

# MIYOTA

MOVEMENT SPECIFICATIONS

## CAL. : 0S22

**13-1/2 LINGE, 1/20 SEC CHRONOGRAPH WITH *RETROGRADE DEMO***

**ANALOGUE QUARTZ, 0 JEWEL**

BY CITIZEN WATCH CO., LTD. JAPAN

MANUFACTURED IN JAPAN

### 1. BASIC SPECIFICATIONS

(1) Cal. No.

\*TO CONFIRM WITH MOV'T DRAWING ATTACHED

CALIBRE	0S22
Ligne Size*mm	13-1/2 Φ30.80mm
Date	0
Total height	5.10mm
Battery life	Approx. 2 years*
Battery	SILVER OXIDE SR927W or equivalent

(\* 60 minutes chronograph operation per day)

(2) Time standard

Type of quartz : Tuning fork type quartz crystal

Frequency : 32,768Hz

Accuracy : **+/-20 s/month** worn under normal circumstances

(3) Balanceable weight of hand

Minute hand : Max. 0.4 μN.m

Chronograph second hand : Max. 0.035 μN.m

Other small hands : Max. 0.02 μN.m

(4) Function

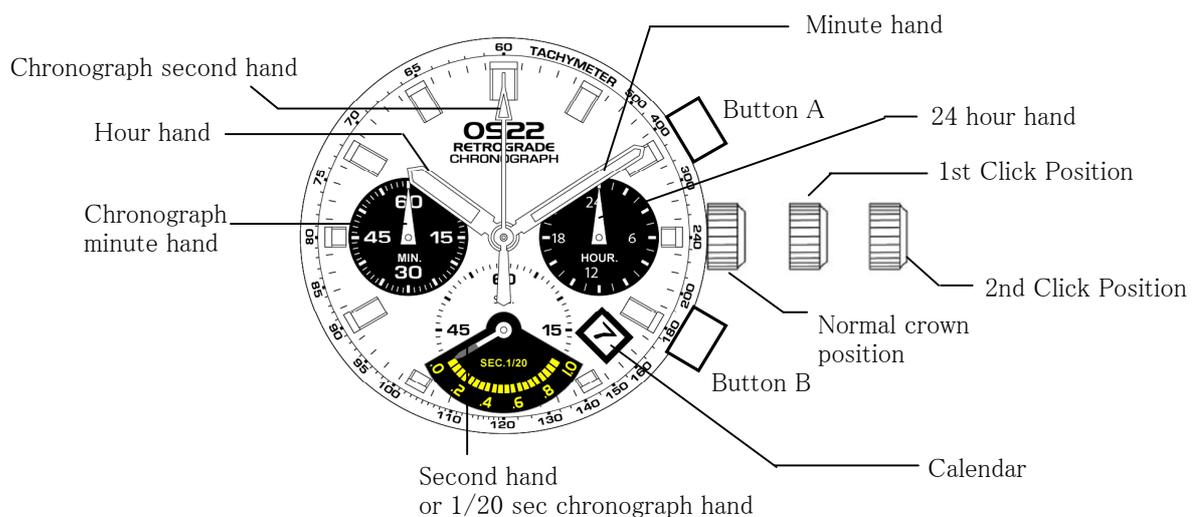
Chronograph 1/20 sec. basis (Up to 59 min. 59 sec.)

\* 1/20 sec retrograde demo : 60 secs

Powercell Saving Reset Mechanism (PSRM)

Over-loading Compensation Device (OLCD)

Digital Frequency Control (DFC) for time adjustment



\* Retrograde window degree : 120 degrees

**Button A : START / STOP**

**Button B : RESET / MODE CHANGING FOR NORMAL SECOND INDICATION MODE  
OR 1/20 SEC RETROGRADE CHRONOGRAPH MODE**

**1st Click Position : CALENDAR CORRECTION**

**2nd Click Position : TIME ADJUSTMENT / REFERENCE POSITION ADJUSTMENT**

## 2.SEPARATED PARTS

### Setting stem x1

Code	065-453
Length from movement center to far end of setting stem	23.00mm
Thread.....	Φ0.9mm x 8.50mm

## 3.OTHERS

### \* Measurement of time rate

The unit (gate) time of measurement must be set at "10 sec." or integer fold value of 10 sec. owing to the DFC system, and the measurement must be performed in the form of complete watch.

