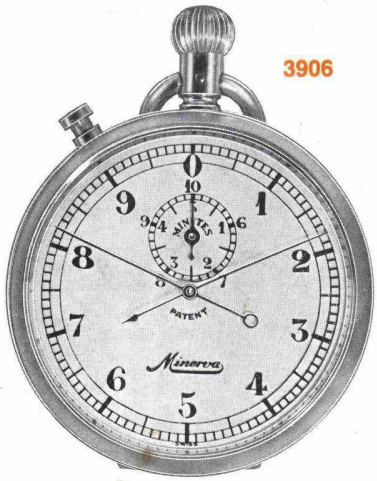
Use : This stopwatch allows the **addition of several times** or the measure of several times in succession without stopping the sweepsecond hand. Example : Timing of successive arrivals in races. Excellent for Sports events and Swimming.



3904



3901 Horsemens



3906

Ref. 3901 **Dial 5-60 (1/5-second).**
Ref. 3902 **Dial 10-100 (decimal).**
Ref. 3904 **Dial 1-30 + 31-60 (1/10-second).**
Ref. 3906 **Dial 1-10 (1/10-second).**
Ref. 3908 **Dial 1 turn in 3 second (1/100-second).**
Ref. 3901 **Horsemen's Dial 5-60 (1/5-second). Especially for horse races.**

Lever movement 9 jewels, nickel chromium case.

Split-second stopwatch, no permanent running.

Functions : Start - Stop - Fly-back to zero by successive depressions of crown. Split second hand stops - catches the other hand when depressing push-piece.

Use : With this timer you can measure several successive times without stopping the sweepsecond hand. Example : Timing of successive arrivals in races.

Ref. 5010 **Chronograph and 30-minute timer (1/5 sec.).**

Lever movement 17 jewels, shock-absorber, antimagnetic.

Dial : white with black figures or black metal with luminous figures and hands. Case : nickel chromium, size 51 mm.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : This chronograph with timer is used for sports events and in the industrial practice for measurements of every kind.

Ref. VH 010 **Chronograph with split second (1/5 second)**

Lever movement 18 jewels, antimagnetic balance-wheel, Breguet hairspring with clamping point, carefully finished «angled» steel parts.

Dial : white enamel, 10-100 decimal **and** 50-60 (1/5 sec.).

Case : nickel chomium, size 51 mm.

Functions : Start - Stop - Fly-back to zero of sweepsecond hand by successive depressing of crown. Split second hand stops - catches up to the other hand on depression of push piece.

Use : This timer-chronograph allows to measure several successive times without stopping the sweepsecond hand. Example: Controlling successive arrivals in a race.

Ref. 20832 Chronograph w/30 or 45 minutes register (1/5 second).

Lever movement 17 jewels, Incabloc, antimagnetic, Breguet hairspring with clamping point.

Dial : Metal with 1/5 divisions, radium with or without tachymeter or 10-100 decimal div.

Waterproof stainless steel case, size 36 mm.

Functions : Start - Stop - Start by upper push-piece pressure. Fly-back to zero by depressing of lower push-piece

Use : Observations of every kind for sport and industrial purposes.

Ref. VF 712 Chronograph with hour register and calender

Lever movement 17 jewels, Incabloc, antimagnetic.

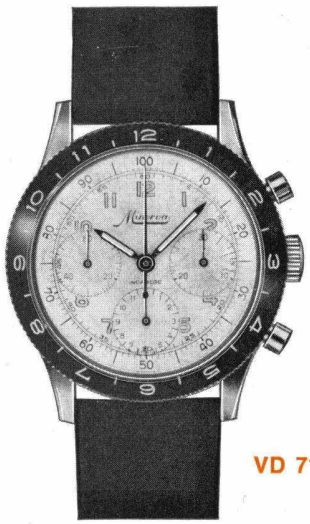
Metal dial with 1/5 second-divisions, radium, w/windows for calender. Stainless steel waterproof case, size 36 mm

Functions : Start - Stop - Start by upper push-piece pressure. Fly-back to zero by depressing of lower push-piece

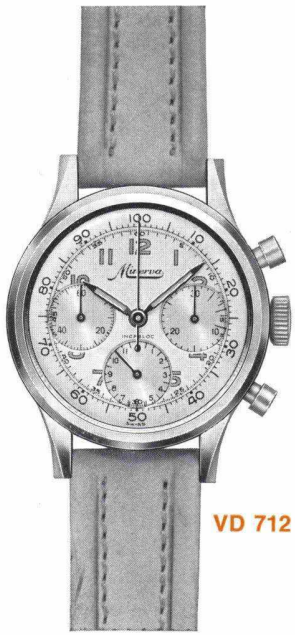
Use : Time measurements of every kind.

