

Ken's Clock Clinic Style A/B/C Self Winding Clock Restoration Process

Note: All parts fabrication additional cost

Step	Description	Explanation
1	Full disassembly of movement	It is only possible to clean the movement correctly if fully disassembled. While some will ultrasonic clean a movement fully assembled, we will not. It results in rust, trapped contaminants, accelerates further wear. Movement cannot be serviced this way and provided with any kind of warranty without full disassembly.
2	Ultrasonic clean all components	Each component is cleaned and brushed to remove difficult dried grease, oil, oxidation, and light rust.
3	De-rust steel parts (add'l cost if severe)	Pillars, arbors and other steelwork are often rusted from clocks sitting for years in basements, attics, or other damp locations. Our de-rusting removes a majority of this oxidation, offering smoother friction points as well as a clean overall appearance. It also inhibits further rusting, conserving the clock.
4	Individually brush each component clean and bright	Each part is brush polished for two reasons. First, it is easier to spot problems, wear, and defects. Second, any surface contamination from previous cleanings is removed which could otherwise react with oils. The clock movement will have an attractive bright appearance when completed.
5	Special electrolytic cleaning to all conductive parts	Self winding clocks operating from 3 volts require super clean connections in order to avoid resistance related power loss. We use a special process on all conducting parts to assure low loss connections.
6	Inspect each part for wear	Each part receives under-the-microscope inspection for wear and contact damage.
7	Super polish all movement pivots	Pivots receive a 3 step restoration process: Stoning to remove wear marks and ridges, burnishing, and final polishing. The pivots are super bright and smooth when finished, assuring long life of mating bearing surfaces described in 8 below. If re-pivoting is required, it is done at this time.
8	Custom bushings finished flush as original	This is a time-tested method of bushing worn holes. It involves custom brass sleeves riveted and shaped to blend with the original oil sink. The new bearing surfaces are thus work hardened and long wearing. It is an ultra-conservative method, which unlike the often-used press-in box bushing method, is minimally invasive to the plates and results in a movement that looks and runs like new.
9	Polish rotary motor pivots	Often neglected, results in longer running, sure starting motor that wears well.
10	Rebush motor bearings or replace them if severe	Complementary repair to 9 above. Motor bearings are also power polished to remove subtle contamination and embedded steel particles from previous wear, and restore smooth inside surface.
11	Inspect and repair back stop spring	Often misadjusted, worn, cracked or missing, an exact replacement is fabricated and installed.
12	Restore back stop ratchet and commutator	Often the back stop spring will wear away the commutator ratchet resulting in a clock that will not stay wound. This item is fabricated and replaced. A new commutator is fabricated and installed at the same time if needed. Both are fabricated to exactly match originals, fit properly, and turn true.
13	Rewind coils and resistors	With Style A/B/C movements, it is often necessary to rebuild coil and resistor bobbins due to previous mishandling or yoke rust splitting the bobbins open. Subsequently, precision layer rewinding with silk-covered magnet wire is implemented. The result is a coil assembly nearly indistinguishable from original! Resistor wire is often deteriorated and no longer salvageable. These are similarly rewound.
14	Polish escapement pallets and readjust drop and lock	SWCC movements utilize Graham deadbeat escapements. In order to assure accurate timekeeping and reliable run, escapement wear MUST be polished out. Once wear is removed, drop and lock MUST be readjusted. Clocks will not run properly without proper lock and drop.
15	Tighten center wheel hub	Often neglected repair can result in erratic timekeeping if not addressed.
16	Replace or repair damaged wheels, contacts and other parts (add'l cost)	Contacts are often bent and cracked. This must be identified and corrected during the restoration process. Wheel repair is preferred, then replacement, and if not available, parts such as verges, escape wheels, ratchets, etc. can be fabricated.
17	Clean mainspring, rewind, replace or repair damaged or set mainspring (add'l cost to repair or replace mainspring)	Setting the mainspring correctly is a key to proper performance of Style A/B/C movements. To maximize battery life, the spring cannot be set too strong. To assure that the movement will run reliably, it cannot be set too tight. The exact set is dependent on the spring strength, pendulum weight, and other factors taken into account.
18	Replace or repair hourly cam components	The main wheel hourly cam, pin, knock away piece, platinum and ivory are often mutilated, worn, or even missing. These components are replaced with hand-fabricated exact matches, returning the hourly winding function to proper operation again--often for the first time in multiple decades.
19	Replace platinum surfaces on hourly contact, cam, and brushes	Platinum is often burned or worn due to incorrect voltages or extended use without service or cleaning. We replace with 99.99% pure platinum exact replacement materials, no substitutes for this very important contact material. Incorrect materials will slow winding or result in unreliable clock, which needs frequent restarts or just won't wind at all.
20	Replace any worn or broken insulator washers	Original insulators were made of early rubber or pressed paper material, which often becomes brittle or deformed. Coil end caps often snap in half due to rust developing on the coil's steel yoke, allowing the windings to bulge into the rotor. New insulators are fabricated and fitted matching originals exactly.
21	Re-clean movement, assemble and oil	After pivot and plate work, parts may have metal shavings from machining operations, be oily, dirty, or full of fingerprints. Second cleaning and rinsing removes these foreign substances, which might otherwise result in premature wear. Style A/B/C plates are usually re-lacquered for prolonged conservation from fingerprints and environmental contamination.
22	Replace missing washers and screws	Often, wrong screws are fitted, screws are stripped, or just plain missing, due to previous repair attempts. We restore all screws to original specifications. We also clean, polish and re-blue badly rusted screws to original appearance and robustness.
23	Precision adjustment of contact brushes and motor ass'y	Key to optimum winding efficiency, motor starting, smooth and quiet winding
24	Adjustment of synchronizer components (add'l cost)	For units equipped with synchronizers, they are often neglected for years due to the previous unavailability of a synchronizing signal. They are brought back to original specifications through our careful adjustments.
25	Repair defective hand bushings	Defective hand bushings can stop clock or cause imprecise hourly synchronization
26	Test run for 1 week	Problems can be identified early