

## CALIBRE

### 1000-1001-1002

**1000 27.90 RA SC PC CAL CORR INST STS AM 17 j.**

**1001 27.90 RA SC PC CAL CORR INST STS AM BULL. 20 j.**

**1002 27.90 RA SC PC CAL CORR INST STS AM 20 j.**

<p>∅ 27.90 mm</p>	
<p>Movement height</p>	<p>4.00 mm</p>
<p>Power-reserve Jewel number Frequency Angle of lift</p>	<p>50 h 17/20/20 28'800 A/h 52°</p>



At 28800 vibrations per hour instant date correction and stop second.

The type of construction allows the manufacture of a very flat movement having a high chronometric performance with a large power reserve, which is also easy to repair.

A very large barrel supplies the energy to the balance oscillating at 28800 vibrations per hour.

The diameter of the balance at this frequency becomes clearly smaller than at the usual frequency of 19'800 vibrations, but its internal energy and consequently its timing properties remains very high.

The slimness of this calibre has been obtained by using the vacant space left by the smaller balance for lodging the automatic block, and also by utilising a centre wheel positioned off-centre.

The functions of the winding stem have been chosen in order to easily correct the date without changing the position of the hands.

During the hand setting operation, the second hand is stopped automatically.

The different functions of the winding stem are as follows:

- Position 1 manual winding
- Position 2 rapid date correction
- Position 3 stop-second, and hand setting

## Specifications

### Dimensions

Total diameter 28.40 mm

Casing-diameter 27.90 mm

Height of movement 4.00 mm

Diameter of screw pitch of winding stem 0.90 mm

### No. of vibrations

28'800 per hour. For verification the position 14'400 A/h of any timing machine can be used.

### Lifting angle

Angle of lift of balance 52°.

### Running time

The stainless alloy mainspring assures a running time of more than fifty hours.

### Ebauche

consists of:

1 plate

1 barrel bridge

1 train wheel bridge

1 pallet bridge

1 balance bridge

2 bridges for the self-winding mechanism, forming a block independent of the movement

1 calendar plate

### Jewelling

#### Cal. 1000

17 jewels as follows:

12 jewels for gear-train and escapement 2 balance end-stones

2 pallet jewels and 1 impulse-pin

1 beryllium bronze bushing at upper pivoting point of arbor in barrel bridge

#### Cal. 1001 Chronometer

20 jewels as follows:

12 jewels for gear-train and escapement

2 balance end stones

2 pallet stones and 1 impulse-pin 2 jewels for winding gear

1 jewel for driving gear for ratchet wheel, upper

1 beryllium bronze bushing at upper pivoting point of arbor in barrel bridge.

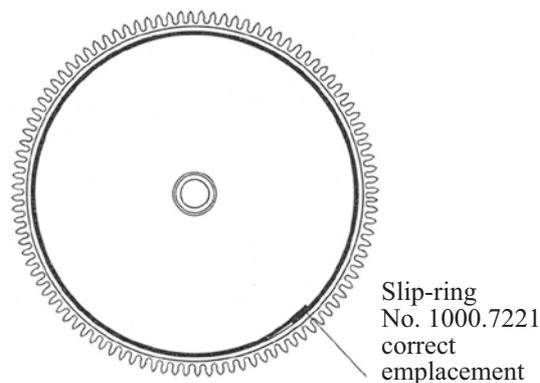
#### Cal. 1002

This calibre has the same number of jewels as 1001, but is not a Chronometer.

### Barrel

The barrel-cover is snapped on over the outside of the barrel-drum. A slip-ring of similar alloy as the mainspring is placed inside the barrel-drum. This allows the use of a dry lubricant which does not deteriorate and remains stable even if the watch is not in use.

In case the barrel needs to be cleaned, also replace the slip-ring no. 1000.7221 and slightly relubricate the mainspring with selflubricant 3.03.