### \* Marking on movement

**JAPAN  
MIYOTA CO.  
0S22  
NO JEWELS**

### \* Typical clearance

Mov't - Caseback	minimum 150 microns
Top of hands - Glass	300 - 400 microns *
* subject to the glass, case structure, and the length of hand	

### \* Note

Please use aluminum material for Chronograph second hand

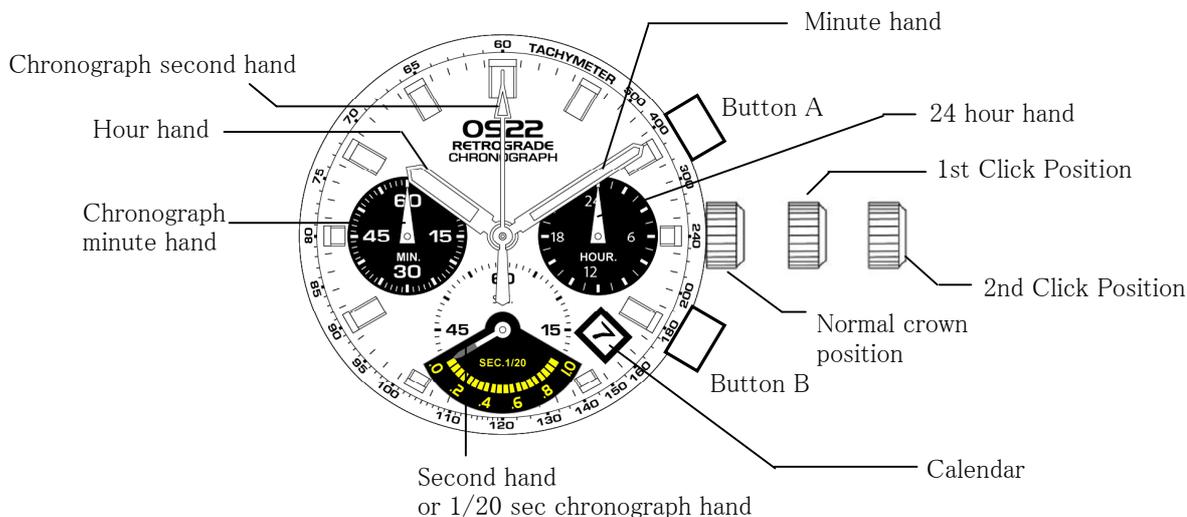
### \* TACHYMETER

The tachymeter is the device which measures the speed of an automobile. Knowing is how many seconds the car covers a distance of 1km, the meter can measure the approximate average speed per hour during a journey (up to the maximum measurable range of tachymeter is 60 seconds.)

If the chronograph is started at the same time as measurement, and stopped after 1 km, the average speed per hour can be determined according to the position of the second hand. If the car covers the distance of 1km in 45second, the average hourly speed during the journey will be about 80 km.

#### 4 INSTRUCTIONS MANUAL

##### A) DISPLAYS AND BUTTONS



##### B) SETTING THE TIME

1. Pull the crown out to the 2nd position so that the second hand stops at ZERO position.
2. Turn the crown to set hour and minute hands.
3. When the crown is pushed back to the normal position in synchronization with a time signal, small second hand begins to run.

##### C) SETTING THE DATE

1. Pull the crown out to the 1st position.
2. Turn the crown to anticlockwise to set the date.
  - \* If the date is set between the hours of around 9:00 PM and 1:00 AM, the date may not change on the following day.
3. After the date has been set, push the crown back to the normal position.

##### D) USING THE CHRONOGRAPH

This chronograph is able to measure and display time in 1/20(1/1) second united up to maximum of 1 hour.

