

# BULOVA WATCH COMPANY, Inc.

## TECHNICAL BULLETIN



## Accutron® Series 219

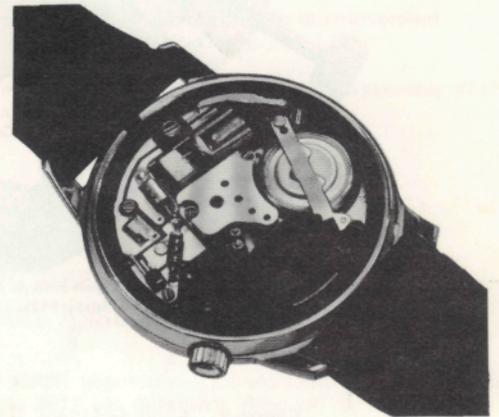


Figure 1. Series 219 Movement, Train Side

### INTRODUCTION

Servicing, testing, and replacing components have been simplified. In many instances, individual components can be replaced without disassembling the movement.

### DISCONNECT SYSTEM

When crown is pulled to its fully extended Position (3), a disconnect system de-activates the electronic circuit conserving the Power Cell for shipping and storage.

### REGULATION

The Accutron Series 219 is regulated in the same manner as a Series 218. When worn on the OUTSIDE of the wrist, it should be regulated to LOSE approximately 2 seconds a day in the dial up position. If the watch is worn on the INSIDE of the wrist, it should be regulated approximately PLUS 2 seconds a day, dial up. See Series 218 Manual for regulation procedure.

### CALENDAR

The Series 219 and the Series 218 CALENDAR parts are interchangeable with few exceptions. (See parts list on page 4.) Disassembly, cleaning, lubrication, reassembly and functions are similar to the Series 218.

### DISPLAYS

- Model 2190—Hour and Minute (Not Manufactured)
- Model 2191—Hour, Minute and Center Second
- Model 2192—Hour, Minute, Center Second and Date
- Model 2193—Hour, Minute, Center Second, Date and Day

### TECHNICAL DATA

#### MOVEMENT

Type: Electronically activated Tuning Fork  
Fork Frequency: 360 Hz (cycles per second)  
Index Wheel: 320 Teeth  
Jewels: 8

#### DIMENSIONS

Basic Movement: 28.75 mm x 4.4 mm  
(6.1 mm height with calendar)  
Ligne Size: 12<sup>3</sup>/<sub>4</sub>

#### POWER SOURCE

Battery: "Bulova" 218

#### CROWN POSITIONS

1. Innermost: Running and instant date change
2. Middle: Hack, hand setting and for removing stem.
3. Outermost: Power disconnect system.

NOTE: CROWN **MUST** BE IN POSITION 2 (MIDDLE) WHEN REMOVING STEM.