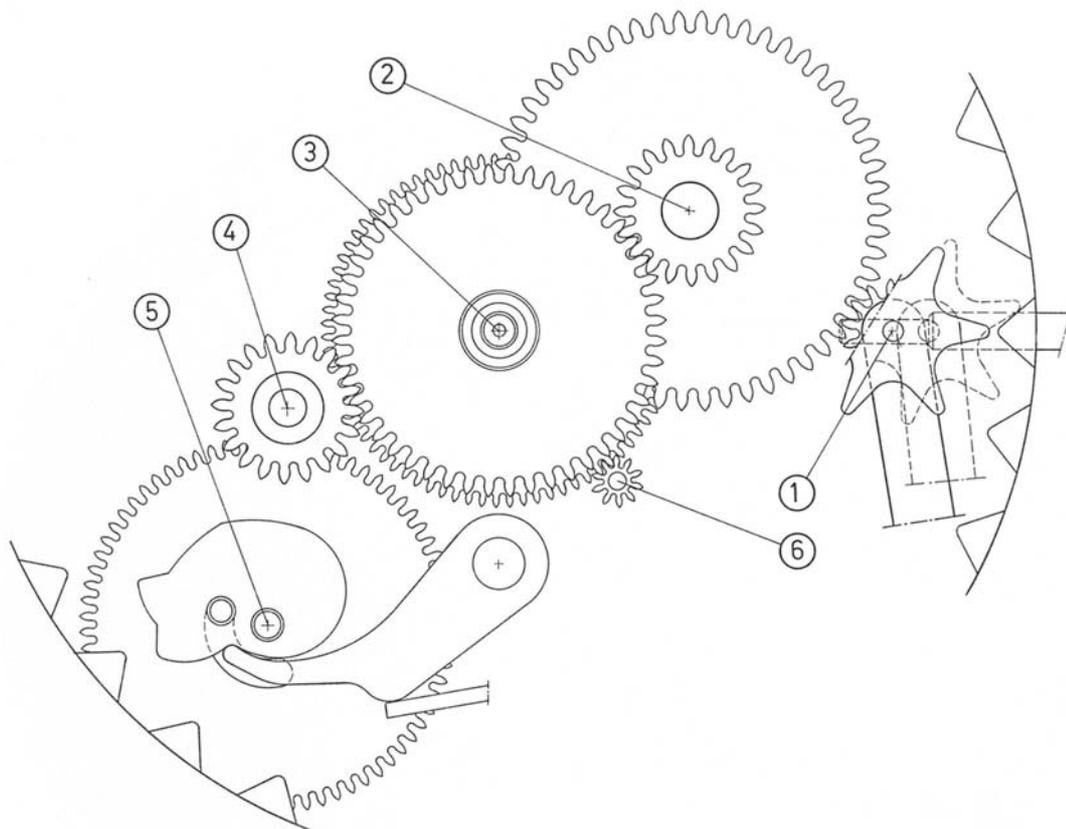
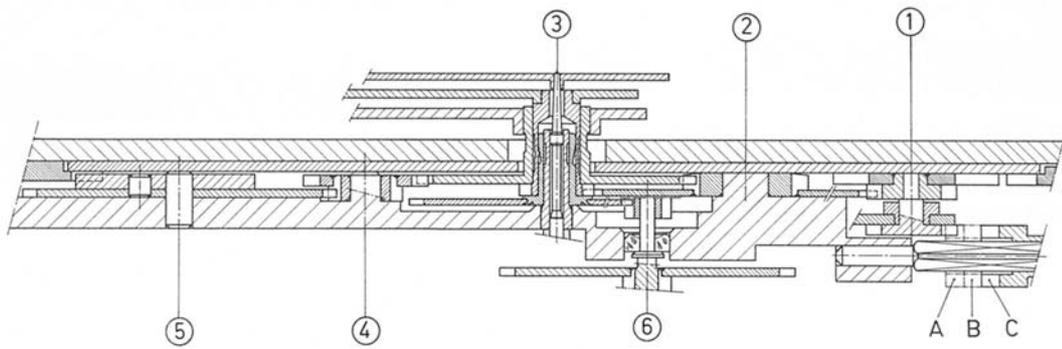


### Gear-train

The centre wheel is positioned off centre. The cannon pinion of the third wheel is tightly pressed onto its pivot-shank and meshes with the centre cannon pinion which consists of two parts-wheel and pinion.