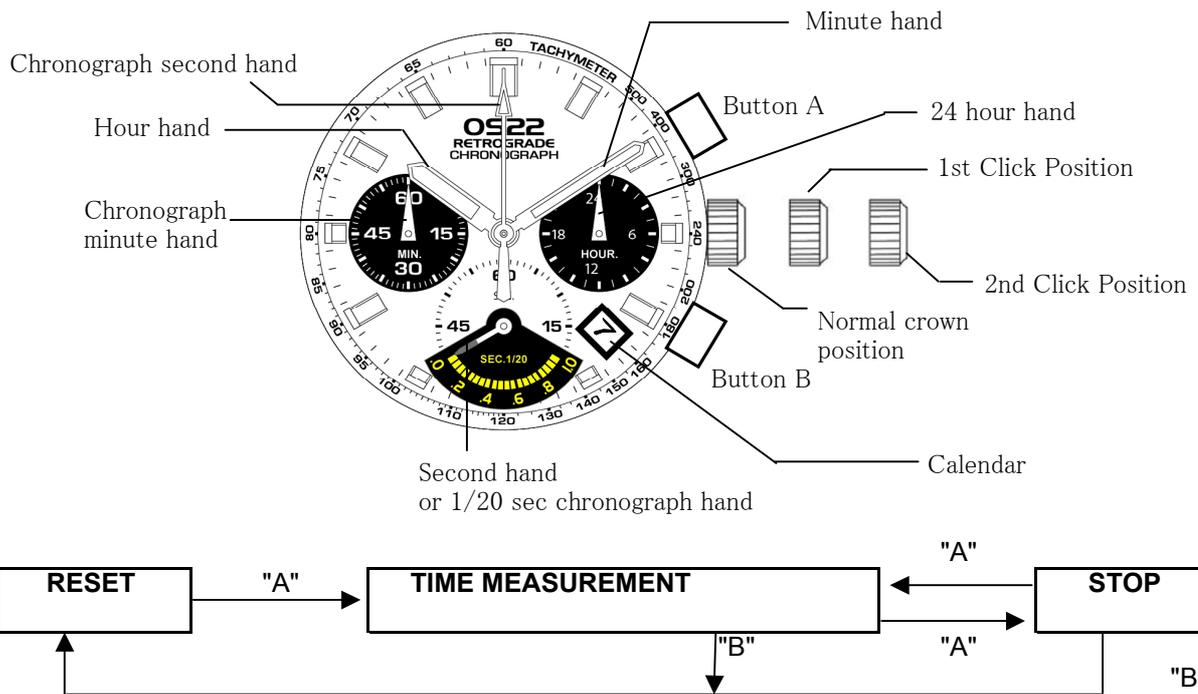
The retrograde chronograph 1/20(1/1) second hand keeps continuously for 60 seconds after starting, and then stops at ZERO position.

##### Measuring time with the chronograph

1. Press button "B" to change the watch to the chronograph mode.
  - The second hand stops at the ZERO second position, and changes to the chronograph 1/20(1/1) second hand.
2. The chronograph can be started and stopped each time button "A" is pressed.
  - The chronograph 1/20(1/1) second hand stops at the ZERO second position 60 seconds after starting, When button "A" is pressed to stop the chronograph, the chronograph 1/20(1/1) second hand advances rapidly to display the measured time.
3. Pressing button "B" resets the chronograph and all hands return to their ZERO positions.

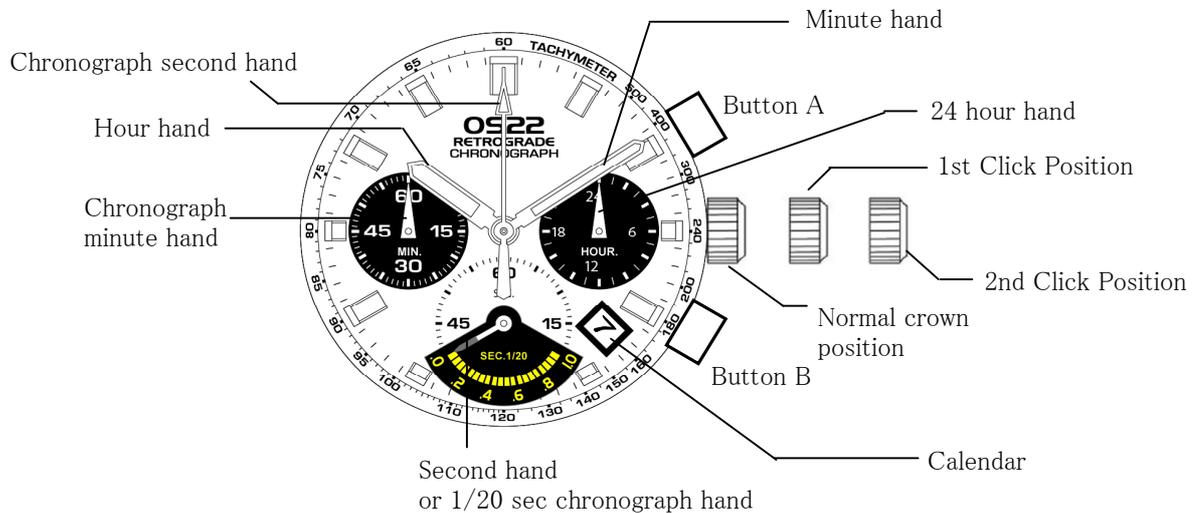
\* Moving of the retrograde chronograph is a demo.