# Servicing Information on Series 219 Accutron

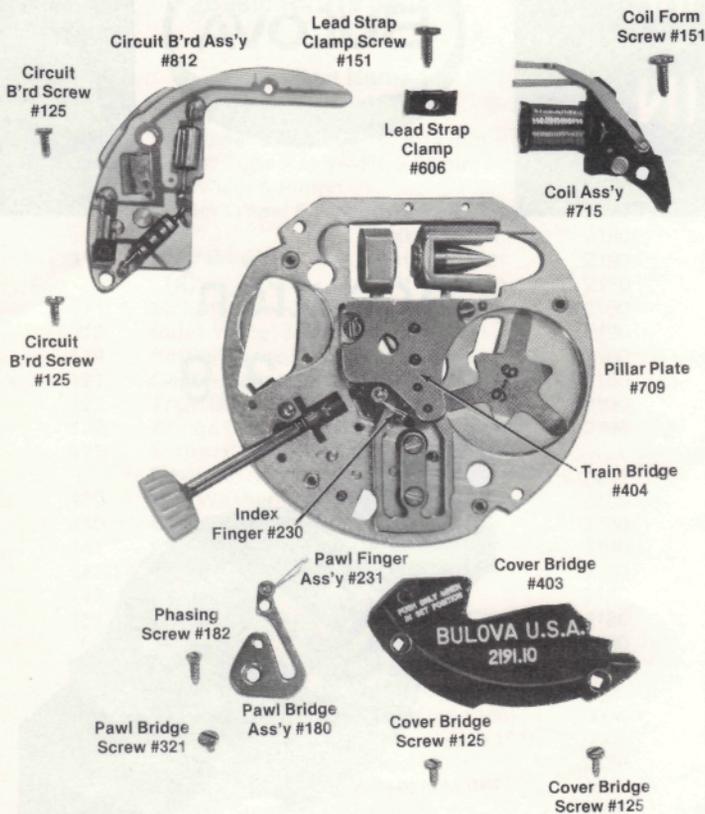


Figure 2. Exploded View

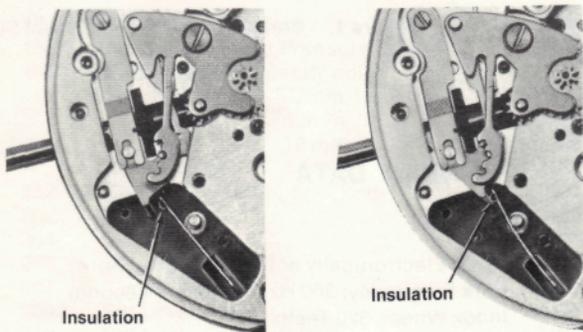


Figure 3. Switch Spring and Switch Post

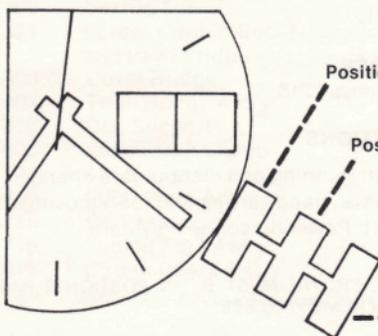


Figure 4. Crown Positions

**CAUTION:** STEM MUST BE IN MIDDLE (SECOND) POSITION WHEN REMOVING STEM AND CROWN.

## CLEANING

- It is not necessary to completely disassemble the Series 219 when cleaning the movement. However, it is necessary to remove the calendar indicators, coil assembly (part #715), and the P.C. (Printed Circuit) Board (part #812) before cleaning the movement. Parts #715 & #812 can be removed and replaced without disturbing any other part of the movement. Fig. 2.
- Before immersing any movement for cleaning it is imperative that metal slivers be removed from the cleaning jars and dryer. Use a magnet.

## ASSEMBLY INFORMATION

- The setting mechanism should be in Position 1, (innermost) while assembling the P.C. Board (part #812) Fig. 4.
- When hack operation adjustment is properly done and stem is pulled into Position 2 (MIDDLE) the pawl finger will be lifted  $\frac{1}{2}$  to 1 jewel thickness away from index wheel by pawl lift pin. When stem is pushed in Position 1 (INNERMOST) lift pin must be clear of Index Finger Gage. Fig. 6.
- When assembling pawl bridge assembly, the phasing screw must be tightened before the pawl bridge screw is tightened. Hold pawl bridge with phasing screw hole centered over tapped pillar plate hole while inserting phasing screw.

**CAUTION:** IT IS NECESSARY TO SUPPORT THE 3RD WHEEL JEWEL WHEN ASSEMBLING THE SWEEP HAND.

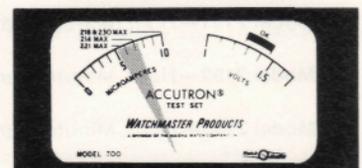
- When disengaged, the gap between the switch spring and switch post (contact) of the disconnect system should be 0.2 mm (2 switch spring thicknesses) when viewing from the dial side. Fig. 3.

**CAUTION:** EXAMINE INSULATION ON SWITCH SPRING AT SETTING CONTACT POINT. INSULATION MUST NOT SHOW SIGN OF DAMAGE. IF SWITCH SPRING MAKES ELECTRICAL CONTACT WITH SETTING LEVER POWER CELL WILL DISCHARGE RAPIDLY.

Figure 5. Meter Readings



10.0 microamperes max.



8.0 microamperes max.



0.4 microamperes max.

- Position 1. (INNERMOST)
- Normal operating
  - Instant date change

- Position 2. (MIDDLE)
- Time setting
  - Day changing
  - When removing stem

- Position 3. (OUTERMOST)
- Activates the disconnect system (conserves the battery during shipping or storage)