The cannon friction is assured in between the wheel and pinion.

It is recommended to support the upper third wheel pivot whilst placing the small cannon pinion.



**Functions of the winding stem**

- A Stopping second hand and time setting
- B Instant date correction
- C Manual winding

- 1 Correcting lever mounted
- 2 Minute wheel with pinion
- 3 Center canon with pinion
- 4 Double calendar wheel
- 5 Date indicator driving wheel
- 6 Fourth wheel with pinion and canon

### **Escapement**

The escape wheel is made of steel and has 21 teeth.

### **Balance and spring**

The non magnetic assembly is comprised of a compensating flat balance spring and a beryllium-bronze screwless four armed balance. Equipoining is accomplished by milling the lower face of the rim.

### **Shock-protecting device**

Incabloc, both units are pressure set into the plate and balance bridge respectively.

### **Movable stud holder**

This allows the balance to be quickly and accurately set in beat without disassembling the balance bridge.



### Regulating device

The regulator is of the two-piece type, permitting wide displacements of the keyholder on adjusting.

The adjuster for the regulator permits very close timing corrections.

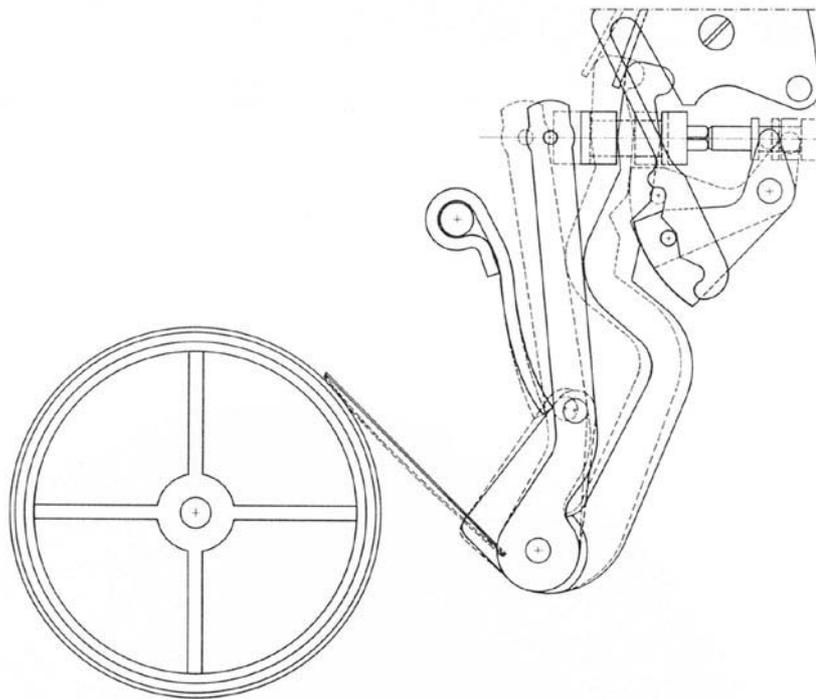
### Calendar device

The hour wheel meshes with the double calendar setting wheel, and the pinion of the setting wheel gears with the date indicator driving wheel.

A cam with date finger is mounted on the date indicator driving wheel which performs a complete revolution every 24 hours thus causing a new date to appear in the dial window.

The combination of cam, lever and spring permits an instant jump of the date indicator.





**Date correction**

By pulling the winding crown into position 2 (intermediate position), the clutch wheel meshes with the setting wheel and consequently with the date corrector (starwheel).

By revolving the winding crown either clockwise or anti-clockwise the date corrector conducts the date indicator in both directions. Every date-change is securely positioned by the date jumper guard.

**Stop-second**

The winding crown pulled into position 3 will automatically stop the second hand.

**Hand setting**

With the winding crown drawn into position 3 the correcting lever transmits its movement, over a pin traversing the plate, to the stop lever which is placed underneath the train wheel bridge. The stop lever carries a friction spring that blocks the rim of the balance, while the hands can be set to the correct time.