Actual measurement will be shown when it stopped / STOP button is pushed.



#### E) CHRONOGRAPH RESET (INCL. AFTER REPLACING BATTERY)

This procedure should be performed when the chronograph second hand and chronograph 1/20(1/1) second hand do not return to the ZERO second position after the chronograph has been reset, and including after the battery has been replaced.

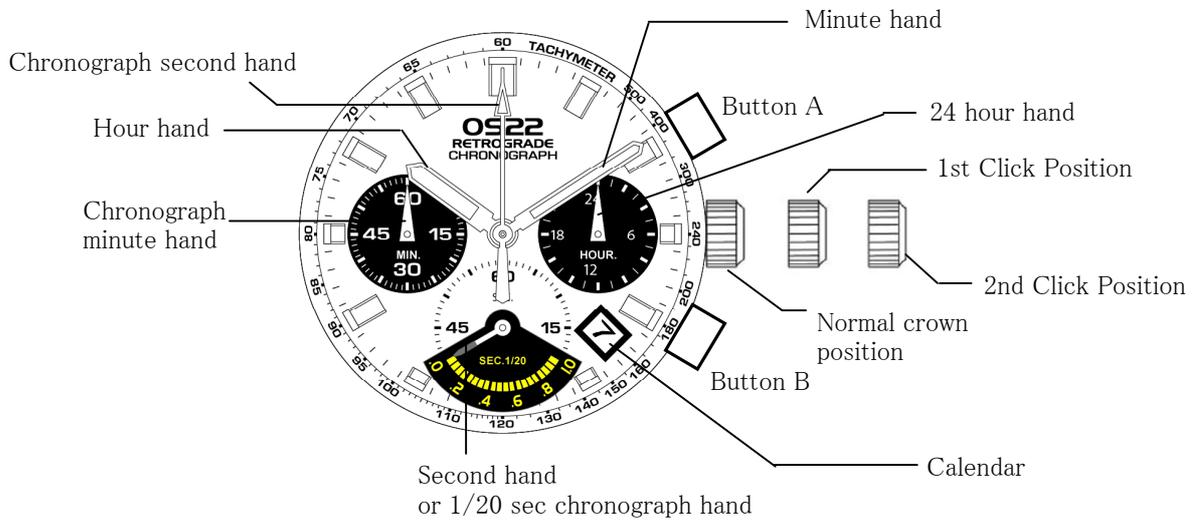


1. Pull the crown out to the 2nd position.
2. Press button "A" to set the chronograph second hand to the ZERO position.
3. Press button "B" to set the chronograph 1/20 second hand to ZERO position. The chronograph hands can be advanced rapidly by continuously pressing button "A" or "B".
4. Once the hands have been zeroed, reset the time and return the crown to its normal position.
5. Press button "B" to check that the chronograph hands are reset to the ZERO position.

\* Do not return crown to the normal position while chronograph second hand and 1/20 chronograph second hand return to ZERO position. Each hands stop on the way when crown are returned to normal position and these positions are recognized as ZERO position.

## F) FITTING METHOD OF HANDS

Place the module on case back shown in the figure and position the reference hand, then fit the hands according to the following procedures.



1. Pull out the crown to the time setting position. (2nd Click Position)
2. Turn the crown anticlockwise, and stop turning right after the date changes. After the date starts changing, turn the crown slowly.
3. Push in the crown by one step. Be careful of not turning the crown.
4. Fit the reference hand, hour hand and minute hand to the 12-o'clock position.  
When fitting the hands, remove the case back and place the movement on work stand (mount).

\* Demonstration of 1/20 Second Chronograph Hand at the actual position (8H-4H) can be made when the hand is fit at 12H as ZERO position.

\* For demonstration at other position, fit the 1/20 Second Chronograph Hand at 20 tick marks (scale) before the RETROGRADE STARTING POSITION as the ZERO position.

*These specifications might be changed without prior notice.*