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**Finishing requirements for parts and assemblies of  
the mechanical watch movements**

机械手表机心零部件的精饰要求

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# Finishing requirements for parts and assemblies of the mechanical watch movements

## 1 Scope

This Standard specifies the requirements and inspection methods for parts and assemblies of the mechanical watch movements.

This Standard applies to parts and assemblies of the mechanical watch movements that have undergone finishing processing (hereinafter referred to as "parts and assemblies").

## 2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 10610, Geometrical product specifications (GPS) - Surface texture: Profile method - Rules and procedures for the assessment of surface texture

## 3 Requirements

### 3.1 Surface quality requirements of metal parts and assemblies

Metal parts and assemblies shall not have surface defects, such as indentation, pits, scratches, burn marks, local highlights after polishing, and spots and blisters after electroplating. The surface color of all parts and assemblies shall be uniform and coordinated.

### 3.2 Finishing requirements for metal parts and assemblies

#### 3.2.1 General

Mirror polishing for finishing of metal parts and assemblies means that the surface roughness  $R_a$  value shall not be greater than  $0.05\text{ }\mu\text{m}$ ; polishing means that the surface roughness  $R_a$  value shall not be greater than  $0.2\text{ }\mu\text{m}$ .

As long as the finishing process meets the surface roughness requirements, there is no limit for the processing method.

#### 3.2.2 Gear train parts

**3.2.5.3** The gem hole of the splint shall be chamfered and polished.

### **3.2.6 Automatic parts**

**3.2.6.1** The gear train and splint parts in the automatic train shall meet the requirements in 3.2.2 and 3.2.5 respectively.

**3.2.6.2** The surface of the automatic hammer shall be flat; the upper and lower planes shall be eliminated from irregular processing patterns; the outer circle of the hammer edge shall be chamfered and polished; the upper plane and chamfers can be processed by ray grinding or sandblasting.

**3.2.6.3** The exposed upper surface of the bearing of the automatic hammer shall be polished.

### **3.2.7 Screw**

**3.2.7.1** The upper plane of the screw cap shall be mirror polished; the outer circle of the screw cap shall be chamfered and polished.

**3.2.7.2** The end face of the screw thread shall be flat.

### **3.2.8 Printing plate**

**3.2.8.1** The printing on the printing plate (such as calendar ring, weekly calendar plate, moon phase plate) shall be clear, full and fast. There shall be no broken lines, uneven thickness, and obvious shortage of fonts and numbers. There shall be no defects such as brushed fonts, deformation, and white spots.

**3.2.8.2** The spray paint color of the dial shall be uniform; the paint surface shall be smooth and even. There shall be no discoloration, yellowing, peeling, fingerprints, sticky silk, paint residue or other debris.

### **3.2.9 Additional mechanism parts**

**3.2.9.1** The gear train and splint parts in the additional mechanism shall meet the requirements in 3.2.2 and 3.2.5 respectively.

**3.2.9.2** The upper surface of rod-type parts shall be polished; the surface shall be smooth and the contour lines shall be smooth.

## **4 Inspection method**

### **4.1 Inspection conditions**

Except for special requirements, the ambient temperature for inspection is 18 °C ~ 25 °C; during the entire inspection process, the temperature fluctuation is not more than 2 °C; the relative humidity is not more than 70%.

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