To restart the movement the winding crown is pushed towards the case.

**Fitting the hands**

The hands have to be fitted exactly after the date has changed at midnight.

It will be necessary to fit all the three hands before placing the automatic assembly.

**Automatic device**

For functional description of the mechanism, similar to calibre 550, refer to 'TG 13'. The rotor consists entirely of heavy metal.

**Disassembling the automatic block**

After unscrewing the gib, the rotor can be lifted off. The block is carefully removed sideways (movement uncased).

**Placing the automatic block**

When placing the automatic block, the following procedure should be applied (movement cased up):

1. Unwinding the mainspring
2. Removing ratchet wheel
3. Placing complete rotor
4. Replacing ratchet wheel

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## Lubrication of the movement

### Epilaming

The following parts are treated by a new system of epilaming that resists the cleaning and rinsing solutions normally used by watchmakers.

### Ebauches

Plate  
Barrel bridge  
Train wheel bridge  
Pallet cock

Rotor with pinion  
Upper bridge for automatic device  
Lower bridge for automatic device  
Date indicator guard

### Movement parts

Ratchet wheel  
Crown wheel  
Crown wheel core  
Wig-wag pinion  
Barrel drum  
Barrel cover  
Center wheel with pinion  
Minute wheel with pinion  
In-settings lower and upper for Incabloc  
Rotor axle  
Winding pinion  
Large wheel of winding wheel  
Small wheel of winding wheel

Date indicator driving wheel  
Winding stem  
Third wheel with pinion  
Third wheel canon  
Fourth wheel with pinion  
Center second pinion with ring  
Center second friction spring  
Center cannon wheel with tube  
Escape wheel with pinion  
Cap jewel for balance upper, lower  
Driving gear for ratchet wheel  
Gib of rotor  
Double calendar wheel

### Remarks

To prevent destruction of the epilame-coating we propose the utilisation of cleaning fluids whose pH is inferior to 10 (pH control paper is available from our Service Department).

As rinsing baths we recommend:

Benzine 110-140  
Isopropylic alcohol  
Benzine 80-95  
Trichlorethylene  
Perchlorethylene

**The epilam-coating is destroyed by the solvant Freon and cleaning fluids whose pH is superior to 10.**

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## Lubrication of the movement

### Selflubricant 3.03

Slip-ring of barrel drum  
Winding pinion  
Clutch wheel  
Setting lever stud and beak  
Setting lever spring  
Pressure spring for setting lever  
Yoke  
Yoke spring

Came and lever of driving wheel  
Came lever spring  
Date jumper  
Date jumper spring  
Beak of date jumper (inclination)  
Correcting lever mounted  
Correcting lever spring  
Setting lever

### Oil F 1.00

Pivoting of barrel arbor  
Pivoting of center wheel  
Pivoting of third wheel  
Pivoting of fourth wheel  
Pivoting of escapement wheel  
Pivoting of balance wheel  
Ring of center second pinion  
Friction spring-center second pinion  
Wig-wag pinion  
Wig-wag spring  
Hole of upper and lower winding gear  
Teeth of large and small winding wheel for winding gear  
Post for double calendar wheel

Post for date indicator driving wheel  
Third wheel canon  
Center tube-center wheel  
Winding stem  
Post for correcting lever  
Post for minute wheel  
Seat for crown wheel  
Crown wheel core  
Intermediate crown wheel  
Pivoting of ratchet driving wheel  
Pivoting of winding gear  
Pivoting of driving wheel for winding gear  
Rotor axle  
Gib of rotor  
Post for date jumper

### Selflubricant 3.02

Sattelites of winding gear

### Grease F (GF) 2.00

Pallet stones  
Center wheel-canon pinion

### Oil 1% F 1.01

Pivoting of lever  
Pivoting of corrector (starwheel)

The parts of the winding and date mechanism are selflubricated as per method SL 3.03 and can be washed in ultrasonic cleaning machines. The time of the ultrasonic cleaning operation should however not exceed the normal cleaning cycle of the machine.