Ref. VF 018 Same Chronograph but with 18 Kt Gold case and dial with raised Goldfigures.

VD 812



VD 712 LT



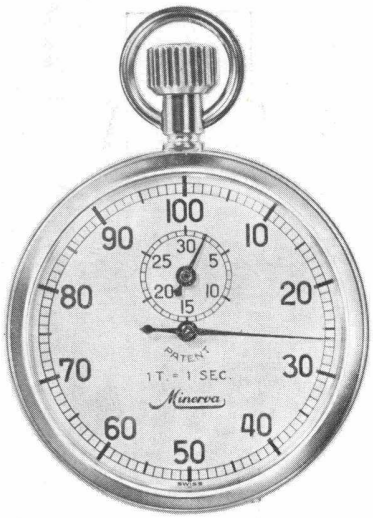
VD 712

Ref. VD 712 / Ref. VD 812 Chronograph with hour register (12 hours 1/5 second)

Lever movement 17 jewels, Incabloc, antimagnetic.
Metal dial with 1/5 second-divisions, radium, tachymeter.
Waterproof stainless steel case, size 36 mm.

Functions : Start - Stop - Start by upper push piece pressure. Fly-back to zero by depressing of lower push-piece.

Use : This chronograph with hour counter is recommended for sport and industrial purposes whenever time measurements of long duration are required.

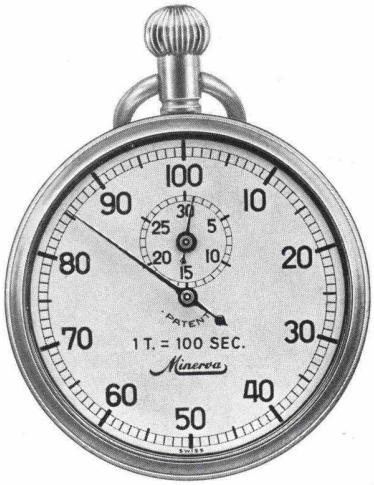


Ref. 4208 Dial 10-100 ($^1/_{100}$ sec.). Case size 51 mm.

1 turn = 1 second ; register : 30 seconds.

Functions : Start - Stop - Fly-back to zero by successive depressions of crown.

Use : Excellent for timing of short periods when highest precision occurs.



Ref. 5102 Dial 10-100. Case size 51 mm.

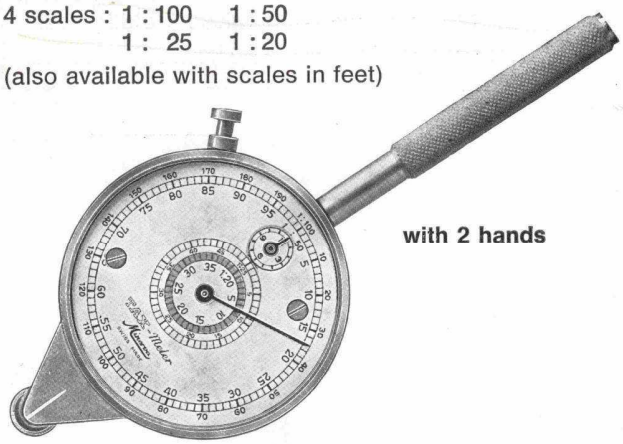
1 turn = 100 seconds ; register : 3000 sec. or 50 minutes.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : For oil refineries.

Ref. C 01 The MINERVA Curvimeter (patented)

4 scales : 1 : 100 1 : 50
1 : 25 1 : 20
(also available with scales in feet)



with 2 hands

Functions and use : At every turn of the long hand, the small hand advances of one division, giving thus the number of turns of the long hand. Thus, every distance is measurable without any risk of error with respect of the number of revolutions. It is possible to find out totals of length from several planes without adding intermediate results. If a distance has been measured by mistake, the error can be eliminated by going back for the same distance. Consequently the instrument works like an adding and subtracting machine.

After reading the result, push the lateral button and both hands fly back to zero.

The handling of the MINERVA Curvimeter is very easy and gives quick results. It is a highly precise instrument. The axle of the wheel moves in 2 jewelled holes ; thus it will never wear out, even after a long use.

The MINERVA Curvimeter is indispensable for electrical fitters, central heating fitters, plasterers, painters, technicians, architects, geographers, surveyors, officiers, etc.

Ref. 1457 Pulsometer dial ($^1/_{50}$ sec.) Case size 57,5 mm.

1 turn = 6 seconds.

Functions : Start - Stop - Fly-back to zero by crown pressure.

Use : The pulsometer is used by physicians, in hospitals, medical institutions and especially for sports competitors. The pulsometer scales give the number of pulsations per minute.

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